

LAKE COUNTY ZONING NOTICE CUP-000584-2020

LIBERTYVILLE TOWNSHIP

The Lake County Zoning Board of Appeals has scheduled a public hearing at 1:00 p.m. on Tuesday, November 10, 2020, to be held via video and audio conference on the petition of Atkinson North Chicago, LLC, record owner and principal, requesting a Conditional Use Permit to allow a private heliport. AbbVie Aviation, LLC is acting as the representative of the record owner and principal.

The subject property is located at 13394 W. Atkinson Road, Libertyville, Illinois, 60048 and contains 10.06 acres (approximate). Please note that quantitative values may be subject to minor alterations due to surveyed conditions

PIN:1113400023

Pursuant to Section 7(e) of the Illinois Open Meetings Act, the October 16, 2020 Gubernatorial Disaster Proclamation, this hearing will be held via video and audio conference without a physical quorum present at the Lake County Zoning Board of Appeals office. This hearing may be continued and without further notice on the motion of the Zoning Board of Appeals. All interested persons participating in the Public Hearing will be given an opportunity to be heard. Individuals wishing to participate in the live hearing via video or audio conference should contact the Planning, Building and Development Department at 847-377-2151 by 4:00 P.M., November 09, 2020 to receive information and instructions on how to join the hearing via the Zoom website or by phone.

Interested persons may submit public comments in advance of the hearing. Include your full name and the subject title: LAKE COUNTY ZBA #CUP-000584-2020 with your written statement or voicemail message. Written statements may be emailed to PBDZoning@lakecountyil.gov or delivered to the Central Permit Facility, 500 W. Winchester Road, Libertyville, Illinois. To leave a voicemail message, call 847-377-2151. Comments received by 9:00 A.M. November 10, 2020 will be read during consideration of that item. Comments received during the hearing will be held until the end of the hearing. Public comments are limited to three minutes each.

This application is available for public examination electronically at <https://www.lakecountyil.gov/Calendar.aspx?EID=9314> or at the office of the Lake County Zoning Board of Appeals, 500 W. Winchester Rd, Libertyville, Illinois. Project Manager, Krista Braun (847) 377-2151.

Gregory Koeppen
Chair



AbbVie Aviation LLC Heliport Conditional Use Permit (CUP) Information

September 22, 2020

(DELEGATED)

Zoning Board of Appeals

**Lake County
Planning, Building and Development Department**

500 W. Winchester Rd. □ Unit 101 □ Libertyville, Illinois 60048-1331
Telephone (847) 377-2600 □ Email: LCPermits@lakecountyil.gov □ Fax (847) 984-5854

Website: <http://lakecountyil.gov/185/planning-building-development>

Revised 05/20/2019

LAKE COUNTY ZONING BOARD OF APPEALS
CONDITIONAL USE PERMIT APPLICATION

Applicant(s): Atkinson North Chicago LLC (land-owner)

Co-applicant(s): AbbVie Aviation LLC (lease-holder and designated authorized representative for land-owner)

Subject	Present Zoning: <u>Limited Industrial</u>
Property:	Present Use: <u>Leased for agricultural farming</u>
	Proposed Use: <u>Leased for agricultural farming and private heliport site</u>
	PIN(s): <u>11-13-400-023</u>
	Address: <u>13394 Atkinson Road, Libertyville, Illinois 60067</u>

Legal description:
(Deed, see **Exhibit A**)

Request: **I/we request a conditional use permit be approved to allow:**

AbbVie Aviation LLC respectfully requests a Conditional Use Permit for the development of a private heliport in unincorporated Lake County. Atkinson North Chicago LLC owns this property, but pursuant to a Ground Lease (see **Exhibit P**) has delegated all development activity related to this project to AbbVie Aviation LLC, a wholly owned subsidiary of AbbVie Inc.

AbbVie Aviation will develop the helipad for use by AbbVie Inc. AbbVie Inc. is a proud Lake County business, employer, and community leader. Established as a spin-off from Abbott Laboratories in 2013, AbbVie is a global, research-driven biopharmaceutical company headquartered in North Chicago. AbbVie employs nearly 10,000 people in Lake County, Illinois, and more than 47,000 people globally. With more than 1.1 million square feet of research and development space in Illinois, AbbVie strives to develop innovative advanced therapies for some of the world's most complex and critical conditions in the therapeutic areas of immunology, oncology, virology and neuroscience. AbbVie's medicines impact the lives of more than 30 million patients around the world. Throughout the state, AbbVie contracts with nearly 2,000 unique vendors that play critical roles in the supply chain to support its mission.

AbbVie's global operations recently increased because of its 2020 acquisition of Allergan, a \$58 billion-dollar company. Following this acquisition, AbbVie continues to have its principal executive offices in North Chicago but has many additional domestic and global sites and

increased transportation needs. AbbVie's enhanced business means robust growth throughout the next decade.

AbbVie Aviation is building the helipad to better enable AbbVie to meet its enhanced business goals. The competitive nature of drug discovery and development and the size of AbbVie's footprint in Lake County and across the region—including operations, facilities, employees and supply chain vendors—require AbbVie to adapt to continue the high-level of performance that delivers results for patients worldwide and paves the way for future growth. To continue to position AbbVie as the leading employer in Lake County and a growing Fortune 100 company, it became necessary to expand AbbVie's corporate aviation fleet beyond fixed-wing aircraft, based at the Waukegan National Airport, to include a helicopter and develop a small heliport in the vicinity of our headquarters. Adding a helicopter to our global fleet of aircraft allows for greater flexibility when traveling within a 400-mile radius of headquarters. Helicopters are efficient means of travel and regularly used among industry peers (i.e. Johnson & Johnson, Merck and Pfizer).

AbbVie Aviation worked carefully to consider the business needs of AbbVie, while being mindful of nearby neighbors. To that end, AbbVie Aviation will limit the use of the heliport. Most days, we expect two roundtrip uses on average ("roundtrip" defined as one landing and one take-off) during "standard business operating hours" ("standard operating business hours" defined as 7:00 AM – 7:00 PM), with many days throughout the year having no operations at all and a few days per month with nominally more activity. Travel before 7:00 AM or after 7:00 PM or on weekends would rarely occur. Additionally, the AbbVie aircraft is efficient and high-performing to minimize noise associated with it.

Furthermore, while the heliport will be registered as private, AbbVie Aviation desires to allow use of the heliport for a broader community benefit. Therefore, AbbVie Aviation will allow emergency service organizations use and access to the heliport in cases of public emergency. In meeting with Lake County Emergency Management Agency on September 20, 2019, we learned the county agency does not currently include aviation as part of its emergency planning. Upon completion of the heliport site, estimated to be summer 2021, we encourage the agency to account for the heliport as part of the master county emergency planning – and aviation capabilities throughout the county in general.

To facilitate use by emergency services, AbbVie Aviation has drafted a Memorandum of Understanding to the Lake County Emergency Management Agency (see **Exhibit B**). This document provides LCEMA access to the site. Additionally, we discussed best practices with multiple emergency services providers in Lake County for us to understand specific needs of these agencies and incorporate their feedback into the site design. This includes a installation of a KNOX Box driveway entry access for Fire Department access to the site, which will be securely gated with controlled access by the fire station. Additionally, AbbVie Aviation incorporated a circular driveway design for large emergency vehicles, such as ambulances and fire trucks, to safely and efficiently enter and exit the heliport site. AbbVie Aviation's representatives met with Lake County Sheriff John Idleburg and Deputy Sheriff Anthony Vega on October 7, 2019 to discuss the heliport use by emergency service personnel and the office is supportive of the heliport use by the county emergency service agencies (see **Exhibit C**).

Considering the near proximity of Libertyville Fire Station No. 3, North Chicago Fire Station No. 2 and Northwestern Medicine Lake Forest Hospital, we engaged each entity to determine how the heliport could enhance their operations. AbbVie Aviation's representatives met with Libertyville Fire Chief Richard Carani on September 9, 2019 to discuss the site plan and usage, including any considerations the fire station has for fencing material or design as they are neighboring properties. Chief Carani is supportive of the heliport site design and usage. He expressed support for having access and gated control for emergency services seeking access to the site (see **Exhibit D**). Despite the near proximity to the station, the site design also includes a fire suppression system to ensure protection.

AbbVie Aviation's representatives also met with North Chicago officials on October 4, 2019, given the close proximity of North Chicago Fire Station No. 2. Mayor Leon Rockingham, Jr., Police Chief Lazaro Perez and Fire Chief Dell Urban are supportive of the heliport site and access for use by emergency services. As Atkinson Road is under North Chicago jurisdiction, the city also agreed to work with AbbVie Aviation for necessary permits for road access (see **Exhibits E and F**).

Northwestern Medicine Lake Forest Hospital is supportive of the heliport site, design and access, stating it would be beneficial to the hospital and community to have this heliport as a back-up for the helipad they currently operate on their site (see **Exhibit G**).

AbbVie Aviation's representatives met with Lake County Partners President and CEO Kevin Considine on September 27, 2019 to discuss the heliport; the organization is supportive of ensuring businesses in the county remain competitive and sees this site as an important public safety benefit as well (see **Exhibit H**).

Based on comments from site plan review received from Krista Barkley Braun from the Lake County Planning, Building and Development Department on November 19, 2019, the following municipalities are within a 1.5-mile radius of the heliport site and will receive notice prior to the Zoning Board of Appeals hearing: North Chicago, Libertyville, Lake Forest, Lake Bluff, Green Oaks, and Mettawa. AbbVie Aviation will conduct outreach to all the municipalities prior to the hearing to discuss the project. In addition, AbbVie Aviation met with some members of the Knollwood Neighbors to gather feedback and provide an overview of the proposed site on November 4, 2019.

The heliport site will include: a helipad, a small garage building for snow removal equipment, security system infrastructure, a lavatory and vehicle parking among other site necessities. The heliport will not serve as a hangar, barring unexpected weather conditions; inspection, storage and maintenance of the aircraft, including re-fueling, will occur at the corporate hangar at Waukegan National Airport. Appropriate fencing and landscaping along the perimeter will be used to ensure safety. Adequate privacy, light and air impacts to neighboring properties were considered when developing the site plan to include a lighting system that is pilot-controlled to minimize light pollution in the surrounding area.

Explain why this conditional use permit is justified:

This conditional use permit will benefit Lake County. While AbbVie Aviation proposes to build a helipad to improve AbbVie's business operations in Lake County and the region and assist in its business growth, the heliport will also be available for use by emergency service agencies throughout the county. The heliport will also advance Lake County's overall infrastructure without cost to the county.

AbbVie Aviation will build a premier heliport suitable for this location. AbbVie Aviation carefully designed the heliport site, flight patterns, and site usage to minimize impact to the neighbors or natural resources in the area. AbbVie Aviation developed the site plan in coordination with the Illinois Department of Transportation Division of Aeronautics (IDOT) and Lake County Department of Building, Planning and Development to optimize safety and minimize noise and environmental impacts. The site will meet or exceed all Federal Aviation Administration (FAA) design standards.

To show our commitment to the community, AbbVie Aviation retained several expert firms to ensure compliance with all local, state and federal regulations. Specifically, Bollinger Environmental was retained to assess and perform a wetland determination and soil topography analyses. Additionally, Rick Fiddler Aviation was retained to consult on proposed flight patterns that avoid residential and sensitive areas and provide input on site plan design to ensure FAA safety standards are followed. And Mead & Hunt, a professionally-licensed engineering firm with aviation expertise, was retained to develop a comprehensive site plan with safety at the forefront. Mead & Hunt also performed a comprehensive air quality assessment and noise study using an FAA Office of Environment and Energy approved software technology (see **Exhibit I**). The modeling used the exact specifications of the AbbVie helicopter, the features of site location, anticipated flight patterns, and operating frequency to determine noise impact in the vicinity. The results show no significant air quality impact as defined by the FAA Aviation Emissions and Air Quality Handbook. The study demonstrated that the primary noise contours do not leave the property, based on standards established by the FAA, Environmental Protection Agency and United States Department of House and Urban Development.

Approval Criteria: **The Lake County Zoning Board of Appeals is required to make findings of fact on your request. You should "make your case" by explaining specifically, how your proposed request relates to each of the following criteria:**

A. the use in its proposed location will be consistent with the stated purpose and intent of the Lake County Code ("Purpose and Intent," section 151.005);

The proposed heliport site is consistent with the "Purpose and Intent" of the Lake County Code. AbbVie Aviation considered the health, safety, and general welfare of existing and future residents of the unincorporated area of Lake County when it assessed the site for use as a heliport. Specifically, AbbVie Aviation is protecting residents by ensuring:

- AbbVie Aviation's site plan accounts for the Regional Framework Plan. Based on Lake County's Future Use Zoning plan, this land is and will remain industrial as it is currently

zoned. (§151.005 Section (A)).

- AbbVie Aviation has protected landowners from any adverse impacts associated with development of this land. (§151.005 Section (E)).
 - AbbVie Aviation has designed the site to provide adequate noise mitigation by selecting flight pathways for take-off and landing over I-94 to reduce noise over residential areas.
 - AbbVie Aviation designed the site to ensure maximum flight visibility and safety.
 - AbbVie Aviation has designed its proposed heliport operations to minimize use outside of standard business operating hours.
 - AbbVie Aviation has designed the site to minimize noise impact and provide adequate site barriers to secure the site.
 - AbbVie Aviation will not store, maintain or refuel the AbbVie helicopter at this site, but, rather AbbVie will use its facility at the Waukegan National Airport for these purposes.
- AbbVie Aviation will implement land use and open spaces to preserve agricultural uses of the land. (§151.005 Section (F)). The site is currently 10 aggregate acres. AbbVie Aviation will minimize its footprint on the land to enable the remainder to continue to be used for agriculture purposes or open green space.
- AbbVie Aviation will control development to reduce adverse environmental impacts by designing the site to avoid any development on wetlands. AbbVie Aviation engaged a certified wetlands specialist to survey the site (see **Exhibit J**). That survey found minimal wetlands and AbbVie Aviation was able to design around them. (§151.005 Section (G)).
- AbbVie Aviation will protect the site from fire, flood, and other dangers. (§151.005 Section (Q)). AbbVie Aviation will install a fire suppression system above and beyond what is required by the FAA. Furthermore, Libertyville Fire station No. 3 will have access to the site with gate-controlled KNOX Box. Additionally, AbbVie Aviation will design the site to minimize water run-off to surrounding properties.
- AbbVie Aviation's site design accounted for the privacy, light and air in the area. (§151.005 Section (R)). AbbVie Aviation will minimize additional light pollution by implementing pilot-controlled lighting, designed to turn the lights on only when the helicopter approaches the heliport. Further, AbbVie Aviation designed its flight paths to protect neighbor privacy. It will approach the site from I-94.

B. the proposed use in its proposed location complies with all applicable standards of the Lake County Code, including any applicable of section 151.111; and

The proposed heliport site location complies all applicable standards of the Lake County Code, including section §151.111. This section allows for a heliport to be built in non-residential, limited industrial zoned properties such as this one, subject to approval of a conditional use permit by the Zoning Board of Appeals.

Additionally, the proposed site plan complies with all use standards described in §151.112 (D) for airports and heliports. Those use standards are:

- (1) The use may be subject to the site capacity calculation/site plan review procedures of § [151.070](#). Site capacity/site plan review shall be conducted concurrently with any required conditional use permit review.
 - a. AbbVie Aviation conducted a formal site plan review with Lake County

Department of Planning, Building and Development, including incorporating input from the Departments of Public Works, Engineering, and Health, prior to applying for the Conditional Use Permit through the Early Assistance and meet all site capacity standards; AbbVie was approved for site capacity. AbbVie Aviation initiated an Early Assistance process on September 25, 2019 with Krista Barkley Braun and received written comments for site plan review on November 19, 2019. AbbVie Aviation incorporated all pertinent clarifications or modifications requested by the county for the site plan submission.

- (2) Documentation shall be submitted showing that the site complies with all applicable state and federal requirements.
 - a. With this Application, AbbVie Aviation submits the Certificate of Approval ("AER 2060 Form") that was submitted to IDOT on September 13, 2019 (see **Exhibit K**). This form initiated the process of establishing a heliport on the site. Illinois is an FAA block grant state, therefore the Illinois Department of Transportation Division of Aeronautics (IDOT) manages the airspace approval process required by FAA. Additionally, Roger Finnell, IDOT Flight Safety Coordinator, conducted an on-site review of the property. IDOT approved the site by filing an airspace approval form ("Form 7480-1") to the FAA on behalf of AbbVie Aviation on October 18, 2019 (see **Exhibit L**).
 - b. The FAA will conditionally approve the request and issue a Certificate of Construction, dependent upon all local zoning Lake County permits being issued. Since IDOT manages the airspace approval process required by FAA, there is no further review expected.
- (3) Setbacks, landscaping and fencing appropriate to the specific nature of the use proposed shall be established during the conditional use permit review process.
 - a. The heliport and garage building will be more than 500 feet from Atkinson Road. Additionally, the helipad and garage will be enclosed by a secured, gated fence. AbbVie Aviation will install landscaping to match current environment along Atkinson Road.
- (4) The site shall have frontage on and access to a collector or arterial street, provided that the highway authority with jurisdiction over the subject road may approve alternative access.
 - a. Atkinson Road is under the jurisdiction of North Chicago. AbbVie Aviation engaged North Chicago Department of Economic & Community Development Director Victor Barrera on October 4, 2019 to inquire about a curb cut permit and Atkinson Road access. In the letter of support from North Chicago, they state they will work with us to obtain all necessary permits required for Atkinson Road access (see **Exhibits E and F**); AbbVie Aviation will work with North Chicago to comply with all ordinances and permits necessary.
- (5) All areas proposed for active use, including fuel storage areas, shall be fenced.

- a. The entire site perimeter will be secured and fenced with gated key-card access only. Select, approved personnel from AbbVie Aviation and AbbVie Aviation will be granted access via the main entryway from Atkinson Road, in addition to the Fire Station access via the KNOX Box. There will not be a fueling tank or fuel storage area on site.
- (6) Takeoff and landing facilities shall be located so as to minimize the impact on existing and proposed residential areas.
 - a. To minimize flight path over residential areas, AbbVie Aviation along with IDOT (Illinois Department of Transportation) and the FAA (Federal Aviation Administration) during a site evaluation, established two entry and exit points with 90 degrees of separation for safe and effective takeoff and landing conditions. The FAA took into consideration environmental impact, housing developments or commercial businesses. Currently, the preliminary entry and exit points are to the Northwest and Southwest over Interstate I-94. Once over the I-94 corridor the helicopter would fly easterly to Lake Michigan or a westerly route as needed depending on weather and wind conditions, pilot judgement, and safety of flight.

C. the proposed use in its proposed location will not have a substantial adverse impact on any of the following, either as they exist at the time of the application or as they may be developed in the future due to implementation of the Comprehensive Plan;

1. adjacent property,

To ameliorate adverse impact on the adjacent properties, AbbVie Aviation will limit the use of the heliport. Most days, we expect two roundtrip uses on average (“roundtrip” defined as one landing and one take-off) during “standard business operating hours” (“standard operating business hours” defined as 7:00 AM – 7:00 PM), with many days throughout the year having no operations at all and a few days per month with nominally more activity. Travel before 7:00 AM or after 7:00 PM or on weekends would rarely occur. Additionally, the AbbVie aircraft is efficient and high-performing to minimize noise associated with it.

To assess the adjacent property impact, AbbVie Aviation engaged Mead & Hunt, a professionally licensed engineering firm specializing in aviation, to conduct a noise and air quality assessment. Mead & Hunt also performed a comprehensive air quality assessment and noise study using an FAA Office of Environment and Energy approved software technology. The modeling used the exact specifications of the AbbVie helicopter, the features of site location, anticipated flight patterns, and operating frequency to determine noise impact in the vicinity. The results show no significant air quality impact as defined by the FAA Aviation Emissions and Air Quality Handbook. The study demonstrated that the primary noise contours do not leave the property, based on standards established by the FAA, Environmental Protection Agency and United States Department of House and Urban Development.

Specifically, based on estimated flight operations at the heliport and proposed flight patterns with the Sikorsky S76-D helicopter, Mead & Hunt used the Aviation Environmental Design Tool (AEDT) version 2D, an FAA-approved software system, to dynamically model aircraft performance in space and time to determine emissions and noise estimates. The model uses the Federal Aviation Regulations (FAR) Part 150 (14

C.F.R. Part 150) yearly day-night average sound level (DNL) metric, which is measured in decibels (dB). DNL is a cumulative noise metric that represents the average daily noise level; the FAA, Environmental Protection Agency (EPA) and United States Department of Housing and Urban Development (HUD) established 65 DNL as the threshold indicating significant cumulative noise impacts in residential and school areas.

The result of the noise contours modeling shows the 65 DNL contour is currently contained entirely on the property and does not extend north or east, where adjacent neighboring properties are located. As a result, there will be no significant aircraft noise impacts with the proposed heliport development that would trigger an impact, based upon standard FAA design criteria.

Further, Mead & Hunt also analyzed the air quality impact by measuring primary emission elements. The model estimates a very minimal increase in emissions in several types of emissions, however these increases are well below the *de minimis* thresholds identified in the FAA Aviation Emissions and Air Quality Handbook version 3, update 1 (January 2015). Therefore, there are no significant air quality impacts.

2. the character of the neighborhood,

The heliport will not impact the character of the neighborhood. The immediate adjacent properties are all zoned, intensive industrial, limited industrial, or manufacturing. There are no adjacent residential properties.

While there are residential areas further east, there is a densely forested tree and shrub area as a buffer zone. AbbVie Aviation designed the site to keep a distance from those residential areas by placing the site near Atkinson Road and the Libertyville Fire Station No. 3 and utilizing landscaping and fencing along the east side of the site.

The heliport site plan design includes a small garage building to house snow-removal equipment, a lavatory, two-vehicle parking spots and security system infrastructure. The design components, including the fencing, landscaping and materials, will be aesthetically pleasing, high-quality and consistent with the other AbbVie properties. The heliport will be offset and positioned behind the shed to minimize line-of-sight from Atkinson Road. The helicopter will not be stored at the heliport site and will fly to and from Waukegan National Airport. Therefore, most of the time, the site will not be obviously a heliport or even in use.

3. natural resources,

AbbVie Aviation's proposed site use will not significantly adversely affect the area's natural resources. AbbVie Aviation will minimize its footprint on the land to enable the remainder to continue to be used for agriculture purposes or open green space.

Additionally, AbbVie Aviation designed the site to avoid wetlands. AbbVie Aviation engaged Bollinger Environmental, Inc. to conduct an on-site wetland assessment and farmed wetland determination of the heliport proposed site on September 26, 2019. Two nearby wetlands were identified, but no farmed wetlands were identified via the Natural Resources Conservation Service (NRCS) 1998 wetland mapping conventions. Using this information, Mead & Hunt surveyed the land, including doing soil topography analyses (see **Exhibit M**). The site plan then was created to completely avoid the identified wetlands and have at least a 100-foot buffer area with the nearest wetland area.

AbbVie Aviation also filed an application with McHenry-Lake County Soil and Water Conservation District (SWCD) and received a letter on November 13, 2019 that found the impact to natural resource from the proposed site use is minimal for purposes of the Natural Resource Information (NRI) report; a full NRI report is not necessary. SWCD stated the letter fulfills our requirement to notify of the land use changes, as required by state law, and SWCD considers this matter closed (see **Exhibit N**).

Further, AbbVie Aviation engaged Bollinger Environmental, Inc. to review the site for any protected resources using the Ecological Compliance Assessment Tool (EcoCAT) through the Illinois Department of Natural Resources (IDNR). The EcoCAT determined the following protected resources may be in the vicinity of the heliport site: Middle Fork Savanna, Oak Grove Botanical Area, Middle Fork Savanna Nature Preserve, Iowa Darter (*Etheostoma exile*) and Northern Long-Eared Myotis (*Myotis septentrionalis*), (see **Exhibit O**). IDNR evaluated the information from the EcoCAT and issued a letter on October 7, 2019 concluding adverse effects to the protected resources identified are unlikely (see **Exhibit P**).

And finally, AbbVie Aviation will decommission the heliport site if it no longer meets our or the property owner's business needs and return it to its original state of open, green space for agricultural farming (see **Exhibit Q**).

4. infrastructure,

The heliport site will not be a strain on existing Lake County infrastructure. In consultation with the Department of Health, the heliport site lavatory will not be on the sewer system; AbbVie Aviation received a letter from Abbott stating sanitary sewer connections from Abbott Park are not available to our parcel (see **Exhibit R**). There is also a sewer connection just south of the property, but AbbVie Aviation's representatives met with the Village of Green Oaks on December 16 regarding a sewer connection, and received a letter indicating a sewer connection is not available to the property (see **Exhibit S**). Therefore, the site plan includes a small holding tank.

Additionally, the roadway access from Atkinson Road is sufficient to meet the needs of our driveway access. Under jurisdiction of North Chicago, AbbVie received confirmation from North Chicago Public Works that the city will work with AbbVie to obtain necessary permits for Atkinson Road access (see **Exhibit F**).

Lake County Public Works will provide water service for the facility; AbbVie will work with the department to obtain necessary permits.

5. public site, or

The heliport is a private site, but AbbVie Aviation is committed to ensuring the community has the benefit of the heliport for use by emergency services personnel.

To facilitate use by emergency services, AbbVie Aviation has drafted a Memorandum of Understanding to Lake County Emergency Management Agency. This document provides LCEMA access to the site. Additionally, we discussed best practices with multiple emergency services providers in Lake County for us to understand specific needs of these agencies and incorporate their feedback into the site design. This includes an access KNOX Box for gated controlled access by the fire station for emergency services. Additionally, AbbVie Aviation incorporated a circular driveway design for large emergency vehicles, such as ambulances and fire trucks, to enter and

exit the heliport site safely and efficiently.

Considering the near proximity of Libertyville Fire Station No. 3, North Chicago Fire Station No. 2 and Northwestern Medicine Lake Forest Hospital, we engaged each entity to determine how the heliport could enhance their operations. We met with Libertyville Fire Chief Richard Carani on September 9, 2019 to discuss the site plan and usage, including any considerations the fire station has for fencing material or design as they are neighboring properties. Chief Carani is supportive of the heliport site design and usage. He expressed support for having access and gated control for emergency services seeking access to the site. Despite the near proximity to the station, the site design also includes a fire suppression system to ensure protection.

AbbVie Aviation also met with North Chicago officials on October 4, 2019, given the close proximity of North Chicago Fire Station No. 2. Mayor Leon Rockingham, Jr., Police Chief Lazaro Perez and Fire Chief Dell Urban are supportive of the heliport site and access for use by emergency services. As Atkinson Road is under North Chicago jurisdiction, the city also agreed to work with AbbVie Aviation for necessary permits for road access.

Northwestern Medicine Lake Forest Hospital is supportive of the heliport site, design and access, stating it would be beneficial to the hospital and community to have this heliport as a back-up for the helipad they currently operate on their site.

There are no additional public site or governmental uses for this heliport.

6. any other matters affecting the public health, safety, or general welfare.

AbbVie Aviation is building the heliport for use by AbbVie. AbbVie selected its helicopter, the Sikorsky S76-D helicopter, with safety as the main priority. Sikorsky S76-D is a medium-sized utility aircraft that counts more than 130 corporate customers operating the aircraft to meet critical business needs. Sikorsky was primarily designed for military use, featuring multiple back-up systems, two independent hydraulic systems, composite built airframe, twin turboshaft engines, emergency flotation devices and a tail rotor centering spring. The aircraft has been on the market since 1977 and boasts an extensive and complete training syllabus.

Demonstrating its longstanding commitment to safety, the AbbVie Flight Safety Manual requires two pilots be on board flying the aircraft, though the Sikorsky has flight capabilities with just one pilot flying. AbbVie hired two pilots and one mechanic (with additional current AbbVie pilots being trained to operate the aircraft). The pilots will possess an Airline Transport Certificate – the highest rating available – with Instrument rating. Both pilots have a minimum of 5,500 flight hours in helicopters. All pilots and maintenance staff will complete annual training with FlightSafety International, which provides world-class training and simulation for commercial aviation operations. AbbVie Aviation also provides additional simulator training, with several pilots obtaining the Master Aviator certification from FlightSafety International. The helicopter and equipment will receive thorough pre- and post-flight inspections and always be maintained according to the manufacturer's specifications.

Further, AbbVie Aviation has received both International Standard for Business Aviation Operations (ISBAO) and Business Aviation Safety Consortium (BASC) accreditations, which are the gold standard in the aviation industry - demonstrating our commitment to ensuring best practices and safety at the highest levels. All of AbbVie Aviation management achieved the highest level of National Business Aviation Association (NBAA) management certification. All AbbVie Aviation pilots train to exceed FAA requirements and train in the highest-level simulators every six months, as opposed to once annually, as required by the FAA.

Finally, to ensure safe take-off and landing and passenger safety of the heliport year-round, the heliport will have a heated surface to prevent ice buildup. A full fire suppression system, even though not required by the FAA, will be onsite as added safety measure. Furthermore, the Libertyville Fire Station No. 3 is located directly next to the heliport.

EXHIBITS

- A. Deed of Land
- B. Lake County Emergency Management Agency Memorandum of Understanding
- C. Lake County Sheriff Office Letter of Support
- D. Libertyville Fire Department Letter of Support
- E. North Chicago Letter of Support
- F. North Chicago Letter to Support Atkinson Road Permits
- G. Northwestern Medicine Lake Forest Hospital Letter of Support
- H. Lake County Partners Letter of Support
- I. Noise and air quality assessment report
- J. Bollinger Environmental, Inc. wetlands report
- K. Illinois Department of Transportation Certificate of Approval (AER 2060 Form)
- L. Illinois Department of Transportation Letter indicating no site issues and FAA airspace approval form 7480-1 submitted
- M. Topography map (small version; full-scale map included in site plan submission)
- N. McHenry-Lake County Soil and Water Conservation District letter
- O. EcoCAT endangered species report
- P. Illinois Department of Natural Resources letter regarding EcoCAT results
- Q. Ground Lease Agreement between AbbVie Aviation LLC and Atkinson North Chicago LLC
- R. Letter regarding sewer access from Abbott
- S. Letter regarding sewer access from Green Oaks

COURT REPORTER AGREEMENT

CHECK ONE OF THE FOLLOWING:

☒ I authorize the County to act on my behalf to retain a Certified Shorthand Reporter to transcribe the public hearing and provide a transcript to the Zoning Board of Appeals. I further agree to pay the Reporter reasonable fees for his/her services. If I do not pay the Reporter and the County is invoiced and pays the Reporter, I agree to reimburse the County. If the County sues to obtain reimbursement, I agree to pay the County its reasonable attorney's fees in bringing suit and obtaining a judgment.

☐ I will furnish a Certified Shorthand Reporter to transcribe the public hearing and provide a transcript to the Zoning Board of Appeals. I realize that the failure to do so may result in the continuation of the public hearing in which case I agree to reimburse the County for all additional expenses caused by such continuation.



THIS SIGNED AGREEMENT MUST ACCOMPANY YOUR APPLICATION

Natural Resource Information Report Application

McHenry-Lake County Soil and Water Conservation District

1648 S. Eastwood Dr., Woodstock, IL 60098 Voice: (815) 338-0099 Fax: (815) 338-7731

For office use only

File Number: _____ - _____ - _____ Date Received: _____ 20

Fee: _____ (Please make check payable to McHenry-Lake County SWCD.)

The McHenry-Lake County SWCD has thirty (30) days to complete this report after receipt of **ALL** the following items and after presentation to SWCD Board of Directors at their regularly scheduled meeting: Board meetings are scheduled for the first Tuesday of each month at the SWCD office.

Application Check List

Plat of Survey: ☐

Petition: ☒

Fee: ☒

Tentative plat: ☒

Intensive Soil Survey: ☐

Tile Investigation: ☐

Certified Wetland Determination/Delineation: ☒

Processing of the NRI report will not begin until **all** of the required items have been received by the MLCSWCD (office unless otherwise indicated by SWCD Staff)

Fee: Full report: \$400.00 for 1-3 acres and \$25.00 for each additional acre or part thereof.

Letter: \$100.00 SWCD will determine when letter or full report format will be necessary.

Petitioner's Name: _____ Phone: _____

Address: _____

Contact Person: _____ Phone: _____

Address: (SEE ABOVE)

Parcel Index Number(s): (1) 11 - 13 - 400 - 017 (2) _____ - _____ - _____ - _____

(3) _____ - _____ - _____ - _____

Aggregate parcel size ¹⁰ _____ (acres)

Current Zoning: Light Industrial

Requested Zoning: Light Industrial

Description of Zoning Request: CUP for Helipad

Proposed Improvements:

- ☐ Dwellings on Slabs
- ☐ Dwellings with Basements
- ☒ Commercial Buildings
- ☐ Park/Playground Areas
- ☐ Conservation Easements

- ☐ Common Open Space
- ☐ Sewers
- ☐ Individual Wells
- ☐ Community Water
- ☐ Septic Systems

- ☐ Drainage Ditches/Swales
- ☐ Wet Retention Basin
- ☐ Storm Sewers
- ☐ Dry Detention Basin
- ☐ Other _____

Unit of Government Responsible: ☐ County of McHenry
☐ City/Town of _____

☒ County of Lake

Is the parcel within 1 mile of a Village or City Boundary? ☒ Yes ☐ No

If yes, which (City/Town/Village)? City of North Chicago

It is understood that filing this application allows a district representative the right to conduct an onsite investigation of the parcel(s) described above. Furthermore, this report becomes subject to the Freedom of Information Act after presentation to the District Board of directors at their regularly scheduled meeting.

Contact person or Petitioner's signature: _____ Date: 10 / 25 / 20 19

Prepared by and after recording
return to:



Mail tax bills to:



Image# 059569210004 Type: DW
Recorded: 07/29/2020 at 11:32:35 AM
Receipt#: 2020-00048620
Page 1 of 4
Fees: \$72.00
IL Rental Housing Fund: \$9.00
Lake County IL Recorder
Mary Ellen Vanderventer Recorder
File **7678212**

This space reserved for Recorder's use only.

SPECIAL WARRANTY DEED

THIS INDENTURE is made on the 27th day of July, 2020, by and between ABBOTT LABORATORIES, an Illinois corporation, having an address at 200 Abbott Park Road, Dept-315 / Building AP52-S, Abbott Park, Illinois 60064 ("Grantor"), and ATKINSON NORTH CHICAGO LLC, an Illinois limited liability company, having an address at 200 Abbott Park Road, Dept-315 / Building AP52-S, Abbott Park, Illinois 60064 ("Grantee").

WITNESSETH:

THAT Grantor, in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, to it paid by Grantee, the receipt of which is hereby acknowledged, does by these presents, GRANTS, BARGAINS, SELLS, CONVEYS AND WARRANTS unto the said Grantee, its respective successors and assigns, all of its right, title and interest in and to the lots, tracts or parcels of land lying, being and situated in Lake County, State of Illinois, described on Exhibit A attached hereto and incorporated herein by reference (the "Property").

TO HAVE AND TO HOLD the premises aforesaid with all and singular, the rights, privileges, appurtenances and immunities thereto belonging or in any wise appertaining unto the said Grantee and unto Grantee's heirs, successors and assigns forever, the said Grantor hereby covenanting that the Property is free and clear from any encumbrance done or suffered by Grantor; and that Grantor will warrant and defend the title to the Property unto the said Grantee and unto Grantee's heirs, successors and assigns forever, against the lawful claims and demands of all persons claiming by, under or through Grantor, subject to the Permitted Exceptions.

[Signature Page Follows]

MS
4

IN WITNESS WHEREOF, the said Grantor has executed this Special Warranty Deed as of the day and year above first written.

GRANTOR:

ABBOTT LABORATORIES,
an Illinois corporation

By: 
Name: Coert R. Davis
Title: Senior Director of Real Estate

EXEMPT UNDER 35 ILCS 200/31-45, PARAGRAPH J, SECTION 4, REAL ESTATE TRANSFER ACT *July 29, 2020* 

STATE OF IL)
COUNTY OF LAKE) SS.

I, the undersigned, a notary public in and for said county in the state aforesaid, do hereby certify that Coert R. Davis, Senior Director of Real Estate of Abbott Laboratories, an Illinois corporation, personally known to me to be the same person whose name is subscribed to the foregoing instrument appeared before me this day in person, and acknowledged that he signed, sealed and delivered the said instrument as his free and voluntary act, for the uses and purposes therein set forth including the release and waiver of the right of homestead.


Notary Public

My Commission Expires: 5/16/2021 

EXHIBIT A
LEGAL DESCRIPTION OF THE PROPERTY

THAT PART OF THE SOUTH HALF OF SECTION 13, TOWNSHIP 44 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER OF SAID SECTION 13 THENCE SOUTH 00 DEGREES 11 MINUTES 20 SECONDS WEST, 25.00 FEET ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 13, TO THE SOUTH RIGHT OF WAY LINE OF ATKINSON AVENUE, SAID LINE BEING 25.00 FEET SOUTH AND PARALLEL WITH THE NORTH LINE OF SAID SOUTHEAST QUARTER; THENCE SOUTH 89 DEGREES 28 MINUTES 34 SECONDS EAST, 323.18 FEET, ALONG SAID PARALLEL LINE TO THE WEST LINE OF THE LIBERTYVILLE FIRE STATION PER DEED DOCUMENT 4009318 RECORDED AUGUST 20, 1997; THENCE SOUTH 00 DEGREES 30 MINUTES 29 SECONDS WEST, 350.00 FEET ALONG SAID WEST LINE TO THE SOUTH LINE OF SAID LIBERTYVILLE FIRE STATION; THENCE SOUTH 89 DEGREES 28 MINUTES 11 SECONDS EAST, 140.00 FEET ALONG SAID SOUTH LINE; THENCE SOUTH 07 DEGREES 10 MINUTES 13 SECONDS EAST, 518.44 FEET; THENCE NORTH 89 DEGREES 28 MINUTES 34 SECONDS WEST, 527.63 FEET, ALONG A LINE PARALLEL WITH THE NORTH LINE OF SAID SOUTHEAST QUARTER TO THE WEST LINE OF SAID SOUTHEAST QUARTER; THENCE NORTH 00 DEGREES 11 MINUTES 20 SECONDS EAST, 538.80 FEET, ALONG SAID WEST LINE; THENCE NORTH 89 DEGREES 30 MINUTES 03 SECONDS WEST, 215.00 FEET ALONG A LINE PARALLEL WITH THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 13; THENCE NORTH 00 DEGREES 11 MINUTES 20 SECONDS EAST, 320.00 FEET ALONG A LINE PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER TO THE SOUTH RIGHT OF WAY LINE OF SAID ATKINSON AVENUE, SAID LINE BEING 30.00 FEET SOUTH AND PARALLEL WITH THE NORTH LINE OF SAID SOUTHWEST QUARTER; THENCE SOUTH 89 DEGREES 30 MINUTES 03 SECONDS EAST, 215.00 FEET ALONG SAID PARALLEL LINE TO THE EAST LINE OF SAID SOUTHWEST QUARTER; THENCE NORTH 00 DEGREES 11 MINUTES 20 SECONDS EAST, 5.00 FEET, ALONG SAID EAST LINE TO THE POINT OF BEGINNING, ALL IN LAKE COUNTY, ILLINOIS.

SAID PARCEL CONTAINS 43,560 SQUARE FEET OR 10.00 ACRES, MORE OR LESS

Part of PIN 11-13-400-017, 11-13-300-004

Commonly known as 13397 West Atkinson Road, Libertyville, Illinois 60067



Plat Act Affidavit

18 N County St – 6th Floor
Waukegan, IL 60085-4358
Phone: (847) 377-2575
FAX: (847) 984-5860

STATE OF ILLINOIS }
COUNTY OF LAKE } SS

I, (name) [REDACTED], being duly sworn on oath, state that I reside at [REDACTED] and that the attached deed is not in violation of the Plat Act, Ch. 765 ILCS 205/1.1(b), as the provisions of this Act do not apply and no plat is required due to the following allowed exception (Circle the number applicable to the attached deed):

1. The division or subdivision of land into parcels or tracts of 5 acres or more in size which does not involve any new streets or easements of access;
2. The division of lots or blocks of less than 1 acre in any recorded subdivision which does not involve any new streets or easements of access;
3. The sale or exchange of parcels of land between owners of adjoining and contiguous land;
4. The conveyance of parcels of land or interests therein for use as a right of way for railroads or other public utility facilities and other pipe lines which does not involve any new streets or easements of access;
5. The conveyance of land owned by a railroad or other public utility which does not involve any new streets or easements of access;
6. The conveyance of land for highway or other public purposes or grants or conveyances relating to the dedication of land for public use or instruments relating to the vacation of land impressed with a public use;
7. Conveyances made to correct descriptions in prior conveyances;
8. The sale or exchange of parcels or tracts of land following the division into no more than 2 parts of a particular parcel or tract of land existing on July 17, 1959, and not involving any new streets or easements of access;
9. The sale of a single lot of less than 5 acres from a larger tract when a survey is made by an Illinois Registered Land Surveyor; provided, that this exemption shall not apply to the sale of any subsequent lots from the same larger tract of land, as determined by the dimensions and configuration of the larger tract on October 1, 1973, and provided also that this exemption does not invalidate any local requirements applicable to the subdivision of land;
- X 10. The conveyance of land does not involve any land division and is described in the same manner as title was taken by grantor(s).

AFFIANT further states that this affidavit is made for the purpose of inducing the RECORDER OF LAKE COUNTY, ILLINOIS to accept the attached deed for recording. (This affidavit is not applicable to Facsimile Assignment of Beneficial Interest.)

ABBOTT LABORATORIES, an Illinois corporation

[REDACTED]

(Signature)

By: [REDACTED]
Name: [REDACTED]

Revised: September 7, 2010 11:40 AM

SUBSCRIBED and SWORN to before me this 27th day
of July 2020

Notary: [REDACTED]

MEMORANDUM OF UNDERSTANDING

THIS **MEMORANDUM OF UNDERSTANDING** (this “**Agreement**”) is made as of _____, 2019 by and between **ABBVIE AVIATION LLC**, an Illinois limited liability company, with an address of 1 N. Waukegan Road, North Chicago, Illinois 60064 (“**AbbVie Aviation**”), and **LAKE COUNTY EMERGENCY MANAGEMENT AGENCY**, an Illinois _____, with an address of 1303 N. Milwaukee Avenue, Libertyville, Illinois 60048 (“**LCEMA**”).

BACKGROUND

A. AbbVie Aviation plans to build and operate a Helistop located in unincorporated Lake County, Illinois to be used by AbbVie Aviation for business purposes.

B. LCEMA supports first responder agencies during a disaster by locating and coordinating resources for responders, which could include helicopter operations.

C. Subject to the terms and conditions set forth in this Agreement, AbbVie Aviation desires to permit LCEMA to use the Helistop in the event of an emergency for the purpose of coordinating first responder helicopter operations. AbbVie Aviation will work with LCEMA to determine the first responders that may be using the Helistop and to provide training to such first responders regarding the use of the Helistop prior to LCEMA’s first use of the Helistop.

D. AbbVie Aviation has determined that cooperating with LCEMA is beneficial to the community, is consistent with AbbVie Aviation’s and its parent corporation’s corporate policies, and facilitates its involvement with the community.

Agreement

In consideration of the mutual covenants set forth herein and other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. Use of Helistop; Fees. Subject to the terms and conditions set forth in this Agreement, AbbVie Aviation hereby agrees to cooperate with LCEMA to facilitate use of the Helistop for purposes of first responder helicopter operations. LCEMA is not obligated to pay AbbVie Aviation any fee for use of the Helistop under this Agreement.

2. Term; Termination.

a. This Agreement shall be effective for one year from the date set forth above unless earlier terminated in accordance with this Agreement, and shall automatically renew for successive additional one-year periods unless either party provides written notice of non-renewal at least 90 days in advance of expiration of the then-current period.

b. Either party may terminate this Agreement without cause upon sixty (60) days’ written notice to the other party.

c. Upon the breach of any representation, warranty, or covenant contained in this Agreement by either party, the non-breaching party may immediately terminate this Agreement by written notice to the other party.

d. AbbVie Aviation may terminate this Agreement without notice, if it no longer operates the Helistop.

3. Flight Communications; Coordination; Visual Approach. LCEMA facilitated flights making use of the Helistop shall be coordinated with AbbVie Flight Communications Center (“**AbbVie Flight**”). LCEMA shall provide AbbVie Flight with as much information as is available to coordinate flights of first responders to and from the Helistop. The parties acknowledge that at all times the helicopter pilots shall have authority to make flight decisions that protect the safety of the aircraft, passengers, and persons in the vicinity of the Helistop, including decisions regarding landing and approach.

4. Compliance. LCEMA will use reasonable efforts to help facilitate compliance with all specifications, procedures, policies, rules and directions regarding use of the Helistop provided by AbbVie Aviation during the term of this Agreement. Both parties will comply with all applicable laws, rules, regulations, orders, and other applicable legal requirements in connection with LCEMA’s use of the Helistop, including but not limited to the rules and regulations of the FAA, Illinois Department of Transportation, and Transportation Security Administration.

5. Conduct of Personnel. LCEMA will use reasonable efforts to help facilitate compliance with personnel visiting or accessing AbbVie Aviation’s premises and will (a) comply with AbbVie Aviation’s then-current internal policies, procedures, and rules applicable to AbbVie Aviation’s personnel at such premises and provided to LCEMA in writing, including, without limitation, any then-current policies, procedures and rules relating to environmental protection, health, safety, work and security; and (b) comply with all terms governing the access of any information or communication systems of AbbVie Aviation, including, without limitation, host and personal computers, internal or external information or communication networks (including voice mail, Internet/Intranet and e-mail systems), operating systems, database systems, or hardware and software directly or indirectly accessed from AbbVie Aviation’s systems.

6. Confidentiality. LCEMA agrees not to disclose to third parties any non-public or proprietary information regarding AbbVie Aviation or its business or its employees, including the terms of this Agreement, or use such information for itself for any purpose other than performing under this Agreement, without AbbVie Aviation’s prior written approval.

7. Governing Law. The terms and conditions of this Agreement shall be governed, construed, interpreted, and enforced in accordance with the domestic laws of the state of Illinois, excluding choice of law principles. No waiver by either party of any right or remedy under this Agreement, or delay in the exercise thereof, will constitute a waiver of any other right or remedy.

8. Notices. All notices, requests, claims, demands, and other communications hereunder shall be in writing and shall be delivered by personal delivery, by a recognized overnight courier service, by postage prepaid registered mail, return receipt requested, or by email with delivery confirmation by reply email to the parties at the following addresses or to such other address as a party may direct in writing.

If to AbbVie Aviation:

AbbVie Aviation LLC

[REDACTED] _____
[REDACTED]
Email: _____

If to LCEMA:

Lake County Emergency Management Agency

[REDACTED] _____
[REDACTED]
Email: _____

9. Assignment. LCEMA may not transfer or assign this Agreement or any rights under this Agreement without the prior written consent of AbbVie Aviation, which such consent may be withheld in AbbVie Aviation's sole discretion. AbbVie Aviation may assign this Agreement without prior written consent of LCEMA.

10. Amendments. This Agreement may be amended, modified or terminated (in whole or in part) from time to time only by a written document executed and acknowledged by AbbVie Aviation and LCEMA and shall not otherwise be amended, modified or terminated during the term hereof.

11. Relationship of the Parties. Nothing in this Agreement is intended to create an employer/employee relationship or a joint venture relationship between the parties.

12. Entire Agreement. This Agreement contains the entire understanding of the parties and the parties acknowledge that there have been no representations or understandings other than those expressly set forth in this Agreement.

13. Counterparts. This Agreement may be executed in one or more counterparts, each such counterpart being deemed an original and all such counterparts taken together constituting but one and the same instrument.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

ABBVIE AVIATION LLC

LAKE COUNTY EMERGENCY
MANAGEMENT AGENCY

By: _____

By: _____

Printed Name: _____

Printed Name: _____

Title: _____

Title: _____



JOHN D. IDLEBURG
SHERIFF

OFFICE OF THE SHERIFF

Lake County, Illinois

*25 S. Martin Luther King Jr. Ave.
Waukegan, Illinois 60085
Phone: (847) 377-4000
Fax: (847) 360-5796*

**EMERGENCY
DIAL 911**

DIVISIONS

**Adult Corrections
(847) 377-4150**

**Civil Process
(847) 377-4400**

**Communications
(847) 549-5200**

**Community Service
(847) 377-4211**

**Court Security
(847) 377-4911**

**Criminal
Investigations
(847) 377-4250**

**Emergency
Management
Agency
(847) 377-7100**

**Highway Patrol
(847) 377-7020**

**Judicial Sales
(847) 377-4401**

**Marine Unit
(847) 587-4471**

**Records
(847) 377-4200**

**Training
(847) 377-4350**

**Warrants
(847) 377-4300**

**Work Release
(847) 377-4450**

October 25, 2019

Christina Lee
Director
State Government Affairs
AbbVie

Dear Ms. Christina Lee:

This letter is in support of AbbVie's initiative to build and operate a helistop in unincorporated Lake County for business and law enforcement purposes that require first responder helicopter operations during a critical incident.

As Sheriff of Lake County, my statutory obligation is to ensure that Lake County is prepared for any significant disaster that may occur. Given the current national landscape where unforeseen and unpredictable incidents can happen anywhere having access and the ability to use AbbVie's Helistop will enable law enforcement to respond immediately should the need arise.

AbbVie's commitment to the Lake County community and to the needs of first responders is a prime example of a private-public partnership. This opportunity will increase emergency response and will be a crucial asset in Lake County.

I look forward to this project's progress and I commend AbbVie for their commitment to Lake County and their dedication to public safety.

Respectfully,


 John D. Idleburg
Sheriff



September 18, 2019

Ms. Christina Lee
Government Affairs
AbbVie

Ms. Lee;

Thank you for meeting and discussing the proposed helipad to be located behind Libertyville Fire Station 3, located at 13415 Atkinson Road. I certainly understand AbbVie's needs with respect to the helipad and have no objections to the proposal. I do not feel the Helipad will in anyway interfere with the operations of our Fire Station 3.

As an emergency response agency, I appreciate the consideration to allow the Libertyville Fire Department to use the helipad should an emergency warrant the need for a medical helicopter. I do not anticipate needing to use the helipad for medical helicopters very frequently. However, should the need occur, having a dedicated landing pad which is secured and safe is a huge benefit to our agency and the public.

I would be happy to assist AbbVie in the permit process as needed. Best of luck and congratulations on an exciting project.

Richard M. Caram
Fire Chief



CITY OF NORTH CHICAGO

Leon Rockingham, Jr.
MAYOR

October 7, 2019

Christina Lee



Dear Ms. Lee,

The City of North Chicago supports AbbVie's pursuit to build a heliport and strongly supports access of the heliport for use by emergency services.

AbbVie is an important partner to not only North Chicago, but all of Lake County and the region. Throughout the years since AbbVie's founding, the company built a strong relationship with the city and region to achieve similar goals. North Chicago and AbbVie partner together on several initiatives to improve safety, enhance education, foster opportunities and ensure our community thrives. We're proud the global biopharmaceutical company is headquartered in North Chicago.

Given the near proximity of North Chicago Fire Station #2, just a little over one mile from the proposed helipad site, we see the great benefit this helipad will bring to North Chicago and the entire county. Our emergency service personnel works closely with AbbVie on numerous issues impacting the community. We will also work with AbbVie to obtain necessary permits for Atkinson Road access.

If you need additional information or we can be of assistance in this process, please let us know.

Sincerely,



Fire Chief



**Department of Public Works
City of North Chicago
1850 Lewis Avenue
North Chicago, IL 60064
Edward Wilmes, Director**

January 6, 2020

Ms. Christina Lee



RE: Proposed Helipad

Dear Ms. Lee,

It pleases me to provide this letter of support for the Helipad being proposed for the Abbott Park complex site bordering Waukegan Road and Atkinson Road in the City of North Chicago, Lake County.

The location for the proposed Helipad would be very beneficial not only for AbbVie and Abbott Park personnel and visitors, but could also be of great benefit to area's First Responders when the critically injured require air transport.

AbbVie is an important partner not only to the City of North Chicago, but also to the greater Lake County region. Over the years, the City and Abbott/AbbVie have partnered on many projects that have been mutually beneficial in reaching our common goals. These projects have enhanced opportunities for the City to provide safe and sustainable infrastructure that supports AbbVie's corporate mission to build a world-class cutting-edge pharmaceutical research and production facility in North Chicago.

The proposed Helipad is yet another project in the long and unwavering history of AbbVie's commitment to build a world-class facility in North Chicago. This Helipad will also support the goals of the City, county and region to be the premier location for health sciences, and will without question, yield positive benefits for the region for decades to come. We are very much in support of this project as it will provide improved accessibility to AbbVie's Abbott Park complex.

Please know that I personally, as well as all others here, will assist as need may arise to ensure that the permitting process proceeds as expeditiously as possible so that construction may soon begin.



C: Mayor Leon Rockingham
Deb Waszak, Chief of Staff

Over 100 Years of Municipal Service
City of North Chicago

1850 Lewis Avenue, North Chicago, Illinois • 847-596-8600 • www.northchicago.org

October 15, 2019

Ms. Christina Lee



Dear Christina,

Thank you for your time meeting with me and Anne King, October 4, 2019; to inform us of your proposal to develop a helipad, near AbbVie. We appreciate the opportunity to share our perspectives with you.

Our assessment of having a second helipad available for emergency or backup use, within a few miles of Northwestern Medicine Lake Forest Hospital's (NM-LFH) Level II Trauma Center; would be beneficial to us, as well as, to the community. We appreciate AbbVie's willingness to make the helipad available to NM-LFH, once completed.

In closing, NM-LFH is supportive of your plans to develop the helipad, near AbbVie.

Thank you again for your outreach, Christina.

Regards,



October 1, 2019

Christina M. Lee



Dear Christina,

I am writing to express our support for the helipad project that is proposed for the site along Atkinson Road in Green Oaks.

Lake County has twelve Fortune 500 headquarters, the largest concentration outside of downtown Chicago. Add to that our many smaller companies, and corporate headquarters are arguably our largest industry. When you look at Life Sciences specifically, we have over 120 companies, including ten headquarters, with 33,000 employees and over \$85 billion in sales.

As local, national and even global competition for these headquarters heats-up, and companies consolidate, it is imperative that we ensure that Lake County has the assets in place to keep these important industry partners growing here in Lake County. Convenient access to efficient transportation, especially general aviation is critical. In competitor markets, many companies of this size, and especially AbbVie's peers in Life Sciences, have helicopters in their corporate fleets. The proposed helipad is right in line with that competitive requirement.

Beyond the corporate transportation needs, a helipad within proximity of two major hospitals and a fire department will provide an uncommon and important public safety benefit.

For all of these reasons we support this valuable initiative.

Sincerely,



President & CEO

ABBVIE AVIATION HELIPORT NOISE & AIR QUALITY REPORT

Prepared by: Mead & Hunt, Inc.

Addressing:

- Aircraft information
- Design criteria
- Operational assumptions
- Noise review
- Air quality review

October 30, 2019

Executive Summary

AbbVie proposes to construct a privately-owned, private use helipad in Lake County, east of Interstate 94 (I-94). The site is currently green space; the approach area into the site is open fields with no development between the site and I-94.

Aircraft Information

AbbVie plans to operate a Sikorsky S76-D helicopter from the site. This is a common helicopter used for corporate operations. The aircraft will not be stored onsite.

Design Standards

Even though it will be for private use, AbbVie has elected to use Federal Aviation Administration (FAA) approved design standards to guide the development of the overall site, helipad and the approach/departure paths to adhere to industry standards for heliport development.

Operations

The heliport is expected to be used for approximately 24 operations per week, with most days seeing two round-trip flights. An operation is defined as a takeoff or a landing from the helipad.

Consequently, a flight that arrives at the helipad, drops off passengers and then leaves accounts for two operations. The operations are expected to take place during the work week and be conducted during the general business day between 7:00 AM and 7:00 PM, with nighttime and weekend trips rarely occurring. Anticipated operations are expected to include the following:

	Average Daily Operations						
	Sun	Mon	Tue	Wed	Thru	Fri	Sat
Daily Total during Business Hours (7:00 AM – 7:00 PM)	0	4	4	4	6	6	0
Annual Daily Total	0	208	208	208	312	312	0
Annual Total	1,144						

Source: AbbVie, September 2019

Noise Review

The Aviation Environmental Design Tool (AEDT) version 2D is the FAA-approved software system that dynamically models aircraft performance in space and time to determine emissions and noise levels. AbbVie modeled the operation of the heliport, using the AEDT. The results indicate that the thresholds that FAA would normally deem to be impacts to the surrounding environment are not identified for this proposed development. The threshold that is associated with a noise impact is the 65DNL noise contour. This contour, based upon the modeling, would not extend off the proposed site that AbbVie will lease and maintain.

Air Review

Using the same AEDT model, AbbVie conducted an air analysis, and it was determined that the proposed development and use of the site would not adversely impact the air quality in the region. The levels of emissions generated are well below the established de minimis thresholds.

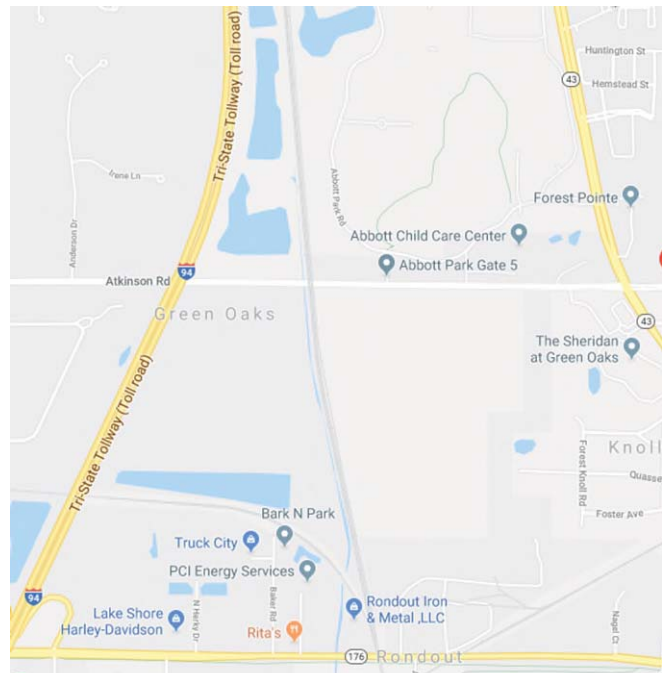
Introduction

This report summarizes operational, design, noise and air quality information related to the development of a private-use heliport near on the south side of Atkinson Road in Lake Bluff, IL, located east of Interstate I-94 (I-94) and west of Waukegan Road, near the Libertyville Fire Department station which is located at 11548 Atkinson Road, as shown in **Figure 1**. A specific address for the proposed development has not been established yet.

The following information is outlined in this document:

- Aircraft Information
- Design Criteria
- Operational Assumptions
- Noise Review
- Air Quality Review

Figure 1 – General Location of Project Site



Aircraft Information

The aircraft that is expected to operate at this facility is a helicopter – a Sikorsky S76-D. The aircraft has a 44'-0" rotor diameter and 52' length as illustrated in **Figure 2- Sikorsky S76D Helicopter**, **Figure 3-Front View of Sikorsky S76D Helicopter**, and **Figure 4 – Top View Sikorsky S76D Helicopter**. **Table 1** illustrates the various dimensions associated with the aircraft.

Figure 2 Sikorsky S76D Helicopter

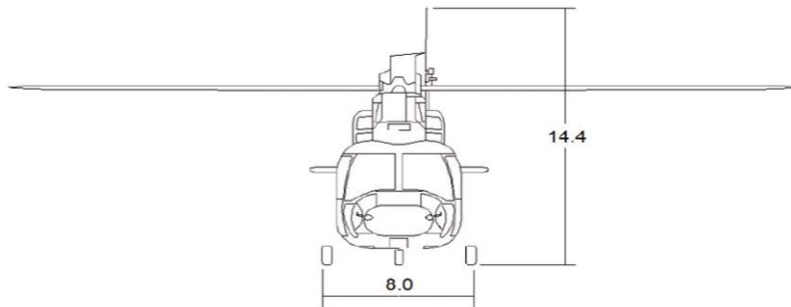


Source: Google Images

Table 1 – Sikorsky S76D Dimensional Characteristics

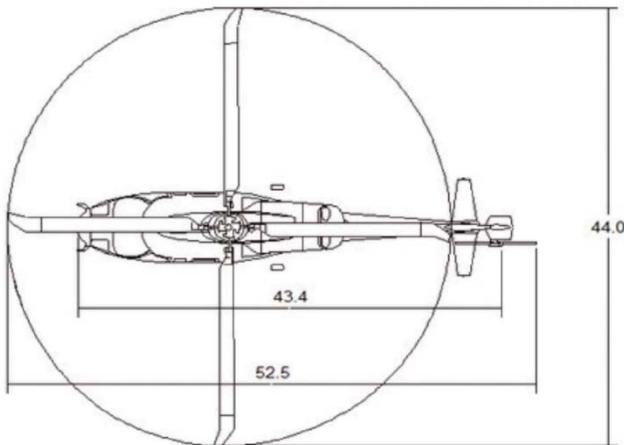
Characteristic	Dimension
Rotor Diameter	44.0 feet
Nose to Tail Length	43.4 feet
Tip of Top Rotor to Tip of Tail Rotor	52.5 feet
Above ground height to top of helicopter	14.4 feet
Wheelbase width	8.0 feet
Source: Sikorsky S76D Performance Manual	

Figure 3 Front View of Sikorsky S76-D Helicopter



Source: Sikorsky S76D
 Performance Manual

Figure 4 Top View of Sikorsky S76D Helicopter



Source: Sikorsky S76D Performance
 Manual

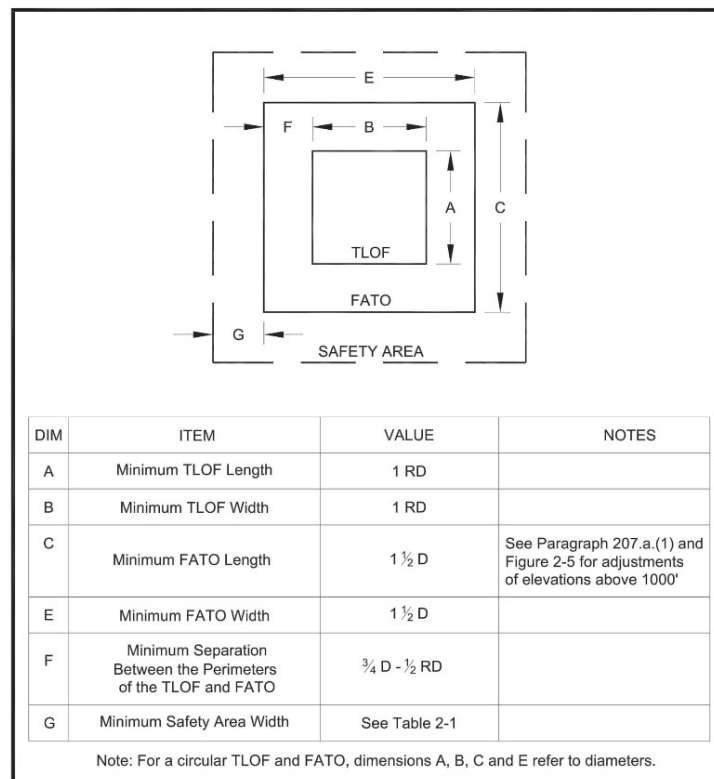
Design Criteria

Although the proposed heliport will be a privately-owned, private-use facility, the proposed layout of the heliport has been done with the use of the current Federal Aviation Administration (FAA) Design Standards in mind, along with coordination with the Illinois Department of Transportation (IDOT). Both these entities have review authority over the proposed development. FAA through the Form 7480-1 – *Notice for Construction, Alternation and Deactivation of Airports* and IDOT through the *Application for Airport / RLA Certificate of Approval form*.

The FAA design standards are obtained from FAA Advisory Circular (AC) 150/5390-2C – *Heliport Design*. The criteria for a general aviation heliport was used, assuming the heliport will be used in visual flight rule (VFR) conditions which means generally clear weather conditions. **Figure 5**, taken from the AC, illustrates the relationship of the various surfaces that make up the heliport area. AbbVie has chosen to design the facility to meet FAA standards to plan for a safe and efficient facility, using federally acknowledged guidelines. The helicopter dimensions necessary for these calculations are based upon the aircraft information shown in the next section. Acronyms used in this section include:

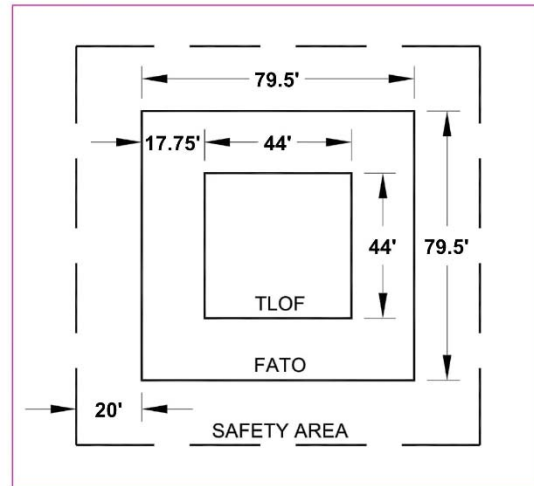
- RD - Rotor Diameter
- TLOF - Touchdown and liftoff area
- FATO - Final approach and takeoff area

Figure 5 – FAA AC 150/5390-2C – Heliport Design



Using the information in **Table 1**, and the criteria shown in **Figure 4**, the RD dimension is 44.0 feet (Dimension A, and B in Figure 4) and the 1 ½ D dimension is 79.5 feet (Dimension C and E in Figure 5), the minimum separation between the perimeters of the TLOF and FATO is 17.75 feet (Dimension F in Figure 4) and the Minimum safety area width (Dimension G in Figure 4) is 20 feet. This is reflected in **Figure 6 – Site Specific Dimensions**.

Figure 6 – Site Specific Dimensions.



Operational Assumptions

AbbVie plans to have the heliport licensed for private use, meaning that it would not be open for general public use, nor would it be published on any FAA or IDOT charts for public use. Provisions are being made to allow for emergency medical helicopter use, if necessary, due to the proximity of the heliport to the Libertyville Fire Station #3 facility located at 11548 Atkinson Road, just in front of the proposed development site.

Number of Operations

AbbVie estimates that the heliport will experience approximately 1,144 operations annually, as noted in **Table 2 – Estimated Operations**. These operating assumptions were determined by analyzing internal data of suppliers and vendors in a 400-mile radius, daily traffic patterns in the region and current use of fleet aviation. An operation is defined as a take-off or a landing from the heliport. Consequently, if the helicopter lands at the heliport, drops off passengers and then immediately leaves, that is reported at two operations – one landing and one take-off.

The heliport is expected to experience operations during the generally accepted business hours of approximately 7:00 AM – 7:00 PM. The hours of operation shown below in **Table 2** coincide with FAA standards of measurement that address operations that take place between 10:00 PM and 7:00 AM as being “night-time” operations which are treated differently when assessing noise. As noted in Table 2, weekend operations are not planned and there are no operations planned for night operation. This is

important because night-time operations are assessed a penalty in the noise analysis to account for their greater impact on local land uses.

Table 2 – Estimated Operations

Hours of Operation	Daily Operations						
	Sun	Mon	Tue	Wed	Thr	Fri	Sat
Business Hours 7:00 AM – 7:00 PM	0	4	4	4	6	6	0
10:00 PM – 7:00 AM (nighttime)	0	0	0	0	0	0	0
Daily Total	0	4	4	4	6	6	0
Annual Daily Total	0	208	208	208	312	312	0
Annual Total	1,144						

Source: AbbVie, September 2019

Flight Path of Operations

To minimize overflights over residential areas, the AbbVie Flight Department expects to have most of their flights approach and depart the heliport to/from the west. It is anticipated that most operations will follow the I-94 corridor to reach the site and then land from the northwest or southwest approach. If significant winds are present or based on pilot judgement, the approach may change. IDOT has requested that a flight approach for each of these three scenarios be illustrated, although IDOT acknowledges that AbbVie expects to make minimal use of the east/ west approach. The primary entry and exit points are expected to be the northwest and southwest approaches. The figures shown on the following pages illustrate these three approach areas. As shown in **Figures 7 – East/West Approach, Figure 8 – Northwest Approach,** and **Figure 9 – Southwest Approach,** each of these approach/departure paths will fly over generally undeveloped areas.

Figure 7 - East/West Approach

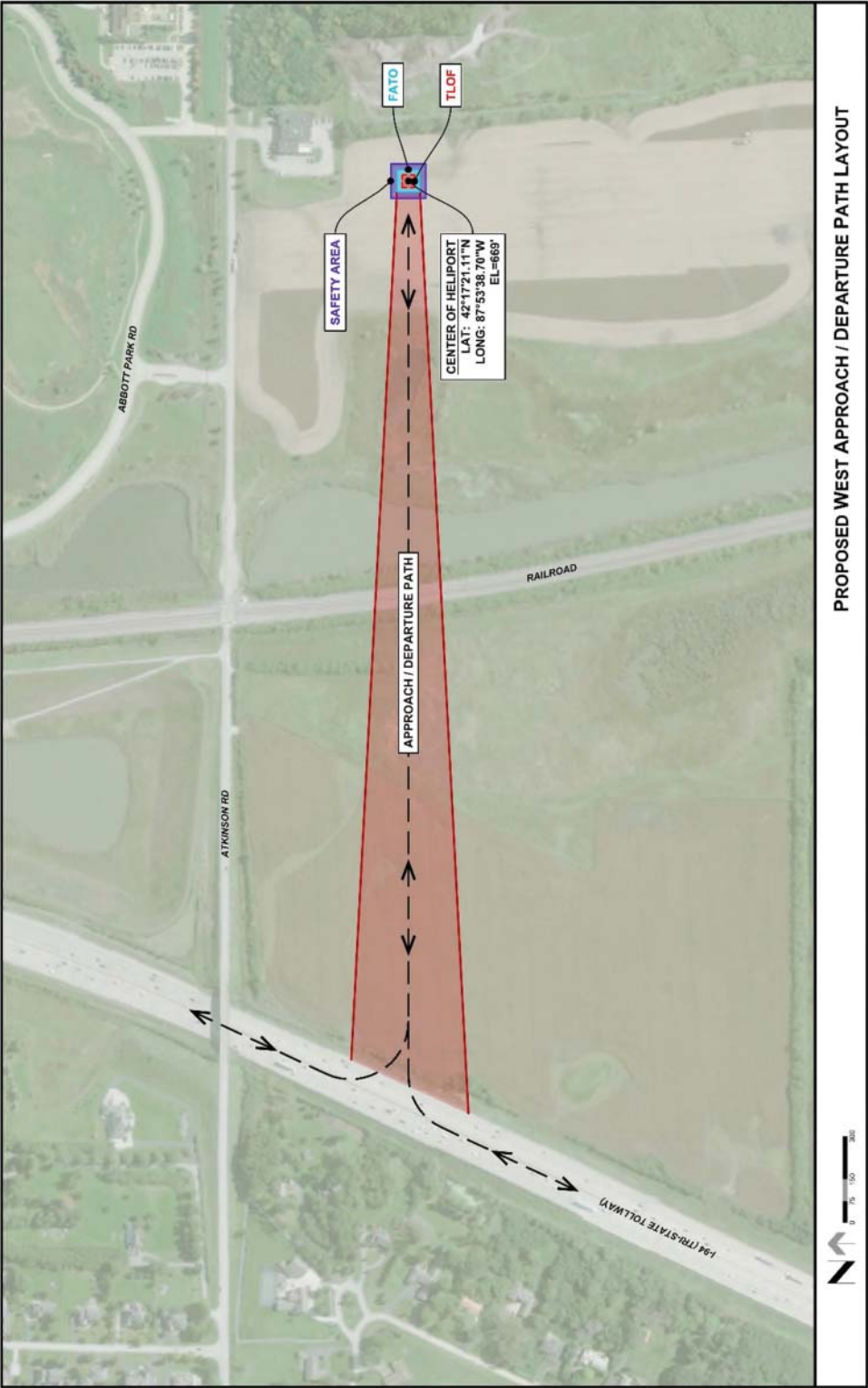


Figure 8 – Northwest Approach

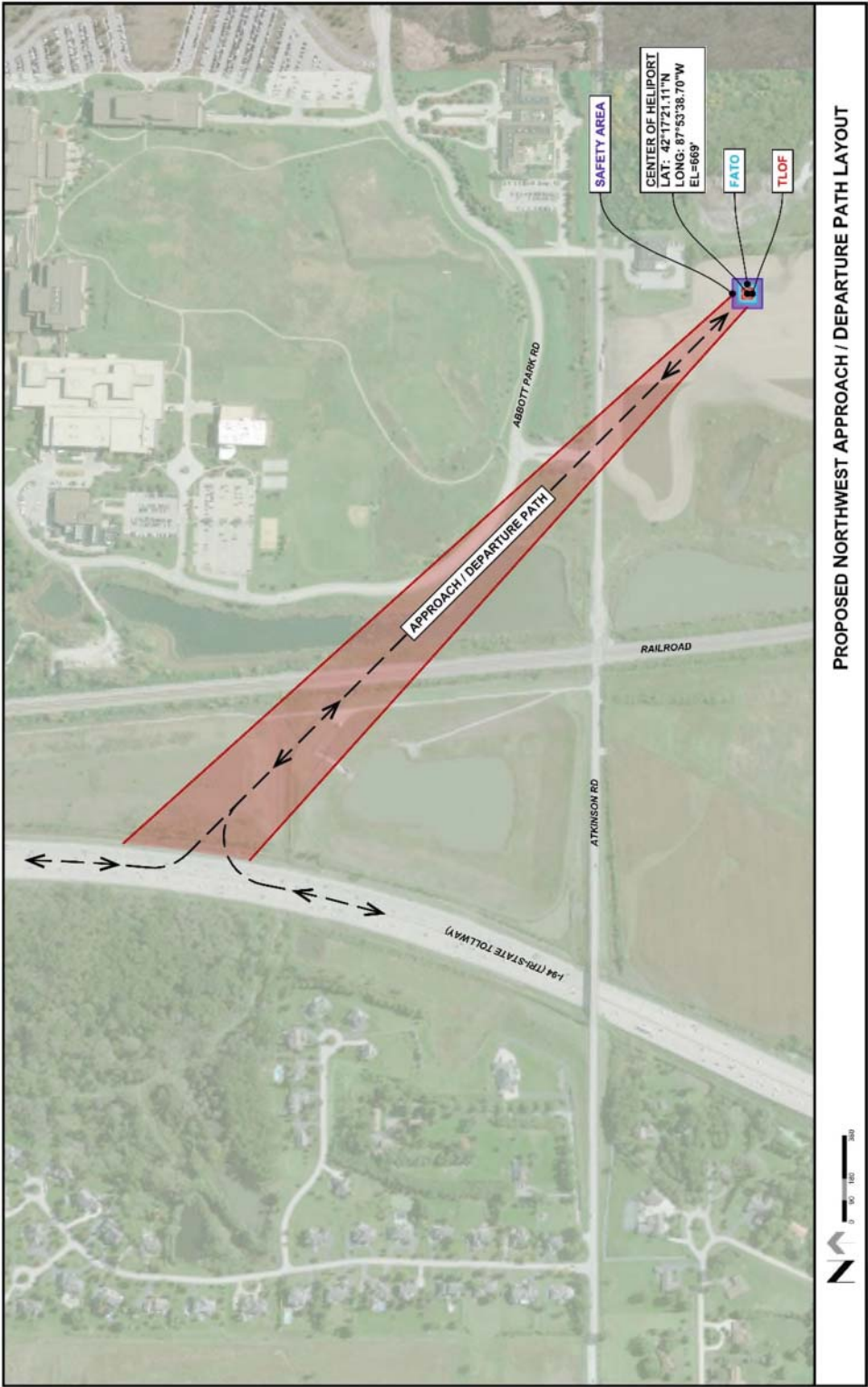
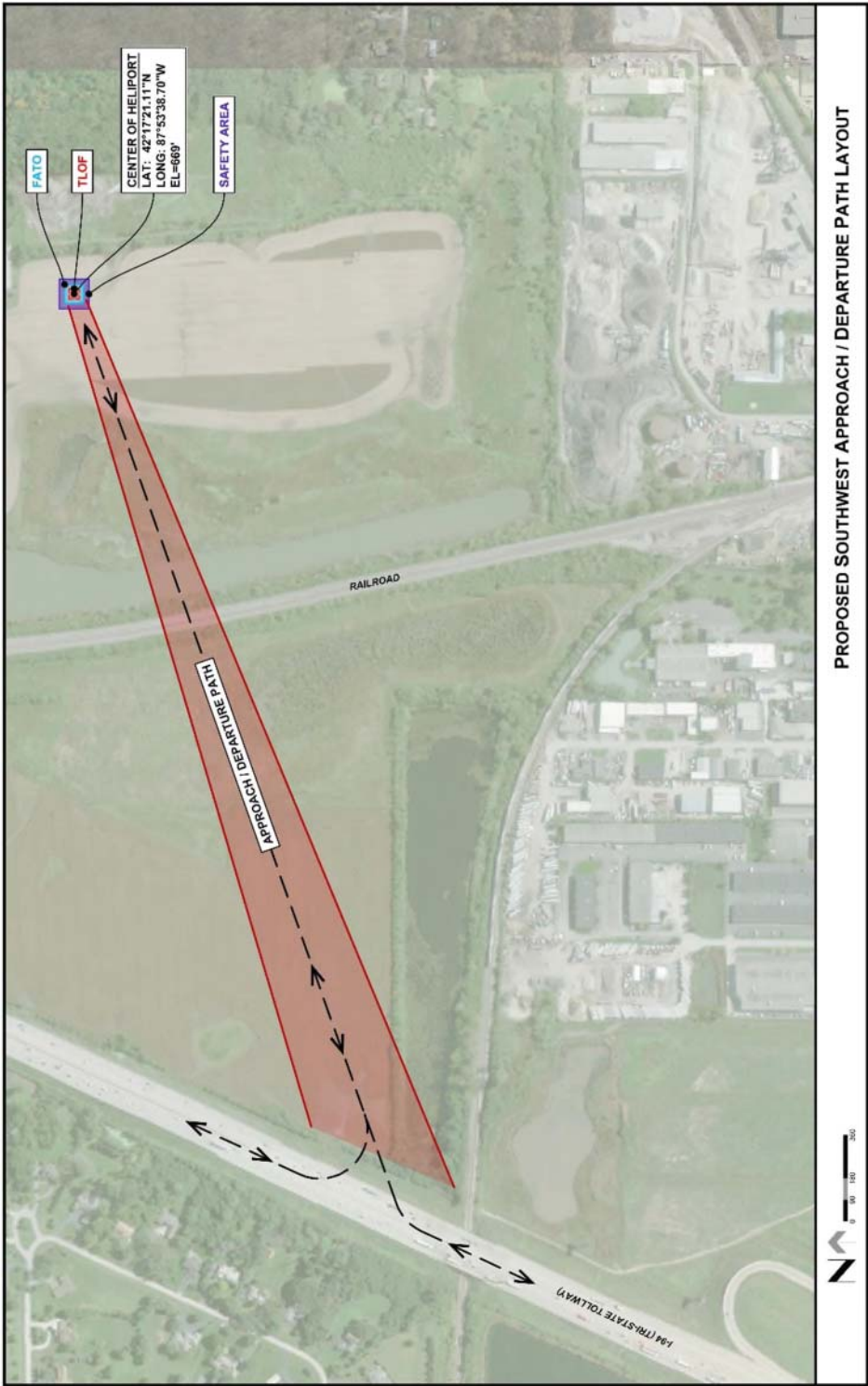


Figure 9 – Southwest Approach

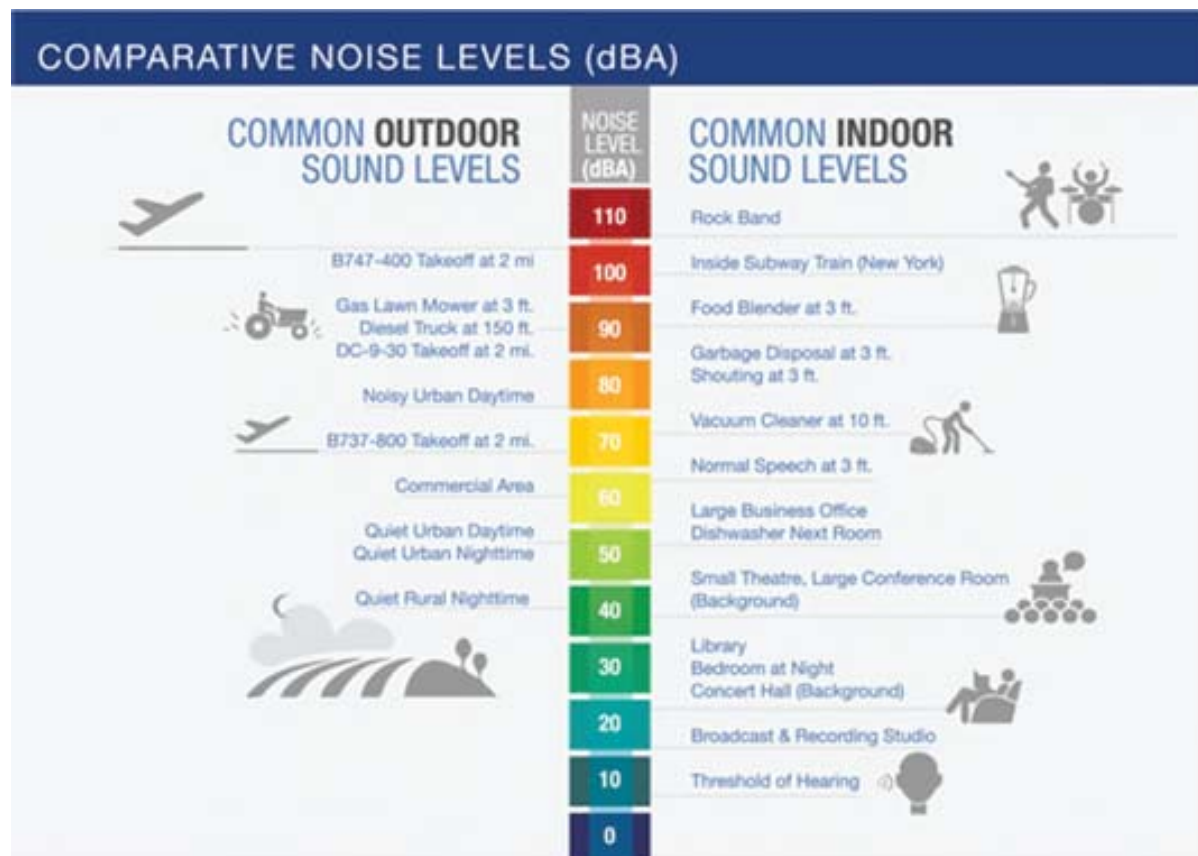


Noise Review

As taken from the FAA Website (faa.gov) Community Response to Noise Page:

Noise comes from many sources, not just aviation. As a result, the level of noise someone experiences day to day can depend on many different factors. Noise in small suburban areas compared with busy urban centers may be very different and result in different types of challenges when looking to address aircraft noise.

The decibel (db) is the unit used to measure the intensity of a sound. The human ear hears sound pressures over a wide range. Decibels, which are measured on a logarithmic scale, correspond to the way our ears interpret sound pressures.



The human ear also responds to different pitches or frequencies of sound differently. We are less able to hear low frequencies like the rumble of thunder but hear high frequencies like the cry of a baby more strongly. To account for differences in how people respond to sound, the "A-weighted" scale (dBA) is used. This scale most closely approximates the relative loudness of sounds in air as perceived by the human ear and provides a more useful way to evaluate the effect of noise exposure on humans by focusing on those parts of the frequency spectrum where we hear most.

The A weighted noise level has been adopted by the FAA as the accepted measure to consider aircraft noise.

For noise sources in motion, like aircraft, noise levels can change over time. For example, the sound level of a plane increases as it approaches, and then as it flies away the sound level decreases. It can be useful to measure the maximum sound level, abbreviated as L_{max} , of a particular noise "event." While L_{max} notes the moment of maximum sound level, it does not account for the duration of a sound event. The maximum sound level of a gun firing a bullet is high but very brief; a freight train can have the same maximum sound level, if you are very close to it, but the sound has a long duration.

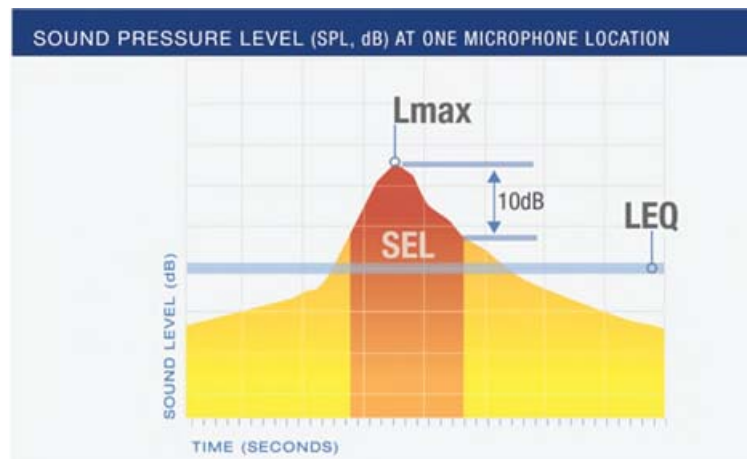
To account for the differences in duration and loudness of sounds, different metrics are used. These metrics are used to compare individual noise events as well as many events that take place over an extended period of time.

Noise Metrics

The Sound Exposure Level (SEL) metric represents all the acoustic energy (a.k.a. sound pressure) of an individual noise event as if that event had occurred within a one-second time period. SEL captures both the level (magnitude) and the duration of a sound event in a single numerical quantity, by "squeezing" all the noise energy from an event into one second. This provides a uniform way to make comparisons among noise events of various durations.

The equivalent sound level (LEQ) measures the average acoustic energy over a period of time to take

account of the cumulative effect of multiple noise events. This could, for example, provide a measure of the aggregate sound at a location that has airplane flyovers throughout the day. LEQ is defined as the level of continuous sound over a given time period that would deliver the same amount of energy as the actual, varying sound exposure.



Finally, the day-night average sound level (DNL) noise metric is used to reflect a person's cumulative exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year on the basis of annual aircraft operations. The DNL noise metric

provides a mechanism to describe the effects of environmental noise in a simple and uniform way. **DNL is the standard noise metric used for all FAA studies of aviation noise exposure in airport communities.** The DNL and the closely related CNEL metric used in California are both similar to LEQ, but they differ in how noise is treated during the evening and nighttime.

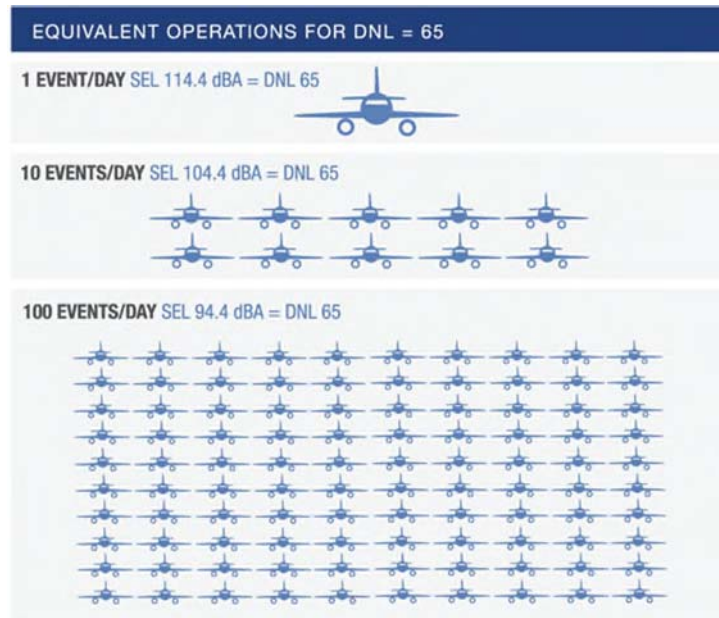
(Bold text above has added for emphasis to demonstrate why the DNL has been modeled)



Because DNL takes into account both the amount of noise from each aircraft operation as well as the total number of operations flying throughout the day, there are many ways in which aircraft noise can add up to a specific DNL. Small numbers of relatively loud operations can result in the same DNL as large numbers of relatively quiet operations.

There are many different factors that determine how much aircraft noise is experienced on the ground:

- What model aircraft and what type of engines are being used for each flight?
- Are the aircraft taking off or landing?
- What is the flight path of the flights going overhead?
- How quickly does each plane ascend and descend?
- Is the aircraft operating at full power or partial power?



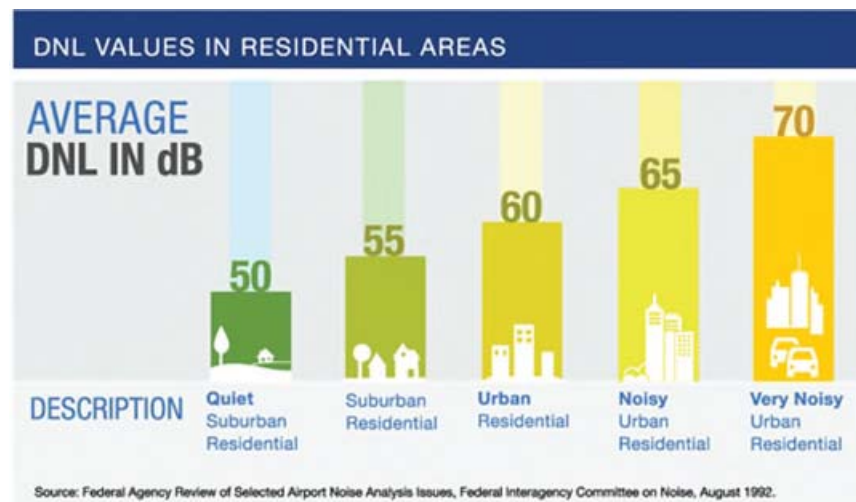
Noise experienced on the ground also depends on flight schedules, which can vary depending on the time of day, season of the year, or other operational factors. Weather also plays a large role,

since sound attenuates (dissipates) differently depending on weather conditions (wind speed and direction, temperature, etc.).

Determining how to capture the effects of all these considerations can become extremely complex very quickly. A house one-half mile north of an airport may experience very different aircraft noise exposure over a day, week, and year than a school one mile south of that airport.

To describe the effects of environmental noise in a simple, uniform and appropriate way, the day-night average sound level (DNL) noise metric is used. DNL is a metric that reflects a person's cumulative exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year on the basis of annual aircraft operations. All the factors described above, plus many others, are calculated for the entire area surrounding an airport. An entire year's worth of flights from the airport are examined using sophisticated aircraft noise modeling programs. Every aircraft's weight, trajectory, flight path, and many other characteristics are input into the program. To

account for a higher sensitivity to noise exposure at night (occurring between 10 p.m. and 7 a.m.), DNL calculations add a ten times weighting for each nighttime flight, equivalent to each nighttime event being measured as if ten daytime events had occurred: because of the logarithmic scale, this is equivalent to each nighttime event receiving a 10 dBA "penalty."



FAA has adopted DNL 65 dBA as the threshold of significant noise exposure, below which residential land uses are compatible, but often also shows contours for DNL 65, 70 and 75 dBA noise levels on maps for reference.

Noise Modeling

The FAA Office of Environment and Energy (FAA-AEE) recognizes that the environmental consequences stemming from aircraft operations – primarily noise and emissions – are highly interdependent and occur simultaneously throughout all phases of flight. The Aviation Environmental Design Tool (AEDT) version 2D is the FAA-approved software system that dynamically models aircraft performance in space and time to determine emissions and noise estimates.

The output from the AEDT results in a 24-hour average noise level using decibels as the basis of measurement. The decibel (dB) is the acoustic measurement of sound where 0dB is the threshold of normal hearing and 130 dB is the threshold of pain. Based on the operations outlined in Table 2, noise contours were developed to identify expected future aircraft noise impact areas, with the proposed project. AEDT Version 2D was used to model noise exposure contours for this analysis.

AEDT is designed to estimate the long-term effects of noise using average annual input conditions. The model uses the Federal Aviation Regulations (FAR) Part 150 (14 C.F.R. Part 150) yearly day-night average sound level (DNL) metric, which is measured in decibels (dB). DNL is a cumulative noise metric that represents the average daily noise level, accounting for the added intrusiveness of noise at night compared to during the day. A nighttime penalty (equivalent to increasing decibel levels by ten) for increased annoyance is added to flights occurring between 10:00 PM and 7:00 AM. Since no operations are expected to take place during night-time hours, penalties have not been included in the model.

Noise and land use guidelines are associated with the development of the DNL measurements. Such guidelines include the compatibility of certain aviation noise levels with residential areas, schools, and commercial development. Acceptable DNL levels for residential areas and schools are 65DNL, and 70DNL if sound insulated. In commercially developed areas, 75 DNL is acceptable, per the FAA. Noise contours, developed using the AEDT, are used to determine appropriate land use planning strategies such as overlay zoning, based on compatibility of the land uses at a particular noise level and the DNL levels at the areas surrounding the airport.

AEDT requires a variety of user-supplied data, including physical airfield facilities, aircraft activity, fleet mix, day-night split, runway use, and flight tracks. Based upon the input data, AEDT generates the noise contours by plotting points of the noise level events that represent the average-annual day. The points are then connected to graphically represent the noise contours that the aircraft generate. The FAA, Environmental Protection Agency (EPA), and the United States Department of Housing and Urban Development (HUD) established the 65DNL as the threshold indicating significant cumulative noise impacts.

AbbVie Site Contours

Figure 10 illustrates the 65DNL noise contour for the operations that are expected over a calendar year, assuming all 1,144 operations take place on the east/west alignment. Additionally, several other DNL contours are shown to illustrate limits where greater noise impacts are expected (75DNL and 70 DNL) and those that are considered of less significance (60DNL and 55DNL).

Figure 11 illustrates the same noise contours on a northwest approach/departure path and **Figure 12** shows the noise contours on a southwest approach/departure path. The graphics illustrate the full 1,144 operations on each path. No provisions were made to pro-rate use between the three optional paths. This results in the noise contours showing the worst-case scenario in each instance, where all 1,144 estimated operations would be placed on the individual approaches. It is assumed that the western approach (Figure 10) would be least used and the other two approach would see the majority of the activity. Each of these contours would actually be slightly reduced in size, since operations would be spread over the approaches. However, since estimates of the split in use of the three approach/departure paths were not calculated, the full noise contour was applied to all three scenarios.

Figure 10 – 65 DNL Noise Contour with Western Approach/Departure

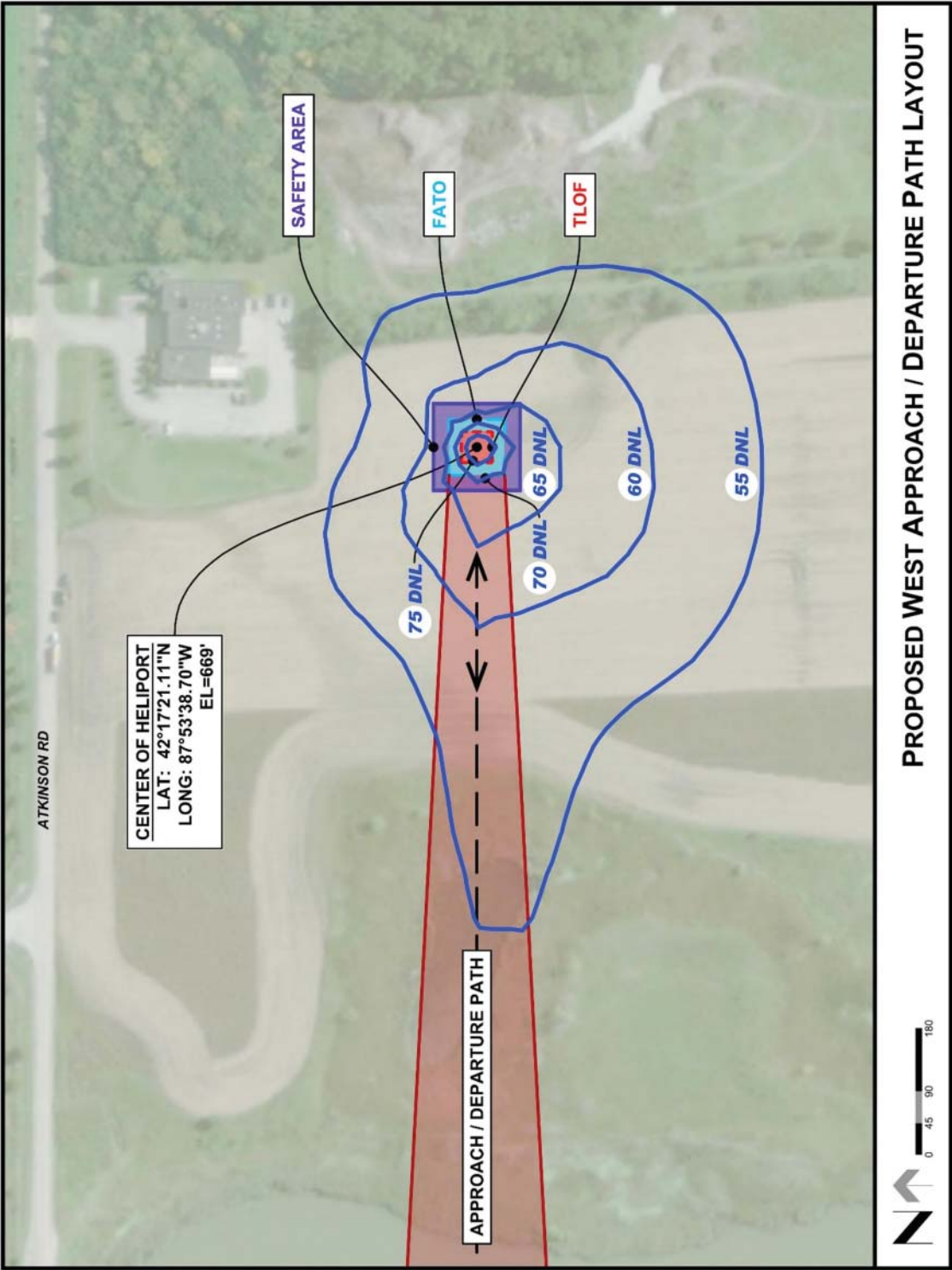


Figure 11 – 65 DNL Noise Contour with Northwestern Approach/Departure

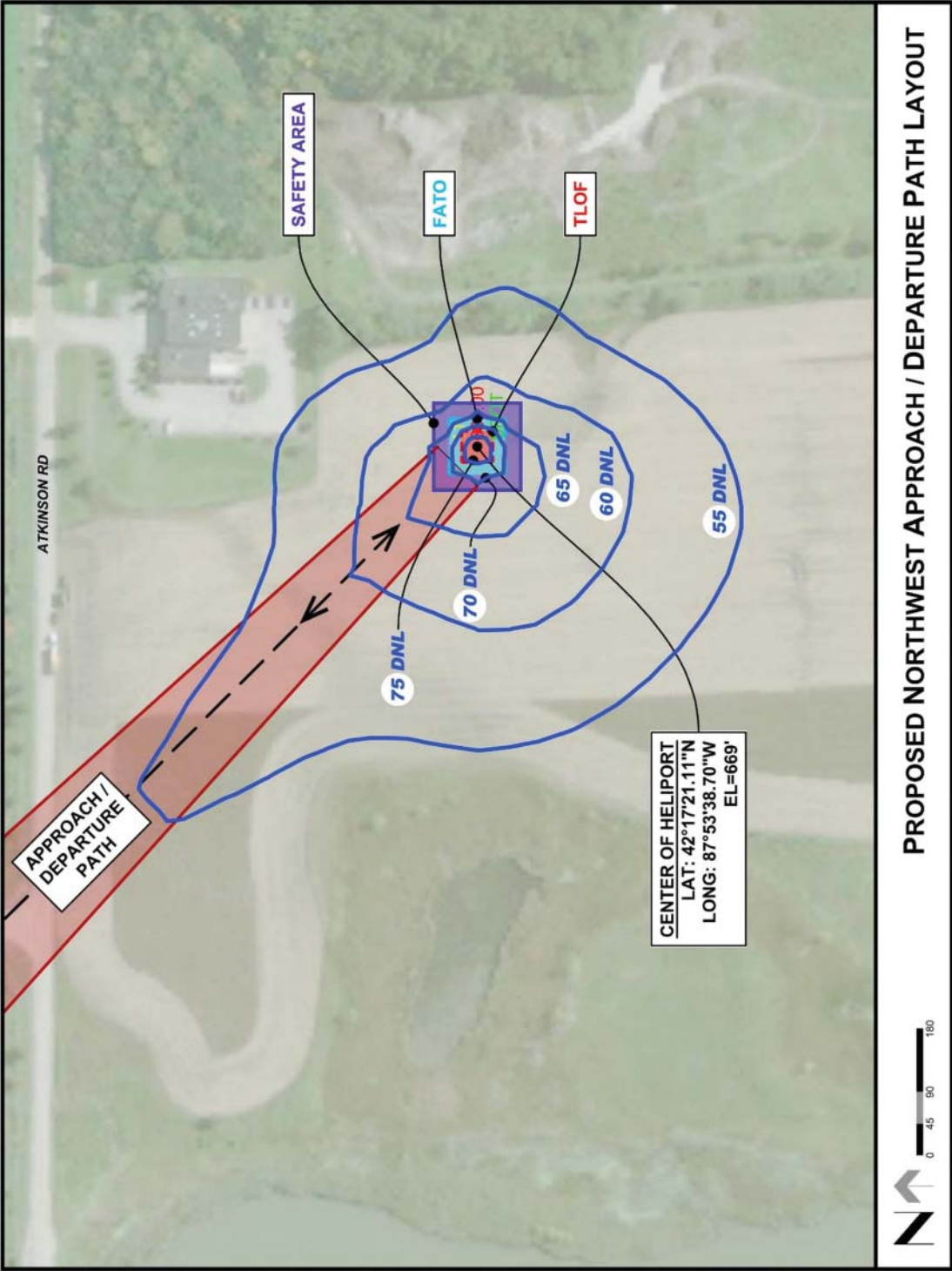
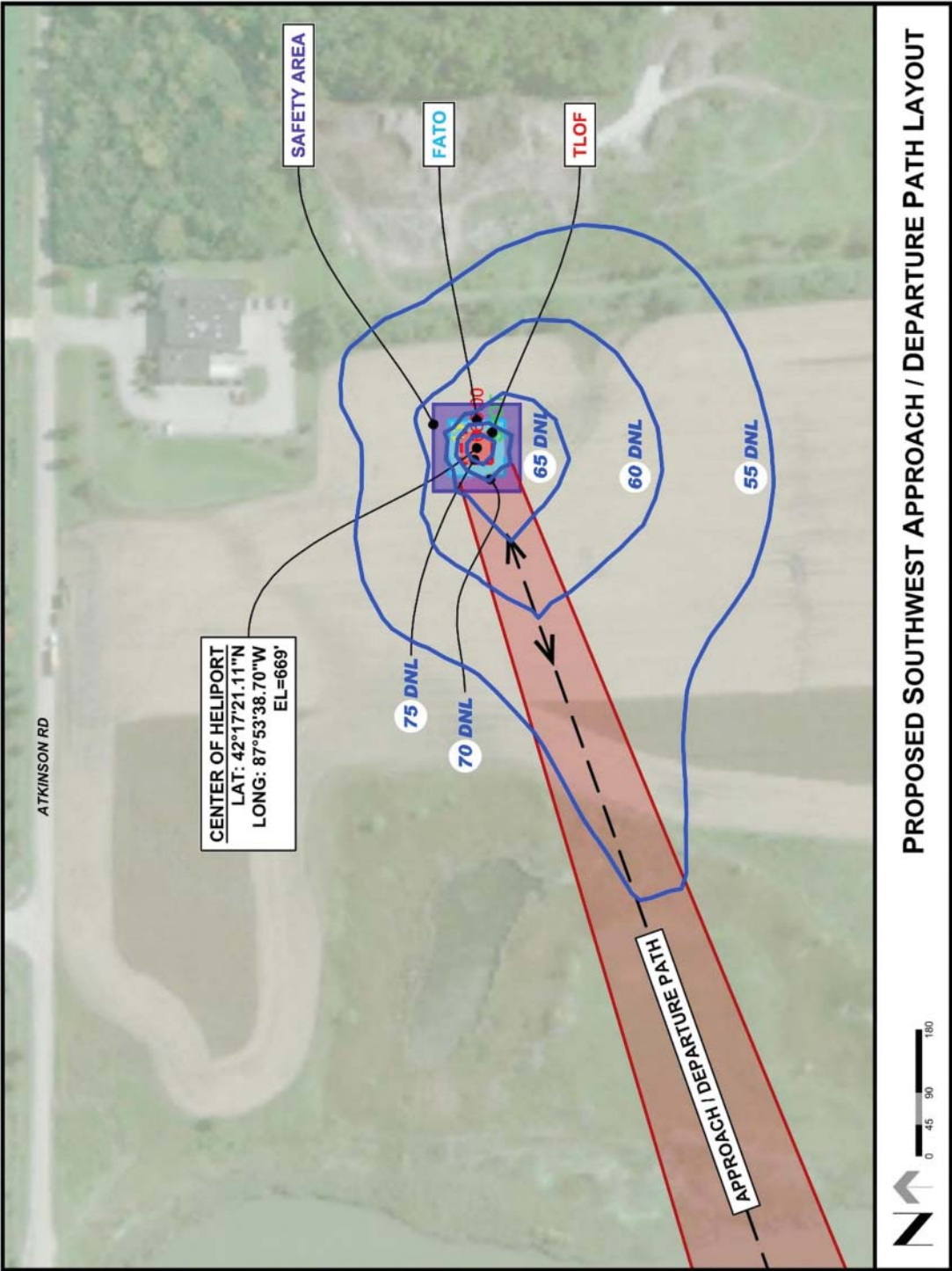


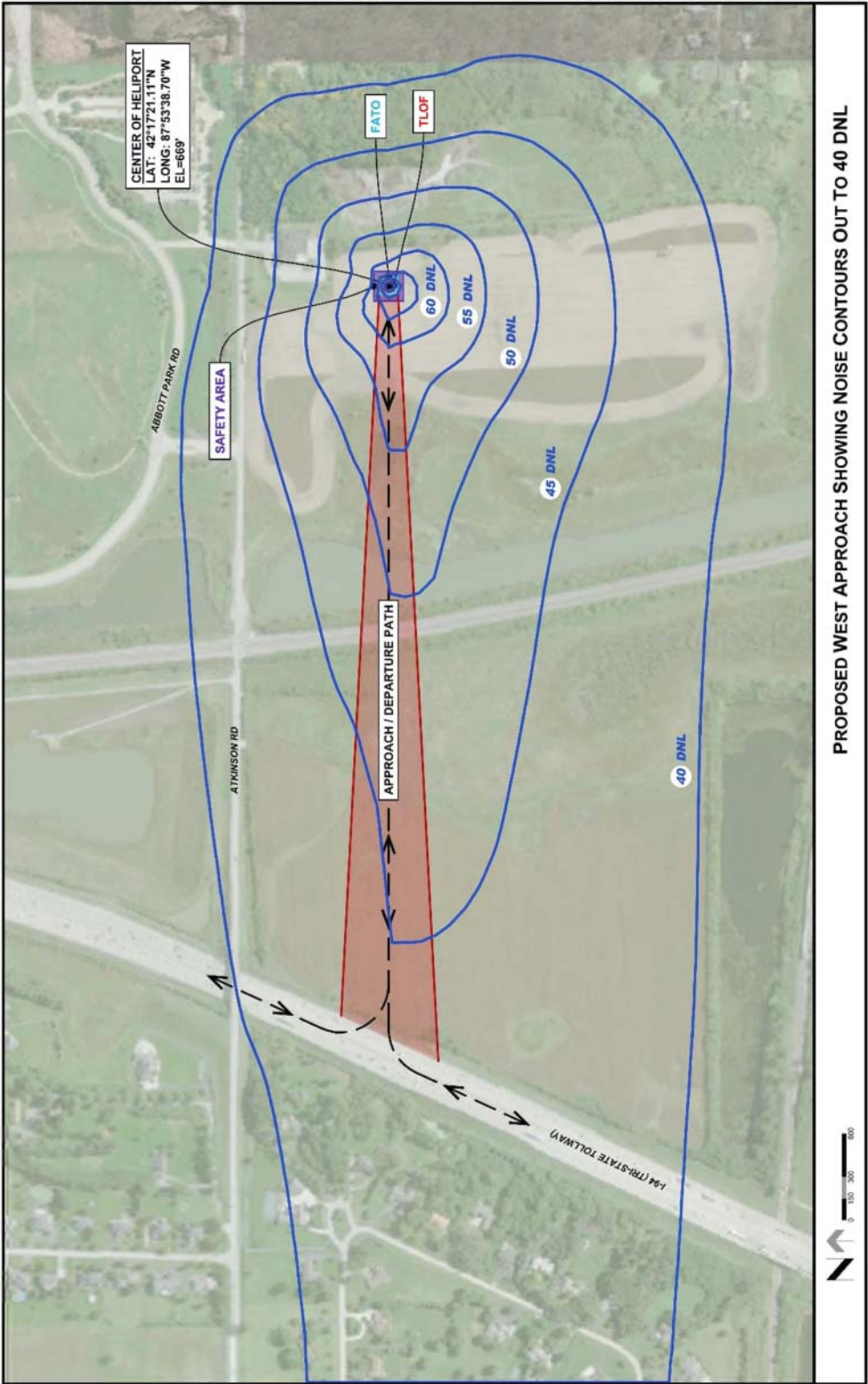
Figure 12 – 65 DNL Noise Contour with Southwestern Approach/Departure



As shown in **Figures 10, 11, and 12**, the 65DNL contour is contained entirely on the property that AbbVie has leased. As a result, there will be no significant aircraft noise impacts with the proposed site development. Noise contours were developed for the 60DNL and 55DNL for informational purposes only, as FAA does not consider the 60DNL or 55DNL significant for land use compatibility or noise sensitivity. Construction equipment noise would be temporary and would be minimized and mitigated through implementation of appropriate construction practices specified in FAA Advisory Circular (AC) 150/5370-10E, *Standards for Specifying Construction of Airports*.

As shown in **Figure 13**, there are no anticipated noise concerns that would trigger an impact, based upon standard FAA design criteria, should the proposed heliport be constructed, since the 65DNL contour is not leaving the property to be utilized by AbbVie and it does not extend toward the north or east where noise sensitive areas are present. As illustrated in this Figure, the 40DNL contour, which is 25DNL below the threshold that FAA deems a concern, doesn't encroach upon the residential area to the east of the proposed site. Consequently, no noise impacts are identified through the FAA noise analysis process.

Figure 13 – Noise Contour Summary



Air Quality

Air quality regulations in the United States are based on concerns that high concentrations of air pollutants can harm human health. The United States Environmental Protection Agency (EPA) developed the National Ambient Air Quality Standards (NAAQS) for six common air pollutants or “criteria pollutants”: carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter measured at diameters of 10 microns (PM₁₀) and 2.5 microns (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb).

The EPA works with state and local governance to designate areas as either meeting (attaining) or not meeting (not attaining) the NAAQS based on recent air monitoring data. Areas in which air pollutant concentrations do not exceed NAAQS standards are considered “attainment” areas, and areas in which the NAAQS standards are exceeded are designated as “non-attainment” areas. The U.S. Green Book indicates that Lake County, Illinois, is in a nonattainment area for 8-hour ozone levels. The area is in attainment for all other criteria pollutants.

Emissions Inventory

To identify whether the proposed project has the potential to create emissions that would exceed air quality standards, an aviation emissions inventory was developed using FAA’s AEDT model. The results of the emissions inventory are presented in **Table 3**. The results were compared to *de minimis* thresholds for non-attainment areas identified by the *FAA Aviation Emissions and Air Quality Handbook Version 3, Update 1* (January 2015). The *de minimis* thresholds represent emission quantities of a NAAQS regulated pollutant or its applicable precursors, as measured in tons per year. Projects in non-attainment areas that produce emissions exceeding *de minimis* thresholds have the potential to cause or contribute to a new or continued violation of the NAAQS.

Table 3 – Results of Air Emissions Review

Emissions Element	Calculated Emissions (Tons/Year)	<i>De Minimis</i> Threshold in Non-attainment Areas (Tons/Year)
Carbon Monoxide (CO)	0.00046	100
Volatile Organic Compounds (VOCs)	0.00006	Not applicable
Nitrogen Oxide (NO _x) (see Note 1)	0.00095	100 (for NO ₂)
Sulphur Oxides (SO _x) (see Note 1)	0.00014	100 (For SO ₂)
Particulate Matter (10 microns in diameter)	0.0	100
Particulate Matter (2.5 microns in diameter)	0.0	100
Lead (See Note 2)	<i>Not applicable</i>	25
Notes 1. The analysis considered Oxides of Nitrogen (NO _x) and oxides of sulfur (SO _x), rather than NO ₂ and SO ₂ specifically. 2. Lead was not considered in the analysis because it is emitted only from piston-powered aircraft using 100 LL fuel. The proposed project does not involve piston-powered aircraft.		

As previously stated, Lake County is considered a non-attainment area for Ozone (O₃). Ozone formation occurs when nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic compounds (VOCs), react in the atmosphere, and these constituents are considered ozone precursors. The results of the emissions analysis were compared to the *de minimis* thresholds associated with each ozone precursor to determine whether potential project-related emissions would contribute to a new or continued violation of the NAAQS

for Ozone. The *de minimis* threshold for CO and NOX (two of the three ozone precursors) in a designated non-attainment area is 100 tons/per year (FAA 2015). As shown in **Table 3**, the calculated annual emission associated with each precursor of ozone is less than 1/1000th of one ton annually; therefore, the projected changes in operational emissions due to the construction and operation of the helipad would not exceed the de-minimis thresholds contained in the *FAA Aviation Emissions and Air Quality Handbook*, as expressed in tons year.

Summary

Based on the data contained in this document, using the FAA AEDT tool and its associated methodologies, the development and operation of a heliport, as proposed, should not create noise related impacts to the surrounding community, nor generate any air quality related concerns. Flights into and out of the heliport should take place over unpopulated areas located to the west of the site and are expected to occur during generally accepted business hours.



Bollinger Environmental, Inc.
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Downers Grove, Illinois 60515
630-968-1960

**WETLAND ASSESSMENT & FARMED WETLAND DETERMINATION REPORT
13415 ATKINSON ROAD PROPERTY
UNINCORPORATED LAKE BLUFF, LAKE COUNTY, ILLINOIS**

Prepared for

Abbvie
[REDACTED]
[REDACTED]

Prepared by

Bollinger Environmental, Inc.
[REDACTED]
[REDACTED]

Bollinger Environmental Project [REDACTED]

September 2019



[REDACTED]
[REDACTED]
[REDACTED]

September 27, 2019

Email

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Subject: Wetland Assessment & Farmed Wetland Determination Report for the
13415 Atkinson Road Property
Unincorporated Lake Bluff, Lake County, Illinois
(Bollinger Environmental Project [REDACTED])

Dear Mr. Garich:

On September 26, 2019, Bollinger Environmental, Inc. (BEI) completed a wetland assessment and farmed wetland determination of the 13415 Atkinson Road Property located in unincorporated Lake Bluff, Lake County, Illinois. Two (2) wetlands (i.e., Wetlands 1 & 2) were identified and flagged with pink pin flags. Flags for Wetland 1 were numbered 1 through 16 and 17 through 31 for Wetland 2. Flags will be surveyed by others.

We also performed a farmed wetland determination to determine if any areas within the active agricultural production portion of the property qualify as farmed wetland. Within the agricultural portions of the property, no farmed wetlands were identified via the Natural Resources Conservation Service (NRCS) 1998 wetland mapping conventions and subsequent data points were collected during the field investigation (see Exhibit 8).

Please note that any impacts to the on-site wetlands should be coordinated first with the Lake County Stormwater Management Commission (SMC) and the U.S. Army Corps of Engineers (USACE). Even if no impacts are proposed, buffers between 30 and 100 feet from the edge of wetland/waters may be required by the County under the Lake County Unified Development Ordinance (UDO) for unincorporated areas. Any impacts to these buffers must be coordinated with the County prior to disturbance. This delineation is the opinion of BEI and therefore we recommend confirming the wetland boundary with the SMC and/or the USACE.

Lake County Regulations

The four categories of wetland type regulated under the Lake County Unified Development Ordinance (UDO), which is enforced by the County and is as follows:

- A) Category-I: Wetland impacts less than or equal to 1 acre and does not impact high quality aquatic resources;

- B) Category-II: Wetland impacts greater than 1 acre and less than 2 acres and does not impact high quality aquatic resources;
- C) Category-III: Wetland impacts greater than or equal to 2 acres or impacts high aquatic resources; and
- D) Category-IV: Wetland impacts for the restoration, creation and enhancement of wetlands provided that there are net gains in aquatic resource function. Category-IV activities include shoreline and streambank erosion restoration described in Article IV. Section C.2.d.3.

The UDO requires mitigation for wetland impacts greater than or equal to 0.10 acres of Isolated Waters of Lake County (IWLC). Mitigation shall provide replacement of the wetland environment lost to development at the following proportional rates (i.e., creation acreage to wetland impact acreage):

- 1) A minimum of 1.5:1 for wetland impacts under Categories I, II and III that are not high-quality aquatic resources, except 1:1 for approved and fully certified wetland mitigation bank credits;
- 2) A minimum of 3:1 for wetland impacts that are high quality aquatic resources;
- 3) A minimum of 6:1 for wetland impacts that are forested wetlands.

Mitigation credit may also be obtained for enhancement. For example, the enhancement of farmed wetlands meeting the size criteria of the UDO may be used for up to 80% of the mitigation requirement. Enhancement of existing non-farmed wetlands may be credited up to 25% of the enhanced wetland acreage completed, provided the wetland impacted acreage created on-site is a minimum 1:1 ratio. Buffer width requirements for water bodies are as follows:

- Total surface area greater than 1/3 acre and less than one acre; the minimum buffer width shall be 30 feet.
- Total surface area is greater than one acre and less than 2 ½ acres, the buffer shall be a minimum of 40 feet.
- Total surface area is greater than 2 ½ acres, the buffer shall be a minimum of 50 feet.
- For non-linear aquatic resources, the minimum buffer shall be 100 feet.

Linear buffers shall be designated along both sides of all channels meeting the definition of Waters of Lake County. The buffer width shall be determined as follows:

- When the channel has a watershed greater than 20-acres, but less than one square mile, the minimum buffer shall be 50 feet on each side of the channel;
- When the channel has a watershed greater than one square mile, the minimum buffer shall be 30 feet on each side of the channel; and
- Linear high-quality aquatic resources and streams with an Index of Biotic Integrity (IBI) greater than 40 shall have a minimum buffer width of 100 feet on each side of the channel.

U.S. Army Corps of Engineers Regulations

The USACE regulates the discharge of dredged or fill material into jurisdictional wetlands and “waters of the U.S.” under Section 404 of the Clean Water Act (Act). Jurisdictional areas covered by the Act are navigable waterways, tributaries to navigable waterways, and wetlands adjacent thereto. Isolated wetlands are exempt from federal regulations following the January 2001 Supreme Court decision (SWANCC v. USACE).

Under current USACE regulations (USACE 2017), to prevent a net loss of wetland, any disturbance of wetlands/waters of the U.S. area requires a permit application. Filling 0.10 acre or more of jurisdictional wetland/waters of the U.S. requires a permit with mitigation at a 1.5:1 replacement ratio. The mitigation ratio increases if an area is considered a High-Quality Aquatic Resource (HQAR). Areas of wetland/waters of the U.S. fill less than 0.10 acre also require a permit; however, mitigation may or may not be required depending on USACE discretion. This discretionary judgment is determined by the overall quality of the wetland and what impact the loss of wetland would have on the surrounding area. Certain Regional Permits do not require mitigation.

USACE regulations may require an upland buffer of native plants adjacent to all created, restored, enhanced and preserved wetlands 0.25 acre or larger. Certain Regional Permits do not require buffers. Buffer width requirements are as follows:

- For a linear body of water (e.g., river, stream, creek, etc.), the buffer shall be a minimum of 50 feet from the Ordinary High-Water Mark (OHWM) on both sides of the linear water body.
- For any other “waters of the U.S.”, including wetlands from 0.25 acres up to 0.50 acres, the buffer shall be a minimum of 30 feet.
- For any “waters of the U.S.”, including wetland over 0.50 acres, the buffer shall be minimum of 50 feet.
- For any area determined to be a HQAR, the buffer shall be 100 feet wide (80-foot minimum).

Generally, the following three steps must be attempted before authorization is issued:

- (1) Avoid wetland and “waters of the U.S.”;
- (2) Minimize wetland and “waters of the U.S.” fill; and
- (3) Provide compensatory mitigation.

The attached report describes the identified wetlands and provides the methodology and reference material used to assist in the wetland assessment. Data Forms, required by the USACE are also included. This assessment is based on field conditions at the time of the BEI site visit and our understanding of current federal, state and local regulations. An evaluation of historic site conditions was not performed.

Please contact our office should you have any additional questions or if we can be of further assistance.

Sincerely,

[REDACTED]

Paul Bollinger, [REDACTED]

[REDACTED]

[REDACTED]



**WETLAND ASSESSMENT & FARMED WETLAND DETERMINATION REPORT
13415 ATKINSON ROAD PROPERTY
UNINCORPORATED LAKE BLUFF, LAKE COUNTY, ILLINOIS**

INTRODUCTION

On September 26, 2019, Bollinger Environmental, Inc. (BEI) completed a wetland assessment of the 13415 Atkinson Road Property located in the unincorporated Lake Bluff, Lake County, Illinois. At the time of our field investigation, two (2) wetlands (i.e., Wetland 1 & 2) were identified within the unfarmed portions of the subject property. Flags for Wetland 1 were numbered 1 through 16 and 17 through 31 for Wetland 2. Flags will be surveyed by others.

We also performed a farmed wetland determination to determine if any areas within the active agricultural production portion of the property qualify as farmed wetland. Within the agricultural portions of the property, no farmed wetlands were identified via the Natural Resources Conservation Service (NRCS) 1998 wetland mapping conventions and subsequent data points were collected during the field investigation (see Exhibit 8).

This report was prepared to document our findings under Section 404 of the Clean Water Act and/or the Lake County Unified Development Ordinance (UDO). Wetland boundaries were delineated in accordance with methodology established by the USACE. The approximate wetland boundaries are shown in Appendix A, Exhibit 8. Appendices illustrate the following:

- A) Exhibits
 - 1) Location Map
 - 2) USFWS National Wetland Inventory (NWI) Map
 - 3) USDA Soil Survey
 - 4) Lake County Wetland Map / Lake County Advanced Identification (ADID) Map
 - 5) FEMA Flood Insurance Rate Map (FIRM)
 - 6) Lake County Topographic Map
 - 7) USGS Topographic Map
 - 8) Aerial Photograph -Wetland Boundaries & Data Point Locations
- B) Site Photographs
- C) USACE Data Forms & Floristic Quality Assessments
- D) Farmed Wetland Aerials

The ±12.5-acre subject property is located 13415 Atkinson Road in unincorporated Lake Bluff, Lake County, Illinois, see Appendix A, Exhibit 1 for locations. Geographically, the study area is found in the southeastern quarter of Section 13, T44N, R11E, and East of the Third Principle Meridian. The site appears to be located within the Upper North Branch Chicago River drainage which is part of the greater Chicago River Watershed (HUC 07120003). The central portion of the study area is located approximately at 42.289735° North Latitude and -87.894706° West Longitude.

The two (2) wetland identified within the non-agricultural portions of the property are summarized in Table 1 below:

Table 1: Farmed Wetland Determination Summary

AREA	POSSIBLE JURISDICTIONAL STATUS*	NATIVE MEAN C	NATIVE FQAI	DOMINANT VEGETATION	TYPE
Wetland 1	USACE	0.30	0.95	large barnyard grass (<i>Echinochloa crus-galli</i>) & fall panic grass (<i>Panicum dichotomiflorum</i>)	Emergent
Wetland 2	SMC	1.09	3.62	narrow-leaf cattail (<i>Typha angustifolia</i>) & seaside goldenrod (<i>Solidago sempervirens</i>)	Emergent

*Jurisdictional Status is solely the opinion of BEI and must be confirmed by the SMC/USACE.

METHODOLOGY

Two methods were used during this investigation. Therefore, the methods and results section are broken down into two sections: A) Wetland Assessment (Non-Agricultural portions of the site) and B) Farmed Wetland Determination (Agricultural portions of the site).

A) Wetland Assessment (Non-Agricultural portions of the site)

Our methodology followed *The Corps of Engineers Wetland Delineation Manual*, dated January 1987 as well as the *Regional supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region*, dated August 2010. Both identify the mandatory technical criteria for wetland identification. The three essential characteristics of a jurisdictional wetland are hydrophytic vegetation, hydric soils and wetland hydrology as described below:

I) Hydrophytic Vegetation: Hydrophytic vegetation is defined as the community of macrophytes that occurs in areas where inundation or soil saturation is either permanent or of sufficient frequency and duration to exert a controlling influence on the plant species present. Hydrophytic vegetation is present when the plant community is dominated by species that can tolerate prolonged inundation or soil saturation during the growing season. Wetland indicator status is the estimated probability a plant species occurs in a wetland area. Lichvar (2016) designated indicator statuses for the U.S. Fish and Wildlife Service, Region 3, which are based on separating plants into five basic groups:

- (1) OBL (Obligate Wetland) almost always occur (estimated probability >99%) in wetlands under natural conditions;
- (2) FACW (Facultative Wetland) usually occur in wetlands (estimated probability 67-99%), but occasionally are found in nonwetlands;

- (3) FAC (Facultative) are equally likely to occur in wetlands or nonwetlands (estimated probability 34-66%);
- (4) FACU (Facultative Upland) usually occur in nonwetlands (estimated probability 67-99%), but occasionally are found in wetlands (estimated probability 1-33%); and
- (5) UPL (Upland) almost always occur (estimated probability >99%) in nonwetlands under natural conditions.

If greater than 50% of the plants present are FAC, FACW, or OBL the subject area is considered jurisdictional in terms of vegetation.

Indicator statuses were assigned to plants based on observations on their behavior throughout the region. However, some have been modified to best describe the plants in the Chicago region.

Vegetation was sampled within plots to quantitatively characterize wetland and/or upland plant communities within a given area. Within each plot visual estimates of percent cover of each plant species were made for each stratum (trees, saplings and shrubs, herbaceous plants and woody vines). The Dominance Test is then calculated by applying the 50/20 rule. If a plant community passes the Dominance Test, then the vegetation is hydrophytic and no further vegetative analysis is required. However, if the plant community fails the dominance test, and indicators of hydric soil and/or wetland hydrology are present then the Prevalence Index is applied. The Prevalence Index is a weighted average of wetland indicator status of all plant species within a sample plot. If the plant community satisfies the Prevalence Index, then the vegetation is hydrophytic. If the plant community fails Prevalence Index, then it must meet the test Morphological Adaptations to be considered hydrophytic. If this last test fails, then the vegetation is considered non-hydrophytic. Results of vegetative sampling are illustrated on the attached Routine U.S. Army Corps of Engineers Data Forms.

A vegetative inventory was compiled for the wetland community. The inventory was then inputted into the US Army Corps of Engineers (2017) *Chicago Region FQA (Floristic Quality Assessment) Calculator*. Each native plant species has been given a coefficient of Conservatism value (C-value), ranging from 0-10. Conservatism meaning plants displaying varying degrees of tolerance to disturbance, as well as varying degrees of fidelity to specific habitat integrity. A rating of 0 represents common species or species not likely to be found only in natural areas and a rating of 10 represents rare species or species most likely to be found only in natural areas. The Floristic Quality Index (FQI) was developed in an attempt to evaluate the level of intrinsic biodiversity from areas with similar C-values, but otherwise differ significantly. This is accomplished by the following equation:

$$FQI = \text{mean } C\text{-value } \sqrt{N}$$

According to Swink and Wilhelm (1994) and Wilhelm and Rericha (2017), if an area has an average C-value of 3.5 or higher or an FQI of 35 or more, one can be fairly confident that the

site has sufficient floristic quality to be at least of marginal natural area quality. If the average *C*-value is 4.5 or higher or has an FQI of 45 or more, then it is almost certain that the remnant has natural area potential. According the USACE, Chicago District, Regional Permit Program (2017), one of the ways a wetland can be considered a “high quality aquatic resource” if the average *C*-value is 3.5 or greater or if the areas has an FQI is 20 or greater.

II) Hydric Soils: According to the National Technical Committee for Hydric Soils a hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA Soil Conservation Service 1994). Repeated periods of saturation or inundation combined with microbial activity causes morphological changes within the soil. This promotes biogeochemical processes, such as the accumulation of organic matter and the reduction, translocation, or accumulation of iron and other reducible elements. The result of these processes is useful in identifying hydric soils during both wet and dry periods (USDA Natural Resources Conservation Service 2014). There are 20 hydric soil indicators in the Land Resource Region (LRR) M per the *Field Indicators of Hydric Soils in the United States* (Ver. 8.2, 2018) and if one is present it is considered a hydric soil. The hydric soil indicators include:

- A1. Histisol
- A2. Histic Epipedon
- A3. Black Histic
- A4. Hydrogen Sulfide
- A5. Stratified Layers
- A10. 2 cm Muck
- A11. Depleted Below A Dark Surface
- A12. Thick Dark Surface
- S1. Sandy Mucky Mineral
- S2. 5 cm Mucky Peat or Peat
- S4. Sandy Gleyed Matrix
- S5. Sandy Redox
- S6. Stripped Matrix
- S7. Dark Surface
- F1. Loamy Mucky Mineral
- F2. Loamy Gleyed Matrix
- F3. Depleted Matrix
- F6. Redox Dark Surface
- F7. Depleted Dark Surface
- F8. Redox Depressions

A soil pit is dug to the appropriate depth to describe the soils profile. Color of the soil matrix and redox, mottling, and gleying within the profile are described using the Munsell Soil Color Charts (Gretagmacbeth 2009). Generally, a hydric soil is present when there is an organic soil, histic epipedon, sulfidic material, aquic or peraquic moisture regime, reducing soils conditions, soil colors gleyed, bright mottles and/or low matrix chroma, soil listed on the hydric soil list, and iron and manganese. Results of soil sampling and if they meet one of the indicators are illustrated on the attached U.S. Army Corps of Engineers Data Forms.

III) Wetland Hydrology: Wetland hydrology indicators are used in combination with indicators of hydric soil and hydrophytic vegetation. These other indicators reflect a sites history of past episodes of inundation or soil saturation and if it was repeated over a period of time. Areas that have hydrophytic vegetation and hydric soils generally have wetland hydrology (National Research Council 1995). Hydrologic indicators are the most brief of all wetland indicators as occur from recent or long-term meteorological conditions. Typically, the presence of water for a week or more during the growing season creates anaerobic conditions. Anaerobic conditions lead to the prevalence of wetland plants.

An area needs to meet one or more of the primary wetland hydrology indicators, which include: surface water, high water table, saturation, water marks, sediment deposits, drift

deposits, algal mat or crust, iron deposits, inundation visible on aerial imagery, sparsely vegetated concave surface, water-stained leaves, aquatic fauna, true aquatic plants, hydrogen sulfide odor, oxidized rhizospheres on living roots, presence of reduced iron, recent iron reduction in tilled soils, thin muck surface, and gauge or well data. Or an area needs to meet two or more of the secondary indicators, which include: surface soil cracks, dry-season water table, crayfish burrows, saturation visible on aerial imagery, stunted or stressed plants, geomorphic position and the FAC-Neutral test. Results of hydrology are illustrated on the attached USACE Data Forms.

B) Farmed Wetland Determination (Agricultural portions of the site)

BEI staff completed a Farmed Wetland Determination of the 13415 Atkinson Road Property in Mundelein, Lake County, Illinois to determine on-site farmed wetland boundaries. The review coincided with guidance from the NRCS 1998 wetland mapping conventions. These conventions require a review of various reference maps and five (5) years of USDA-Farm Services Agency (FSA) aerial to identify “wetland signatures”. Aerial slides used were for designated years of approximate normal precipitation based on local precipitation data. If wetland signatures are identified in 3 or more of the 5 normal precipitation years reviewed (>50%), the area is considered to be a potential farmed wetland. Signatures that coincide with mapped NWI wetlands count as 1 year. Potential farmed wetlands were reviewed in the field to determine if they met final criteria to be designated as a farmed wetland.

The Waukegan National Weather Service precipitation recording station was the closest to the Property. Therefore, according to procedure the following recommended normal precipitation year slides available were examined: 2001, 1997, 1993, 1991, and 1990. Data Points are to be taken in Potential Wetland Areas (PWAs).

RESULTS

The following is a brief description of the wetland area identified on-site with a list of the dominant plant species, positive wetland hydrology and soils observed. Detailed information regarding the on-site wetland is found on the attached USACE Data Forms including a plant inventory and the results of the US Army Corps of Engineers (2017) *Chicago Region FQA (Floristic Quality Assessment) Calculator* illustrating the wetlands C-value and FQAI (Appendix C).

A) Wetland Assessment (Non-Agricultural portions of the site)

Two (2) wetlands (i.e., Wetlands 1 & 2) were identified within the non-agricultural portions of the property. Additionally, a rock-lined ditch surrounded by Kentucky blue grass a (see Photo Point 1, Appendix B - Site Photographs) and a Kentucky blue grass dominated roadside ditch (Photo Point 2, Appendix B) were identified in the northeastern portion of the property and may be hydrologically connected to Wetland 2.

Wetland 1

Wetland 1 located in the western portions of the property appears to be wetland/waters under the jurisdiction of the USACE and is characterized at Data Point 4A in Appendix A, Exhibit 8. The wetland had a Native Mean C-value of 0.30 and a Native FQAI of 0.95 (Appendix C), indicative of a wetland community with extremely low floristic quality. The wetland was dominated by large barnyard grass (*Echinochloa crus-galli*) and fall panic grass (*Panicum dichotomiflorum*) at Data Point 4A. Positive wetland hydrology was indicated by geomorphic position and a positive FAC-Neutral test. Soils were mapped as Beecher silt loam, 2 to 4% slopes (298B). Soils were mapped as Montgomery silty clay loam, 0 to 2% slopes (465A). This soil unit series is included on the *National Hydric Soils List* by the Natural Resources Conservation Service (NRCS). The field sampled soil profile revealed a low chroma matrix color with redoximorphic features (i.e., mottles) within the soil matrix, which is indicative of hydric soils.

Wetland 2

Wetland 2 located in the northeastern corner of the property appears to be an Isolated Waters of Lake County (IWLC) and is characterized at Data Point 7A in Appendix A, Exhibit 8. The wetland had a Native Mean C-value of 1.09 and a Native FQAI of 3.62 (Appendix C), indicative of a wetland community with low floristic quality. The wetland was dominated by narrow-leaf cattail (*Typha angustifolia*) and seaside goldenrod (*Solidago sempervirens*) at Data Point 7A. Positive wetland hydrology was indicated by the presence of saturation, oxidized rhizospheres on living roots, and a positive FAC-Neutral test. Soils were mapped as Montgomery silty clay loam, 0 to 2% slopes (465A). This soil unit series is included on the *National Hydric Soils List* by the NRCS. The field sampled soil profile revealed a low chroma matrix color with redoximorphic features (i.e., mottles) within the soil matrix and pore linings, which are indicative of hydric soils.

B) Farmed Wetland Determination (Agricultural portions of the site)

Table 3. Existing Data Sources Summary			
Exhibit	Title of data source	Wetland(s) and/or hydric soils	Comments
1	Location Map	No	
2	NWI Map	Yes	Non-Labelled Wetland, Dark signatures
3	NRCS Soils Map	Yes	3 hydric soils on-site
4	Lake County ADID Map	Yes	3 Wetland/Waters, 2 drainageways shown
5	FIRM	Yes	0.2% Annual Chance Flood Hazard
6	USGS Topographic Map	Yes	Sloping NE to SW, 22-ft. relief (700 ft to 678
7	Aerial Photograph	Yes	Dark signatures, contoured surficial flow

BEI completed a site visit of the Atkinson Road Property on September 26, 2019. The purpose of the site visit was to delineate on-site wetlands/waters of the U.S. and investigate

potential farmed wetland areas. If data points are required, site photographs, and USACE forms are to be completed at each PWA.

All recommended Farm Service Agency (FSA) slides were examined and all PWAs were indicated on an aerial photograph (Appendix D). Each PWA was evaluated year-by-year and results are summarized in Table 4.

Table 4. Precipitation and Slide Analysis Summary							
Year	Spectral Signature of Potential Wetland Areas (PWAs)						
	1	2	3	4	5	6	7
2001	X	-	-	-	-	-	-
1997	-	-	-	-	-	-	-
1993	-	-	-	-	-	-	-
1991	-	-	X	X	-	-	-
1990	-	X	X	X	X	X	X
NWI	-	-	-	-	-	-	-
TOTAL	1	1	2	2	1	1	1

X = Crop Damage

The final farmed wetland determination results are shown in Appendix D; seven (7) PWAs resulting in no farmed wetlands were identified during this investigation. The following spectral signatures/responses were noted in making this determination:

- Potential Wetland Area “1”. Crop damage present in one of the five years of normal precipitation. The PWA appears in at least one of 5 normal precipitation years and was not identified on the NWI map. Therefore, Potential Wetland Area “1” (i.e., Data Point 6B) is not considered a farmed wetland.
- Potential Wetland Area “2”. Crop damage present in one of the five years of normal precipitation. The PWA appears in at least one of 5 normal precipitation years but was not identified on the NWI map. Therefore, Potential Wetland Area “8” is not considered a farmed wetland.
- Potential Wetland Area “3”. Crop damage present in two of the five years of normal precipitation. The PWA appears in at least two of 5 normal precipitation years but was not identified on the NWI map. Therefore, Potential Wetland Area “3” is not considered a farmed wetland.
- Potential Wetland Area “4”. Crop damage present in two of the five years of normal precipitation. The PWA appears in at least two of 5 normal precipitation years but was not identified on the NWI map. Therefore, Potential Wetland Area “4” (i.e., Data Point 5B) is not considered a farmed wetland.
- Potential Wetland Area “5”. Crop damage present in one of the five years of normal precipitation. The PWA appears in at least one of 5 normal precipitation

years but was not identified on the NWI map. Therefore, Potential Wetland Area “5” is not considered a farmed wetland.

- Potential Wetland Area “6”. Crop damage present in one of the five years of normal precipitation. The PWA appears in at least one of 5 normal precipitation years but was not identified on the NWI map. Therefore, Potential Wetland Area “6” (i.e., Data Point 1B) is not considered a farmed wetland.
- Potential Wetland Area “7”. Crop damage present in one of the five years of normal precipitation. The PWA appears in at least one of 5 normal precipitation years but was not identified on the NWI map. Therefore, Potential Wetland Area “7” is not considered a farmed wetland.

Based on our evaluation of existing data and the site visit, Exhibit 8 is considered our Final Farmed Wetland Determination. PWA’s 1 through 7 do not meet the criteria for being farmed wetlands.

REFERENCE MATERIALS

The following reference materials were reviewed and used to assist in the wetland field reconnaissance. Exhibits are included in Appendix A.

LOCATION

The ±12.5-acre subject property is located 13415 Atkinson Road in unincorporated Lake Bluff, Lake County, Illinois, see Appendix A, Exhibit 1 for locations. Geographically, the study area is found in the southeastern quarter of Section 13, T44N, R11E, and East of the Third Principle Meridian. The site appears to be located within the Upper North Branch Chicago River drainage which is part of the greater Chicago River Watershed (HUC 07120003). The central portion of the study area is located approximately at 42.289735° North Latitude and -87.894706° West Longitude.

USFWS NATIONAL WETLAND INVENTORY

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory map (NWI) does not indicate any wetland areas within the subject property (Exhibit 2). The NWI serves only as a large-scale guide and actual wetland locations and types often vary from that mapped.

USDA SOIL SURVEY

The Soil Survey of Lake County, Illinois (Calsyn 2005) was reviewed to determine the location of hydric soils within the study area (Exhibit 3). Mapped hydric soil can be indicative of wetland conditions.

The following three (3) soil unit series are mapped within the project area:

<u>Code</u>	<u>Description</u>	<u>Hydric Status</u>
228C2	Nappanee silty clay loam, 4 to 6 percent slopes, eroded	Hydric
465A	Montgomery silty clay loam, 0 to 2 percent slopes	Hydric
298B	Wauconda and Frankfort silt loams, 0 to 2 percent slopes	Hydric

LAKE COUNTY WETLAND MAP/LAKE COUNTY ADVANCED IDENTIFICATION (ADID) MAP

The Lake County Wetland Map and the Advanced Identification (ADID) Map indicates that two wetlands (2) Isolated Waters/Wetlands of Lake County (IWLC), two ditches, and a constructed stormwater facility associated with the on-site Libertyville Fire Protection District Station 3 are located within the project boundaries. One IWLK (1) is in the western portions of the site and corresponds with delineated Wetland 1. One (1) IWLC is in the northeastern corner of the site and corresponds with delineated Wetland 2. It appears Wetland 2 may be hydrologically connected to a rock-lined ditch and a road-side ditch (please refer to Photo Points 1 & 2 in Appendix B - Site Photographs) in the northeastern portion of the property. None of the wetlands depicted on the Lake County Wetland Map are

considered a high-quality, ADID wetlands (Exhibit 4). The Lake County Wetland Map/Lake County ADID Map serves only as a large-scale guide and actual wetland locations and types often vary from that mapped.

FEMA FLOOD INSURANCE RATE MAP

The FEMA Flood Insurance Rate Map (FIRM; Panel# 17097C0167K, 9/18/2013) for Lake County, Illinois, (Exhibit 5) was reviewed to determine the presence of floodplain, which can be indicative of wetland hydrology. The FIRM indicates that the western portion of the property lies within the 100-year floodplain (*Zone AE*) and also includes a minimal flooding zone (*Zone X* with 1% annual chance of depths less than 1 foot) just outside the 100-year floodplain boundary.

TOPOGRAPHIC MAPS

A Lake County Topographic Map (Exhibit 6) and a USGS Topographic Map (Exhibit 7) were reviewed to evaluate the areas topography and general drainage pattern on and off-site. The Lake County map is shown in 1-ft contour intervals and the USGS map in 10-ft contours over the landscape. Both maps show that the project site has approximately 22 feet of relief across the landscape, draining from the northeast to the southwest (700 ft to 678 ft).

LITERATURE CITED

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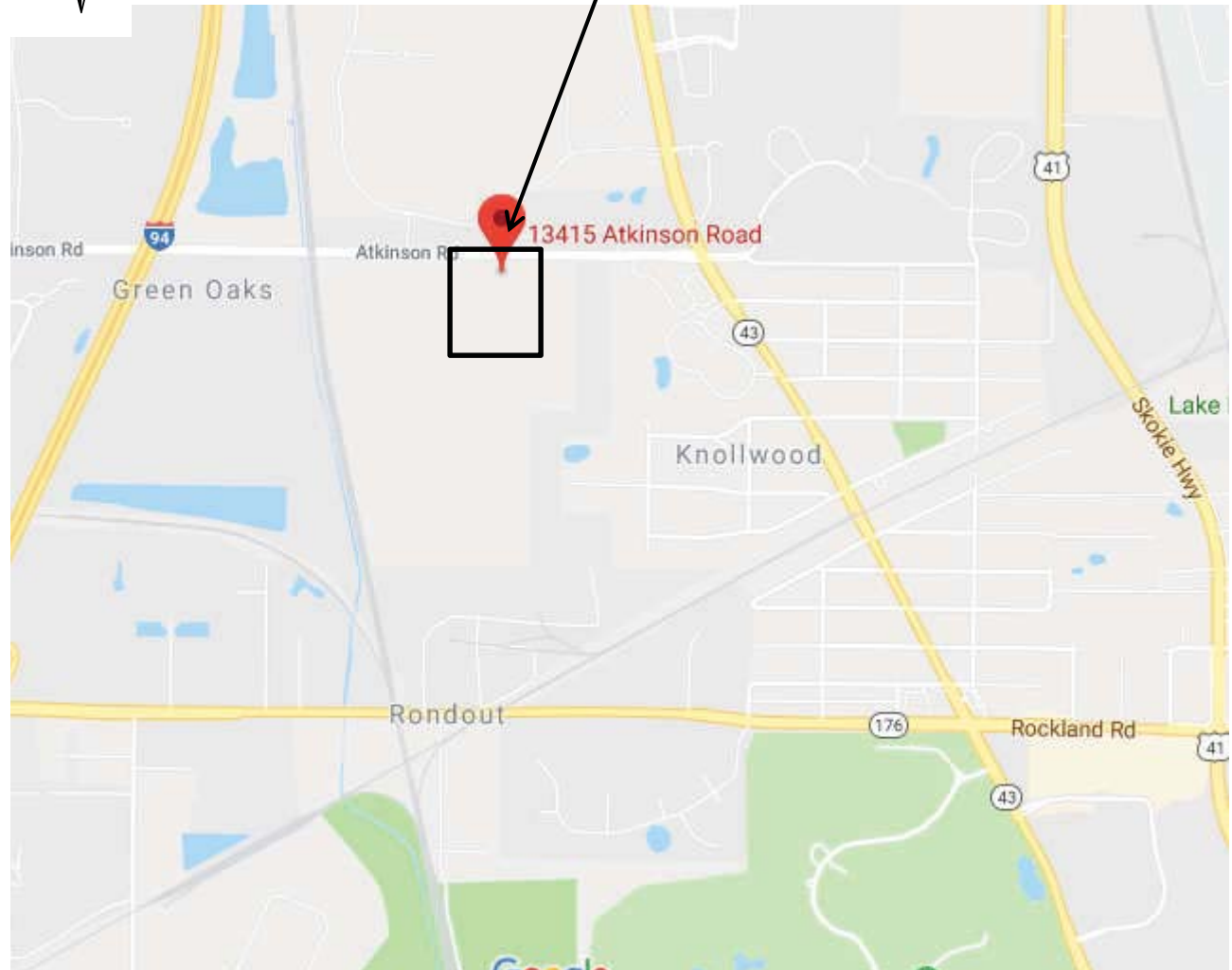
Wilhelm, Gerould & Laura Rericha. 2017. Flora of the Chicago Region: A Floristic and Ecological Synthesis. Indiana Academy of Science. Indianapolis. IN.

APPENDIX A

EXHIBITS



PROJECT SITE



Source: Google Maps











Title: Location Map
Project Number: [REDACTED]
Site: 13415 Atkinson Rd. Property
Client: Abbvie
Exhibit: 1



PROJECT SITE



Source: USFWS National Wetland Mapper

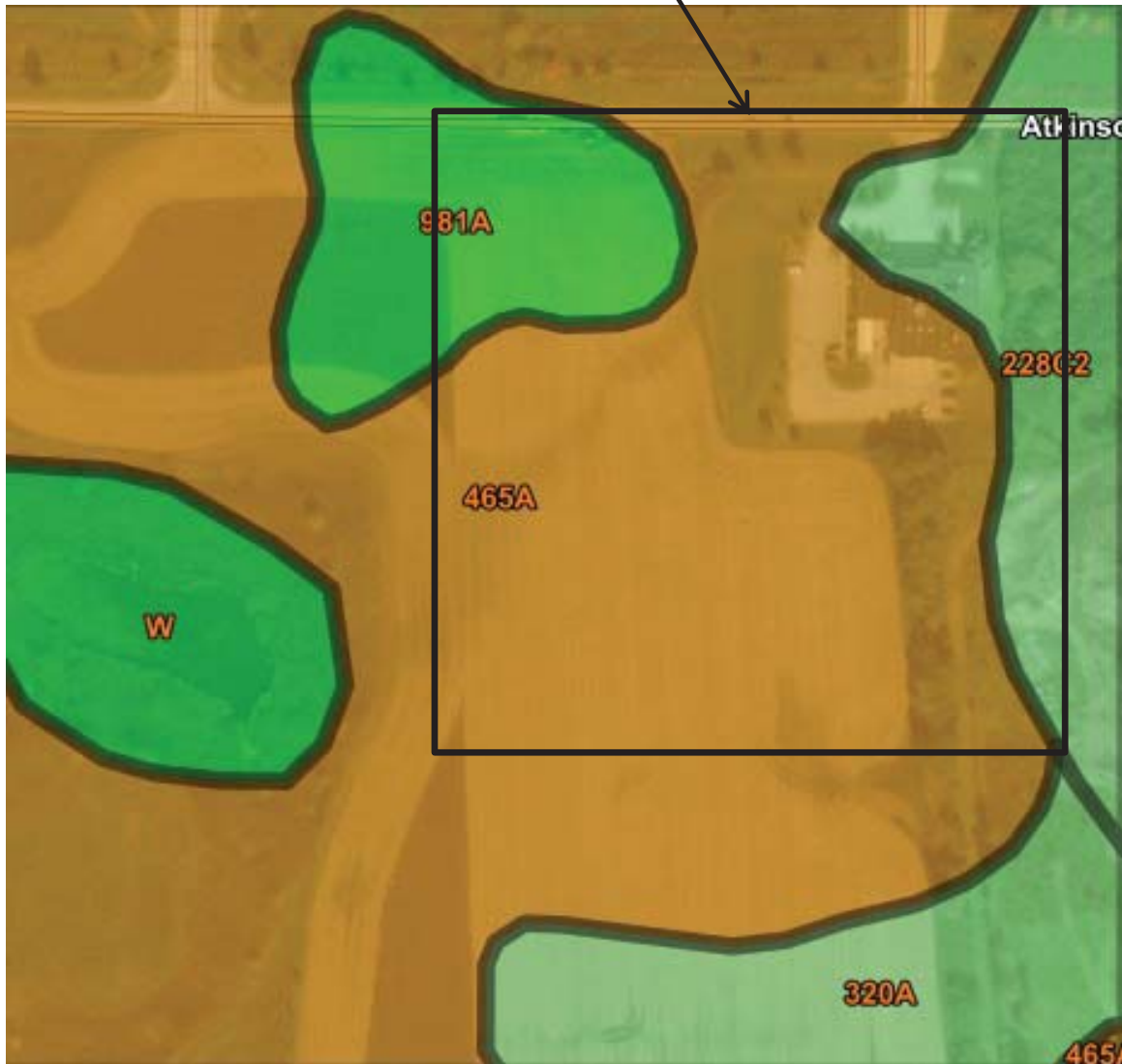
Wetlands	
	Freshwater Emergent
	Freshwater Forested/Shrub
	Estuarine and Marine Deepwater
	Estuarine and Marine
	Freshwater Pond
	Lake
	Riverine
	Other



Title: National Wetland Inventory
Project Number: XXXXXXXXXX
Site: 13415 Atkinson Rd. Property
Client: Abbvie
Exhibit: 2









PROJECT SITE



Source: Lake County GIS

LEGEND

Map unit symbol	Map unit name	Rating
228C2	Nappanee silty clay loam, 4 to 6 percent slopes, eroded	6
320A	Frankfort silt loam, 0 to 2 percent slopes	6
465A	Montgomery silty clay loam, 0 to 2 percent slopes	90
981A	Wauconda and Frankfort silt loams, 0 to 2 percent slopes	0
W	Water	0

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

Title: Soil Survey
Project Number: XXXXXXXXXX
Site: 13415 Atkinson Rd. Property
Client: Abbvie
Exhibit: 3





PROJECT SITE



Legend

Source: Lake County GIS

ADvanced
IDentification
Wetlands



Lake County
Wetland
Inventory



Title: Lake County Wetland Map/ADID Map

Project Number: [REDACTED]

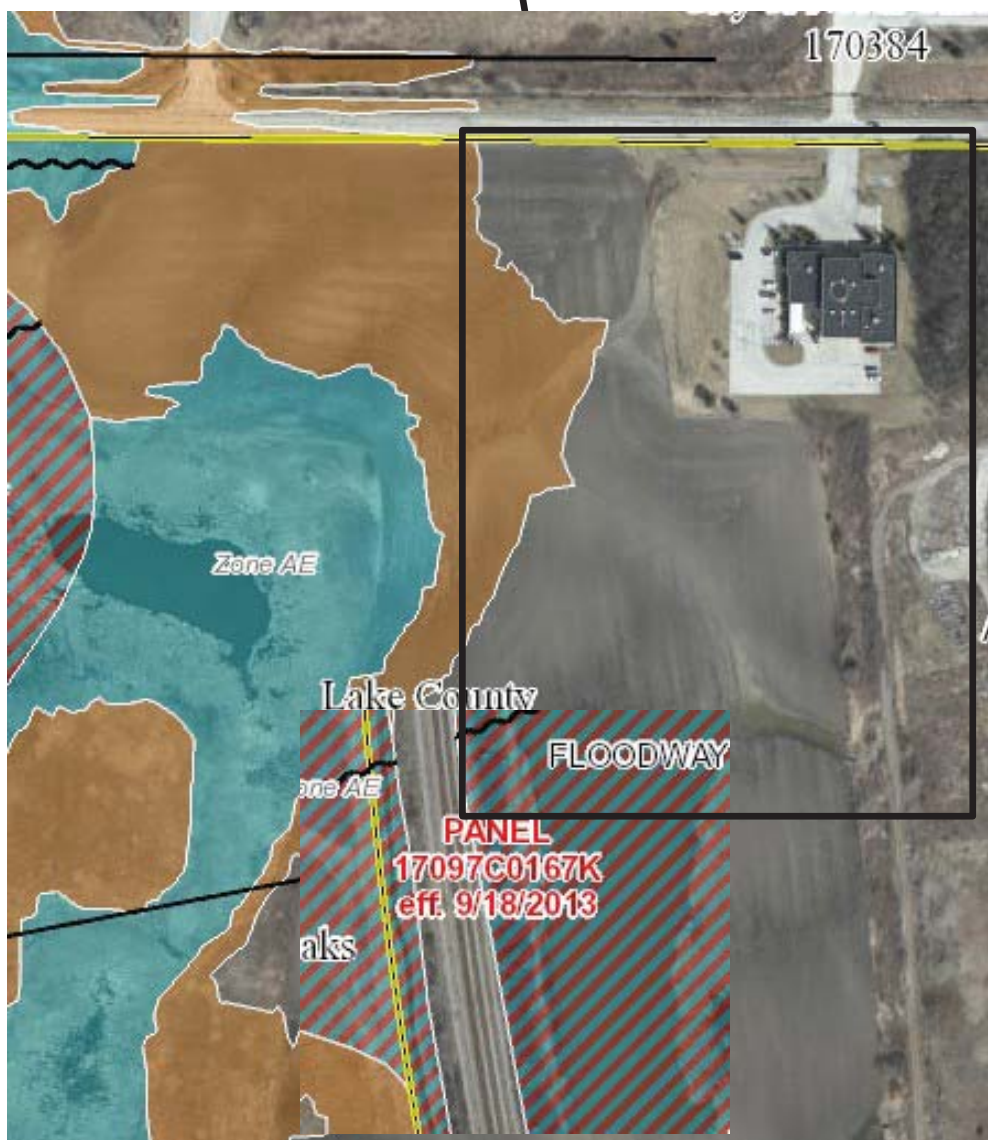
Site: 13415 Atkinson Rd. Property

Client: Abbvie








Exhibit: 4



PROJECT SITE



Legend

-  1% Annual Chance Flood Hazard
-  Regulatory Floodway
-  Special Floodway
-  Area of Undetermined Flood Hazard
-  0.2% Annual Chance Flood Hazard
-  Future Conditions 1% Annual Chance Flood Hazard
-  Area with Reduced Risk Due to Levee

Source: Lake County GIS
Panel #: 17097C0167K
Effective Date: 9/18/2013



Title: Flood Insurance Rate Map (FIRM)
Project Number: XXXXXXXXXX
Site: 13415 Atkinson Rd. Property
Client: Abbvie
Exhibit: 5



PROJECT SITE



Source: Lake County GIS

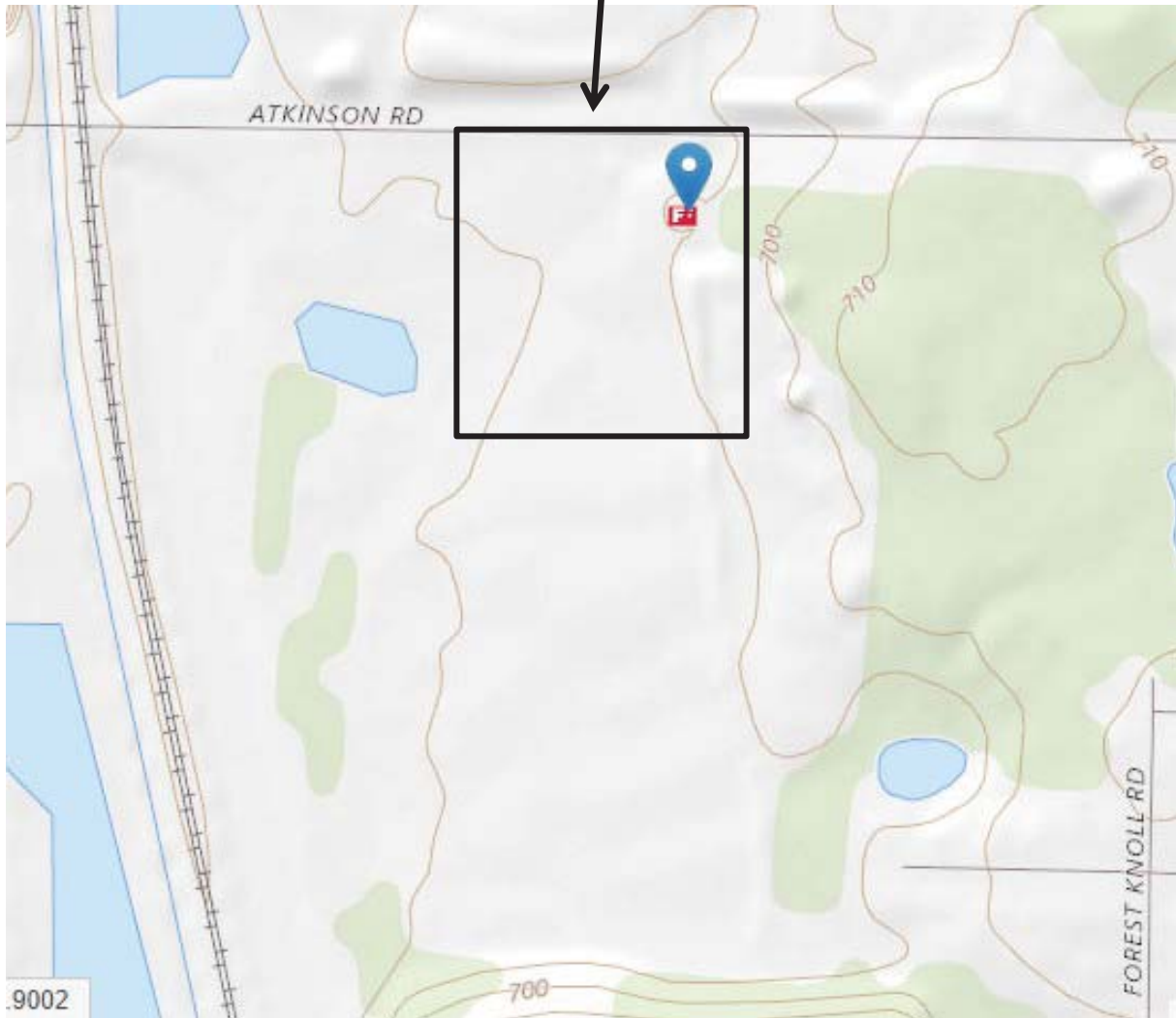


Title: Lake County Topographic Map
Project Number: [REDACTED]
Site: 13415 Atkinson Rd. Property
Client: Abbvie
Exhibit: 6

N



PROJECT SITE



Source: USGS.com



Title: USGS Topographic Map
Project Number: [REDACTED]
Site: 13415 Atkinson Rd. Property
Client: Abbvie
Exhibit: 7



PROJECT SITE



Legend

Data Point Location =

DP 1A

Flagged Wetland Boundary=



Photo Location=

P1 →

Source: Lake County GIS



Title: Aerial Photograph

Project Number: [REDACTED]

Site: 13415 Atkinson Rd. Property

Client: Abbvie

Exhibit: 8

APPENDIX B
SITE PHOTOGRAPHS



Data Point 1B (Upland) facing southeast, September 26, 2019.



Data Point 2B (Upland) facing west, September 26, 2019.



Data Point 3B (Upland) facing southwest, September 26, 2019.



Data Point 4A (Wetland 4) facing southwest, September 26, 2019.



Data Point 4B (Upland) facing northeast, September 26, 2019.



Data Point 5B (Upland) facing north, September 26, 2019.



Data Point 6B (Upland) facing north, September 26, 2019.



Data Point 7A (Wetland 7) facing northeast, September 26, 2019.



Data Point 7B (Upland) facing west, September 26, 2019.



Photo Point 1 (P1) facing east and showing a rock-lined ditch surrounded by Kentucky blue grass (*Poa pratensis*), September 26, 2019.



Photo Point 2 (P2) facing east and showing a road-side ditch dominated by Kentucky blue grass, September 26, 2019.

APPENDIX C

U.S. ARMY CORPS FORMS &

FLORISTIC QUALITY ASSESSMENTS

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbie State: IL Sampling Point: 1B (Upland)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none
 Slope (%): 0 - 1 Lat: 42.288698 Long: -87.893529 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Farmed area, not wetland	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 0 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 0.0% </u> (A/B)																
1. <u> </u>																					
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
5. <u> </u>																					
		=Total Cover																			
Sapling/Shrub Stratum (Plot size: <u> </u>)					Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u> 0 </u></td> <td>x 1 = <u> 0 </u></td> </tr> <tr> <td>FACW species <u> 0 </u></td> <td>x 2 = <u> 0 </u></td> </tr> <tr> <td>FAC species <u> 10 </u></td> <td>x 3 = <u> 30 </u></td> </tr> <tr> <td>FACU species <u> 15 </u></td> <td>x 4 = <u> 60 </u></td> </tr> <tr> <td>UPL species <u> 75 </u></td> <td>x 5 = <u> 375 </u></td> </tr> <tr> <td>Column Totals: <u> 100 </u> (A)</td> <td><u> 465 </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u> 4.65 </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u> 0 </u>	x 1 = <u> 0 </u>	FACW species <u> 0 </u>	x 2 = <u> 0 </u>	FAC species <u> 10 </u>	x 3 = <u> 30 </u>	FACU species <u> 15 </u>	x 4 = <u> 60 </u>	UPL species <u> 75 </u>	x 5 = <u> 375 </u>	Column Totals: <u> 100 </u> (A)	<u> 465 </u> (B)	Prevalence Index = B/A = <u> 4.65 </u>	
Total % Cover of:	Multiply by:																				
OBL species <u> 0 </u>	x 1 = <u> 0 </u>																				
FACW species <u> 0 </u>	x 2 = <u> 0 </u>																				
FAC species <u> 10 </u>	x 3 = <u> 30 </u>																				
FACU species <u> 15 </u>	x 4 = <u> 60 </u>																				
UPL species <u> 75 </u>	x 5 = <u> 375 </u>																				
Column Totals: <u> 100 </u> (A)	<u> 465 </u> (B)																				
Prevalence Index = B/A = <u> 4.65 </u>																					
1. <u> </u>																					
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
5. <u> </u>																					
		=Total Cover																			
Herb Stratum (Plot size: <u> </u>)					Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u><i>Daucus carota</i></u>		70	Yes	UPL																	
2. <u><i>Erigeron canadensis</i></u>		10	No	FACU																	
3. <u><i>Ambrosia trifida</i></u>		10	No	FAC																	
4. <u><i>Melilotus altissimus</i></u>		5	No	UPL																	
5. <u><i>Taraxacum officinale</i></u>		5	No	FACU																	
6. <u> </u>																					
7. <u> </u>																					
8. <u> </u>																					
9. <u> </u>																					
10. <u> </u>																					
		100	=Total Cover																		
Woody Vine Stratum (Plot size: <u> </u>)																					
1. <u> </u>																					
2. <u> </u>																					
		=Total Cover																			

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

SOIL

Sampling Point: 1B (Upland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 20	10YR 3/1	100					Loamy/Clayey	silty clay loam
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.							² Location: PL=Pore Lining, M=Matrix.	
Hydric Soil Indicators:							Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/> Histosol (A1)			<input type="checkbox"/> Sandy Gleyed Matrix (S4)				<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Histic Epipedon (A2)			<input type="checkbox"/> Sandy Redox (S5)				<input type="checkbox"/> Iron-Manganese Masses (F12)	
<input type="checkbox"/> Black Histic (A3)			<input type="checkbox"/> Stripped Matrix (S6)				<input type="checkbox"/> Red Parent Material (F21)	
<input type="checkbox"/> Hydrogen Sulfide (A4)			<input type="checkbox"/> Dark Surface (S7)				<input type="checkbox"/> Very Shallow Dark Surface (F22)	
<input type="checkbox"/> Stratified Layers (A5)			<input type="checkbox"/> Loamy Mucky Mineral (F1)				<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10)			<input type="checkbox"/> Loamy Gleyed Matrix (F2)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)			<input type="checkbox"/> Depleted Matrix (F3)					
<input type="checkbox"/> Thick Dark Surface (A12)			<input type="checkbox"/> Redox Dark Surface (F6)				³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> Sandy Mucky Mineral (S1)			<input type="checkbox"/> Depleted Dark Surface (F7)					
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)			<input type="checkbox"/> Redox Depressions (F8)					
Restrictive Layer (if observed):								
Type: _____						Hydric Soil Present? Yes _____ No <u> X </u>		
Depth (inches): _____								
Remarks: _____								

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		
Field Observations:			
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
(includes capillary fringe)		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbvie State: IL Sampling Point: 2B (Upland)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none
 Slope (%): 0 - 1 Lat: 42.289998 Long: -87.894350 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Recently farmed area but not farmed in 2019, not wetland	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
1.																																					
2.																																					
3.																																					
4.																																					
5.																																					
		=Total Cover			Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;">Total % Cover of:</td> <td style="width: 10%;"></td> <td style="width: 10%;">Multiply by:</td> <td style="width: 40%;"></td> </tr> <tr> <td>OBL species</td> <td><u>0</u></td> <td>x 1 =</td> <td><u>0</u></td> </tr> <tr> <td>FACW species</td> <td><u>50</u></td> <td>x 2 =</td> <td><u>100</u></td> </tr> <tr> <td>FAC species</td> <td><u>5</u></td> <td>x 3 =</td> <td><u>15</u></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> </tr> <tr> <td>UPL species</td> <td><u>3</u></td> <td>x 5 =</td> <td><u>15</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>58</u> (A)</td> <td></td> <td><u>130</u> (B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>2.24</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>50</u>	x 2 =	<u>100</u>	FAC species	<u>5</u>	x 3 =	<u>15</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>3</u>	x 5 =	<u>15</u>	Column Totals:	<u>58</u> (A)		<u>130</u> (B)	Prevalence Index = B/A = <u>2.24</u>			
Total % Cover of:		Multiply by:																																			
OBL species	<u>0</u>	x 1 =	<u>0</u>																																		
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Column Totals:	<u>58</u> (A)		<u>130</u> (B)																																		
Prevalence Index = B/A = <u>2.24</u>																																					
		=Total Cover																																			
Sapling/Shrub Stratum (Plot size: <u> </u>)																																					
1.																																					
2.																																					
3.																																					
4.																																					
5.																																					
		=Total Cover																																			
Herb Stratum (Plot size: <u> </u>)																																					
1.	<u>Echinochloa crus-galli</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																																	
2.	<u>Cyperus esculentus</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																																	
3.	<u>Panicum dichotomiflorum</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																																	
4.	<u>Xanthium strumarium</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																																	
5.	<u>Glycine max</u>	<u>3</u>	<u>No</u>	<u>UPL</u>																																	
6.																																					
7.																																					
8.																																					
9.																																					
10.																																					
		<u>58</u>	=Total Cover																																		
Woody Vine Stratum (Plot size: <u> </u>)																																					
1.																																					
2.																																					
		=Total Cover																																			
Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																					
Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																																					
Remarks: (Include photo numbers here or on a separate sheet.)																																					

SOIL

Sampling Point: 2B (Upland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 11	10YR 2/1	100					Loamy/Clayey	silty clay loam
11 - 20	10YR 4/2	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
								clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbvie State: IL Sampling Point: 3B (Upland)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none
 Slope (%): 0 - 1 Lat: 42.290154 Long: -87.894394 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks: Farmed swale, not wetland	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 0 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 0.0% </u> (A/B)																
1.																					
2.																					
3.																					
4.																					
5.																					
		=Total Cover																			
Sapling/Shrub Stratum (Plot size: <u> </u>)					Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u> 0 </u></td> <td>x 1 = <u> 0 </u></td> </tr> <tr> <td>FACW species <u> 5 </u></td> <td>x 2 = <u> 10 </u></td> </tr> <tr> <td>FAC species <u> 0 </u></td> <td>x 3 = <u> 0 </u></td> </tr> <tr> <td>FACU species <u> 3 </u></td> <td>x 4 = <u> 12 </u></td> </tr> <tr> <td>UPL species <u> 60 </u></td> <td>x 5 = <u> 300 </u></td> </tr> <tr> <td>Column Totals: <u> 68 </u> (A)</td> <td><u> 322 </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u> 4.74 </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u> 0 </u>	x 1 = <u> 0 </u>	FACW species <u> 5 </u>	x 2 = <u> 10 </u>	FAC species <u> 0 </u>	x 3 = <u> 0 </u>	FACU species <u> 3 </u>	x 4 = <u> 12 </u>	UPL species <u> 60 </u>	x 5 = <u> 300 </u>	Column Totals: <u> 68 </u> (A)	<u> 322 </u> (B)	Prevalence Index = B/A = <u> 4.74 </u>	
Total % Cover of:	Multiply by:																				
OBL species <u> 0 </u>	x 1 = <u> 0 </u>																				
FACW species <u> 5 </u>	x 2 = <u> 10 </u>																				
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Column Totals: <u> 68 </u> (A)	<u> 322 </u> (B)																				
Prevalence Index = B/A = <u> 4.74 </u>																					
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4.																					
5.																					
		=Total Cover																			
Herb Stratum (Plot size: <u> </u>)					Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1.	<u>Glycine max</u>	<u>60</u>	<u>Yes</u>	<u>UPL</u>																	
2.	<u>Cyperus esculentus</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3.	<u>Amaranthus retroflexus</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
4.																					
5.																					
6.																					
7.																					
8.																					
9.																					
10.																					
		<u>68</u>	=Total Cover																		
Woody Vine Stratum (Plot size: <u> </u>)																					
1.																					
2.																					
		=Total Cover																			

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

SOIL

Sampling Point: 3B (Upland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 16	10YR 2/1	100					Loamy/Clayey	silty clay loam
16 - 25	10YR 4/1	85	10YR 4/4	15	C	M	Loamy/Clayey	Distinct redox concentrations
								clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbie State: IL Sampling Point: 4A (Wetland 1)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): concave
 Slope (%): 0 - 1 Lat: 42.289716 Long: -87.895293 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		=Total Cover		
Herb Stratum	(Plot size: <u> </u>)			
1. <u>Echinochloa crus-galli</u>		40	Yes	FACW
2. <u>Panicum dichotomiflorum</u>		40	Yes	FACW
3. <u>Symphyotrichum subulatum</u>		10	No	OBL
4. <u>Xanthium strumarium</u>		3	No	FAC
5. <u>Cyperus esculentus</u>		3	No	FACW
6. <u>Solidago sempervirens</u>		3	No	FACW
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
		99 =Total Cover		
Woody Vine Stratum	(Plot size: <u> </u>)			
1. <u> </u>				
2. <u> </u>				
		=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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>10</u>	x 1 = <u>10</u>
FACW species <u>86</u>	x 2 = <u>172</u>
FAC species <u>3</u>	x 3 = <u>9</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>99</u> (A)	<u>191</u> (B)
Prevalence Index = B/A = <u>1.93</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: A (Wetland 1)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 2/1	100					Loamy/Clayey	silty clay loam
12 - 25	10YR 4/1	95	10YR 4/3	5	C	M	Loamy/Clayey	Distinct redox concentrations
								silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbie State: IL Sampling Point: 4B (Upland)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none
 Slope (%): 0 - 1 Lat: 42.289742 Long: -87.895190 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 0 </u> (A) Total Number of Dominant Species Across All Strata: <u> 1 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 0.0% </u> (A/B)																
1. <u> </u>																					
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
5. <u> </u>																					
		=Total Cover																			
Sapling/Shrub Stratum (Plot size: <u> </u>)					Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u> 0 </u></td> <td>x 1 = <u> 0 </u></td> </tr> <tr> <td>FACW species <u> 3 </u></td> <td>x 2 = <u> 6 </u></td> </tr> <tr> <td>FAC species <u> 3 </u></td> <td>x 3 = <u> 9 </u></td> </tr> <tr> <td>FACU species <u> 0 </u></td> <td>x 4 = <u> 0 </u></td> </tr> <tr> <td>UPL species <u> 60 </u></td> <td>x 5 = <u> 300 </u></td> </tr> <tr> <td>Column Totals: <u> 66 </u> (A)</td> <td><u> 315 </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u> 4.77 </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u> 0 </u>	x 1 = <u> 0 </u>	FACW species <u> 3 </u>	x 2 = <u> 6 </u>	FAC species <u> 3 </u>	x 3 = <u> 9 </u>	FACU species <u> 0 </u>	x 4 = <u> 0 </u>	UPL species <u> 60 </u>	x 5 = <u> 300 </u>	Column Totals: <u> 66 </u> (A)	<u> 315 </u> (B)	Prevalence Index = B/A = <u> 4.77 </u>	
Total % Cover of:	Multiply by:																				
OBL species <u> 0 </u>	x 1 = <u> 0 </u>																				
FACW species <u> 3 </u>	x 2 = <u> 6 </u>																				
FAC species <u> 3 </u>	x 3 = <u> 9 </u>																				
FACU species <u> 0 </u>	x 4 = <u> 0 </u>																				
UPL species <u> 60 </u>	x 5 = <u> 300 </u>																				
Column Totals: <u> 66 </u> (A)	<u> 315 </u> (B)																				
Prevalence Index = B/A = <u> 4.77 </u>																					
1. <u> </u>																					
2. <u> </u>																					
3. <u> </u>																					
4. <u> </u>																					
5. <u> </u>																					
		=Total Cover																			
Herb Stratum (Plot size: <u> </u>)					Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Glycine max</u>		60	Yes	UPL																	
2. <u>Cyperus esculentus</u>		3	No	FACW																	
3. <u>Xanthium strumarium</u>		3	No	FAC																	
4. <u> </u>																					
5. <u> </u>																					
6. <u> </u>																					
7. <u> </u>																					
8. <u> </u>																					
9. <u> </u>																					
10. <u> </u>																					
		66 =Total Cover																			
Woody Vine Stratum (Plot size: <u> </u>)					Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
1. <u> </u>																					
2. <u> </u>																					
		=Total Cover																			
Remarks: (Include photo numbers here or on a separate sheet.)																					

SOIL

Sampling Point: 4B (Upland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 2/1	100					Loamy/Clayey	silty clay loam
12 - 25	10YR 4/1	95	10YR 4/3	5	C	M	Loamy/Clayey	Distinct redox concentrations
								silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbie State: IL Sampling Point: 5B (Upland)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none
 Slope (%): 0 - 1 Lat: 42.288785 Long: -87.894650 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1. <u> </u>				
2. <u> </u>				
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
		=Total Cover		
Herb Stratum	(Plot size: <u> </u>)			
1. <u>Glycine max</u>		50	Yes	UPL
2. <u>Xanthium strumarium</u>		50	Yes	FAC
3. <u> </u>				
4. <u> </u>				
5. <u> </u>				
6. <u> </u>				
7. <u> </u>				
8. <u> </u>				
9. <u> </u>				
10. <u> </u>				
		100 =Total Cover		
Woody Vine Stratum	(Plot size: <u> </u>)			
1. <u> </u>				
2. <u> </u>				
		=Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				

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: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>50</u>	x 3 = <u>150</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>50</u>	x 5 = <u>250</u>
Column Totals: <u>100</u> (A)	<u>400</u> (B)
Prevalence Index = B/A = <u>4.00</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: 5B (Upland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 12	10YR 2/1	100					Loamy/Clayey	silty clay loam
12 - 26	10YR 4/1	95	10YR 4/3	5	C	M	Loamy/Clayey	Distinct redox concentrations
								silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input checked="" type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbie State: IL Sampling Point: 6B (Upland)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none
 Slope (%): 0 - 1 Lat: 42.290501 Long: -87.894870 Datum: n/a
 Soil Map Unit Name: Wauconda and Frankfort silt loams, 0 to 2% slopes (981A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Herb Stratum	(Plot size: <u> </u>)			
1.	<u>Glycine max</u>	<u>70</u>	<u>Yes</u>	<u>UPL</u>
2.	<u>Abutilon theophrasti</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>72</u> =Total Cover		
Woody Vine Stratum	(Plot size: <u> </u>)			
1.				
2.				
		=Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>2</u>	x 4 = <u>8</u>
UPL species <u>70</u>	x 5 = <u>350</u>
Column Totals: <u>72</u> (A)	<u>358</u> (B)
Prevalence Index = B/A = <u>4.97</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: 6B (Upland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 16	10YR 2/1	100					Loamy/Clayey	silty clay loam
16 - 25	10YR 4/2	100					Loamy/Clayey	silt loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbie State: IL Sampling Point: 7A (Wetland 2)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): 0 - 1 Lat: 42.290568 Long: -87.894372 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
 Are Vegetation _____, Soil _____, or 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 <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: _____)			
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
		=Total Cover		
Herb Stratum	(Plot size: _____)			
1.	<u>Typha angustifolia</u>	<u>60</u>	<u>Yes</u>	<u>OBL</u>
2.	<u>Solidago sempervirens</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>
3.	<u>Panicum dichotomiflorum</u>	<u>20</u>	<u>No</u>	<u>FACW</u>
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
		<u>140</u>	=Total Cover	
Woody Vine Stratum	(Plot size: _____)			
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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>60</u>	x 1 = <u>60</u>
FACW species <u>80</u>	x 2 = <u>160</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>140</u> (A)	<u>220</u> (B)
Prevalence Index = B/A = <u>1.57</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: 'A (Wetland 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 10	10YR 2/1	85	10YR 4/4	15	C	PL	Loamy/Clayey	Distinct redox concentrations
								silty clay loam
10 - 25	10YR 5/1	75	10YR 6/8	25	C	M	Loamy/Clayey	Prominent redox concentrations
								clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input checked="" type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input checked="" type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): 0 (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 13415 Atkinson Road Property City/County: Uninc.Lake Bluff / Lake Sampling Date: 9/26/2019
 Applicant/Owner: Abbie State: IL Sampling Point: 7B (Upland)
 Investigator(s): Paul Bollinger (BEI) Section, Township, Range: SE 1/4 Sec. 13, T 44N, R 11E, east of the 3rd P.M.
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none
 Slope (%): 0 - 1 Lat: 42.290566 Long: -87.894410 Datum: n/a
 Soil Map Unit Name: Montgomery silty clay loam, 0 to 2% slopes (465A) NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes x No
 Are Vegetation , Soil , or 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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum	(Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Sapling/Shrub Stratum	(Plot size: <u> </u>)			
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
Herb Stratum	(Plot size: <u> </u>)			
1.	<u>Glycine max</u>	<u>70</u>	<u>Yes</u>	<u>UPL</u>
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>70</u> =Total Cover		
Woody Vine Stratum	(Plot size: <u> </u>)			
1.				
2.				
		=Total Cover		
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u> 0 </u>	x 1 = <u> 0 </u>
FACW species <u> 0 </u>	x 2 = <u> 0 </u>
FAC species <u> 0 </u>	x 3 = <u> 0 </u>
FACU species <u> 0 </u>	x 4 = <u> 0 </u>
UPL species <u> 70 </u>	x 5 = <u> 350 </u>
Column Totals: <u> 70 </u> (A)	<u> 350 </u> (B)
Prevalence Index = B/A = <u> 5.00 </u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes No X

SOIL

Sampling Point: 7B (Upland)

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 11	10YR 2/1	100					Loamy/Clayey	silty clay loam
11 - 20	10YR 4/2	85	10YR 4/3	15	C	M	Loamy/Clayey	Faint redox concentrations
								silty clay

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

SITE: 13415 Atkinson Road Property
LOCALE: Wetland 1
BY: Paul Bollinger (BE1)
NOTES: 9/26/2019

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	0.30	SPECIES RICHNESS (ALL)	16
MEAN C (ALL SPECIES)	0.19	SPECIES RICHNESS (NATIVE)	10
MEAN C (NATIVE TREES)	0.00	% NON-NATIVE	0.38
MEAN C (NATIVE SHRUBS)	n/a	WET INDICATOR (ALL)	-0.38
MEAN C (NATIVE HERBACEOUS)	0.33	WET INDICATOR (NATIVE)	-0.30
FQAI (NATIVE SPECIES)	0.95	% HYDROPHYTE (MIDWEST)	0.75
FQAI (ALL SPECIES)	0.75	% NATIVE PERENNIAL	0.25
ADJUSTED FQAI	2.37	% NATIVE ANNUAL	0.38
% C VALUE 0	0.94	% ANNUAL	0.56
% C VALUE 1-3	0.06	% PERENNIAL	0.44
% C VALUE 4-6	0.00		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	MIDWEST			HABIT	DURATION	NATIVITY
				C VALUE	WET INDICATOR	NC-NE WET INDICATOR			
amaret	Amaranthus retroflexus	AMARANTHUS RETROFLEXUS	Red-Root	0	FACU	FACU	1	Forb	Annual Adventive
ambart	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial Native
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial Adventive
pancap	Panicum capillare	Panicum capillare	Common Panic Grass	0	FAC	FAC	0	Grass	Annual Native
pandic	Panicum dichotomiflorum	Panicum dichotomiflorum	Fall Panic Grass	0	FACW	FACW	-1	Grass	Annual Native
polpen	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0	FACW	FACW	-1	Forb	Annual Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial Native
setpum	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual Adventive
solsem	Solidago sempervirens	SOLIDAGO SEMPERVIRENS	Seaside Goldenrod	0	FACW	FACW	-1	Forb	Perennial Adventive
symnov	Symphotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial Native
sympil	Symphotrichum pilosum	Aster pilosus	White Oldfield American-Aster	0	FACU	FACU	1	Forb	Perennial Native
symsub	Symphotrichum subulatum	ASTER SUBULATUS	Seaside American-Aster	0	OBL	FACW	-2	Forb	Annual Adventive
trirep	Trifolium repens	TRIFOLIUM REPENS	White Clover	0	FACU	FACU	1	Forb	Perennial Adventive
xanstr	Xanthium strumarium	Xanthium strumarium var. canadense; Xanthium strumarium var. glabratum	Rough Cocklebur	0	FAC	FAC	0	Forb	Annual Native

SITE: 13415 Atkinson Road Property
LOCALE: Wetland 2
BY: Paul Bollinger (BE1)
NOTES: 9/26/2019

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	1.09	SPECIES RICHNESS (ALL)	18
MEAN C (ALL SPECIES)	0.67	SPECIES RICHNESS (NATIVE)	11
MEAN C (NATIVE TREES)	n/a	% NON-NATIVE	0.39
MEAN C (NATIVE SHRUBS)	1.50	WET INDICATOR (ALL)	-0.67
MEAN C (NATIVE HERBACEOUS)	1.00	WET INDICATOR (NATIVE)	-0.82
FQAI (NATIVE SPECIES)	3.62	% HYDROPHYTE (MIDWEST)	0.89
FQAI (ALL SPECIES)	2.83	% NATIVE PERENNIAL	0.28
ADJUSTED FQAI	8.53	% NATIVE ANNUAL	0.33
% C VALUE 0	0.72	% ANNUAL	0.39
% C VALUE 1-3	0.28	% PERENNIAL	0.56
% C VALUE 4-6	0.00		
% C VALUE 7-10	0.00		

SPECIES ACRONYM	SPECIES NAME (NWPL/ MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	MIDWEST		WET		HABIT	DURATION	NATIVITY
				C VALUE	WET INDICATOR	NC-NE WET INDICATOR	(NUMERIC)			
agrglg	Agrostis gigantea	AGROSTIS ALBA	Black Bent	0	FACW	FACW	-1	Grass	Perennial	Adventive
ambart	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1	Forb	Annual	Native
ascinc	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	3	OBL	OBL	-2	Forb	Perennial	Native
bidcom	Bidens tripartita	Bidens comosa; Bidens connata	Three-Lobe Beggarticks	3	OBL	FACW	-2	Forb	Annual	Native
corrac	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0	Shrub	Perennial	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW	-1	Sedge	Perennial	Native
daucar	Daucus carota	DAUCUS CAROTA	Queen Anne's Lace	0	UPL	UPL	2	Forb	Biennial	Adventive
echcru	Echinochloa crus-galli	Echinochloa crusgalli	Large Barnyard Grass	0	FACW	FAC	-1	Grass	Annual	Native
pandic	Panicum dichotomiflorum	Panicum dichotomiflorum	Fall Panic Grass	0	FACW	FACW	-1	Grass	Annual	Native
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
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
setpum	Setaria pumila	SETARIA GLAUCA	Yellow Bristle Grass	0	FAC	FAC	0	Grass	Annual	Adventive
solsem	Solidago sempervirens	SOLIDAGO SEMPERVIRENS	Seaside Goldenrod	0	FACW	FACW	-1	Forb	Perennial	Adventive
symnov	Symphotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
typang	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
xanstr	Xanthium strumarium	Xanthium strumarium var. canadense; Xanthium strumarium var. glabratum	Rough Cocklebur	0	FAC	FAC	0	Forb	Annual	Native

APPENDIX D

FARMED WETLAND AERIALS

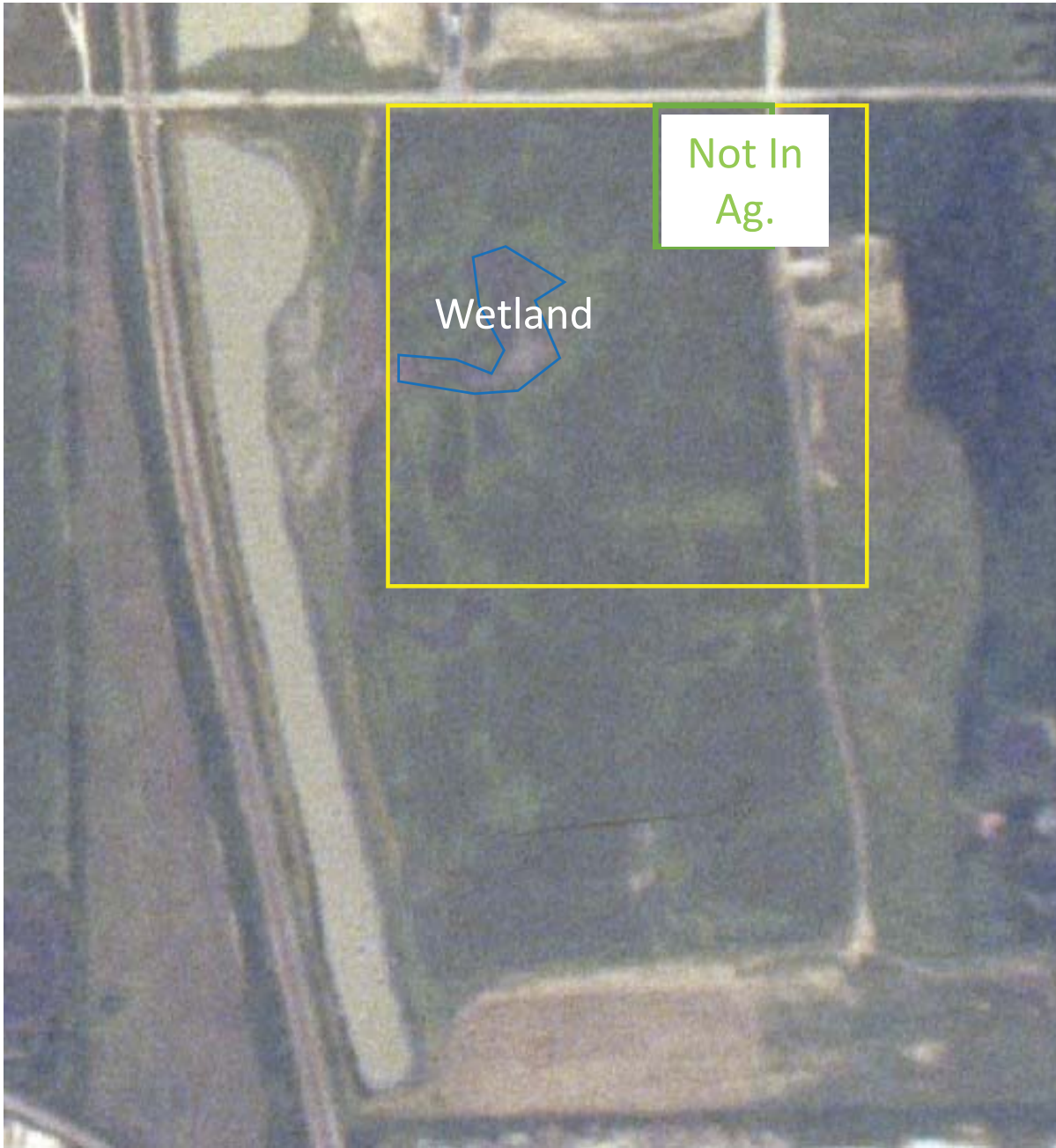
2001



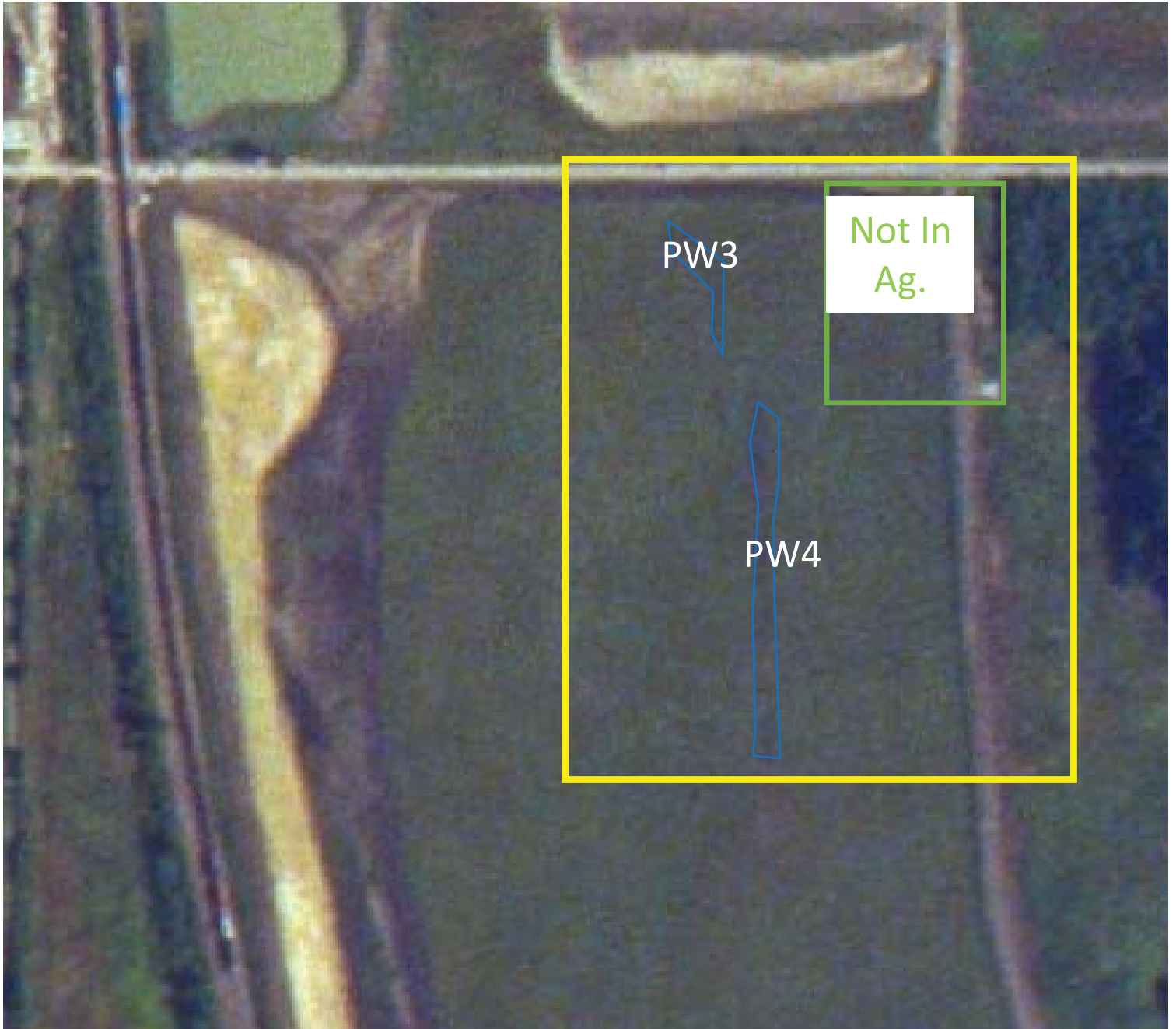
1997



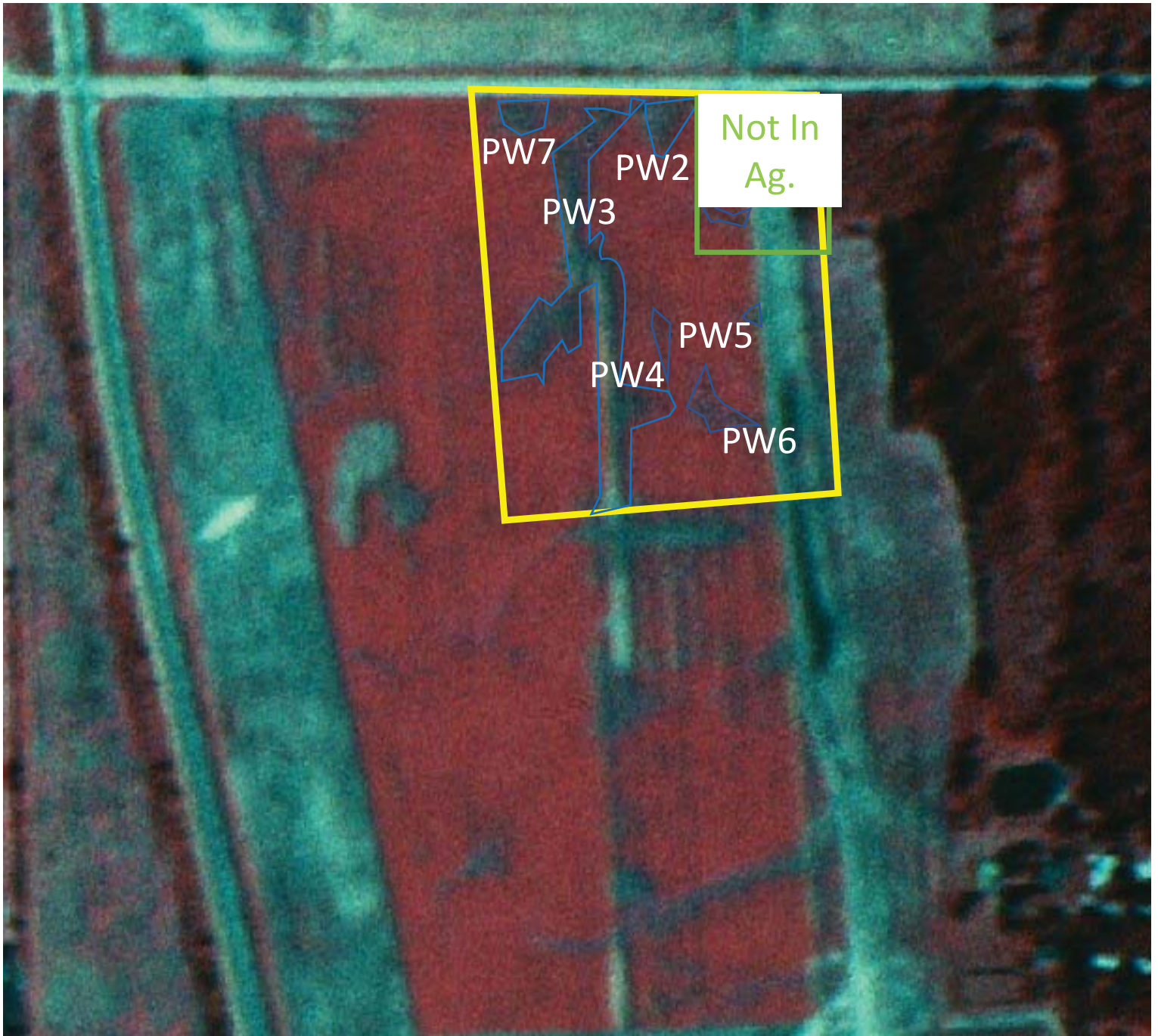
1993



1991



1990



2000-Wet Year





Classification / Use

<input checked="" type="checkbox"/> Heliport/Helistop <input type="checkbox"/> Public <input checked="" type="checkbox"/> Private	<input type="checkbox"/> Vertiport/Vertistop <input type="checkbox"/> Public <input type="checkbox"/> Private	<input type="checkbox"/> RLA Heliport/Helistop	<input type="checkbox"/> Hospital Heliport
---	---	--	--

Applicant

Facility Name (if different than applicant)

- Name AbbVie Inc
Address [REDACTED]
City/State/Zip North Chicago IL 60064
Phone [REDACTED]
- Owner of Land Abbott Laboratories (AbbVie will be leaseholder)
Name Abbott Laboratories
Address [REDACTED]
City/State/Zip Abbott Park IL 60064
Phone [REDACTED]
- Legal Description (Township, Range & 1/4 Section) 13397 Atkinson Rd, Un-incorp. Lake County, Libertyville Township
Range: 11E

Section: 13 Mer:3 in Lake County, Illinois
Latitude 41.17.22N Longitude 87.53.38W Elevation 699 Ft
- Distance & Direction from Nearest City/Town North Chicago Miles 3.2 Miles NE Direction
- Local Zoning Body Name Lake County Planning, Building and Development Department
Address 500 W. Winchester Road
City/State/Zip Libertyville IL 60048
Phone [REDACTED] Fax [REDACTED]

Local zoning approved? ☐ Yes ☒ No Explain Application for Conditional Use Permit in Process
- Indicate proposed number and type of based aircraft Qty 1 - Model Sikorsky S76D
- General Features
FATO 100 x 100 TLOF 75 x 75 Location Rooftop Surface N/A
- Local general circulation newspaper for legal publications
Name Daily Herald
Address [REDACTED]
City/State/Zip [REDACTED] IL 60005
Phone [REDACTED]

9. Obstructions to be removed

Type None

Directions N/A

Distance / Height N/A

10. Work to be done prior to issuance of certificate Possible Electrical and Utility Infrastructure

Certification: I hereby certify that the information herein is true and complete.



9/13/2019

Date

This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Paragraph 42 of the Illinois Aeronautics Act. Disclosure of this information is VOLUNTARY; however, failure to comply may result in this form not being processed.

The original signed copy of this form must be submitted to the Illinois Department of Transportation, Division of Aeronautics, 1 Langhorne Bond Drive, Springfield, IL 62707-8415, Attn: Aviation Safety. To expedite processing, this completed signed form may be scanned and e-mailed to DOT.aero@illinois.gov or faxed to 217/785-4533.



Illinois Department of Transportation

Office of Intermodal Project Implementation / Division of Aeronautics
1 Langhorne Bond Drive / Springfield, Illinois 62707-8415

October 18, 2019

Russ Garich, VP Central Services
[REDACTED]

Dear Mr. Garich:

A State inspection was conducted by Roger Finnell at your proposed private-use heliport site on August 27, 2019, - based on a change to a Sikorsky S-76 design aircraft. In addition, we are in receipt of your submitted AER 2060 for this proposal which was dated September 13, 2019.

Based on what was observed during the inspection, it appears the facility will meet minimum State standards for a Private Heliport as long as the following are complied with:

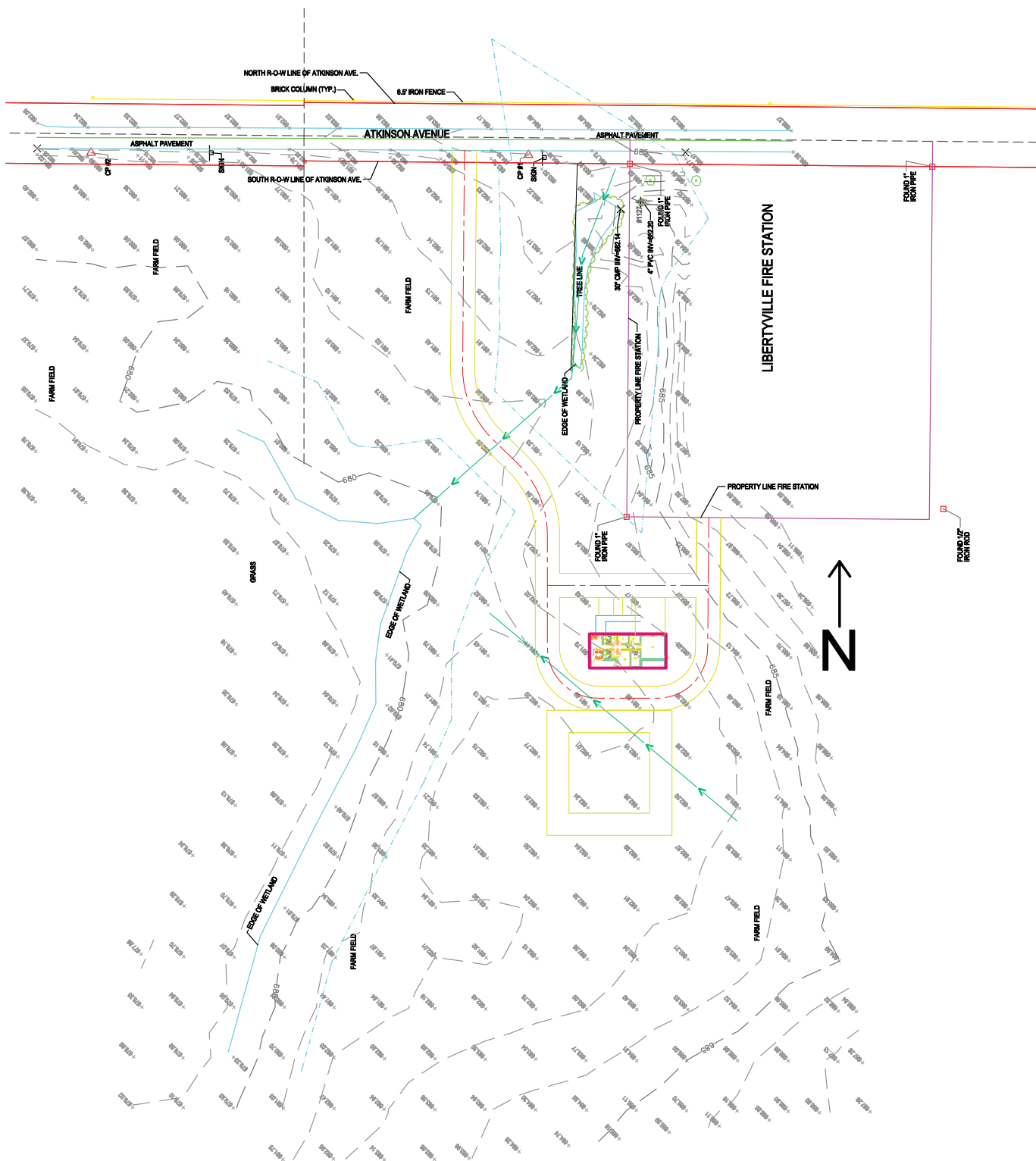
- The appropriate zoning is obtained from your local zoning authority. Please provide our office with proof of zoning once it is received. If there are any delays with obtaining zoning approval, please notify us as soon as possible.
- The heliport is built as specified on the submitted documentation.
- A favorable airspace determination is received from the Federal Aviation Administration (FAA).

Our office has submitted Form 7480-1: Notice of Landing Area Proposal to the FAA to initiate the airspace review process on your behalf. We will notify you in writing once an airspace determination is received.

Please contact [REDACTED] or e-mail him at [REDACTED] with any questions or if we can provide further assistance.

Sincerely,
[REDACTED]

Linda K. Schumm
Bureau Chief Aviation Safety and Education



**McHENRY-LAKE COUNTY
SOIL & WATER
CONSERVATION DISTRICT**



1648 S. Eastwood Dr. Woodstock, Illinois 60098 (815) 338-0444 ext. 3 www.mchenryswcd.org

November 13, 2019

Russell Garich



Re: Parcel # 11-13-400-017

Common Location: Undefined

NRI# L19-052-4255

Zoning Change: Conditional Use Permit for Helipad

Dear Mr. Garich:

The McHenry-Lake County Soil and Water Conservation District has carefully reviewed your application for Natural Resource Information Report on the Russell Garich (Abbvie Helipad) property as applied for in Report #19-052-4255. The SWCD finds that impact to natural resources from the proposed use is minimal for the purposes of the NRI report. A full Natural Resource Information Report will not be necessary, although we would caution the following about the parcel:

- 1) The entire site is comprised of hydric soil 465A and soil 981A, which contains hydric soil inclusions. Both soils may require special planning for future construction activities due to their depth to saturation zone, shrink-swell properties, ponding and low strength (see Figure 1).
- 2) Although the Lake County Wetland Inventory indicates wetlands are present on the parcel, the Resource Protection Plan (Sheet G-081), dated Nov. 1, 2019, indicates these wetland areas will be avoided and adequate buffers will be provided.
- 3) The Flood of Record Map (Hydrologic Atlas) indicates a portion of the site has previously flooded (see Figure 2). The Resource Protection Plan (Sheet G-081), dated Nov. 1, 2019, indicates a small portion of this area will be impacted by the proposed driveway. The proposed plan appears to keep the disturbance of this flood area to a minimum. The District does not recommend filling and/or excavating within a floodplain as it creates a potential flooding hazard to the development itself as well as the surrounding areas.

This letter fulfills your requirement to notify the SWCD of land use changes as per the Illinois Compiled State Statutes, Chapter 70, Par. 405/1 et seq. Illinois Revised Statutes, Ch. 5, Par 106 et seq. Consultation in this matter is considered by the District to be terminated. The District does reserve the right to re-open consultation should new information be brought to our attention. If you have any questions concerning this letter, feel free to call our office.

Sincerely,



Spring M. Duffey
Resource Analyst

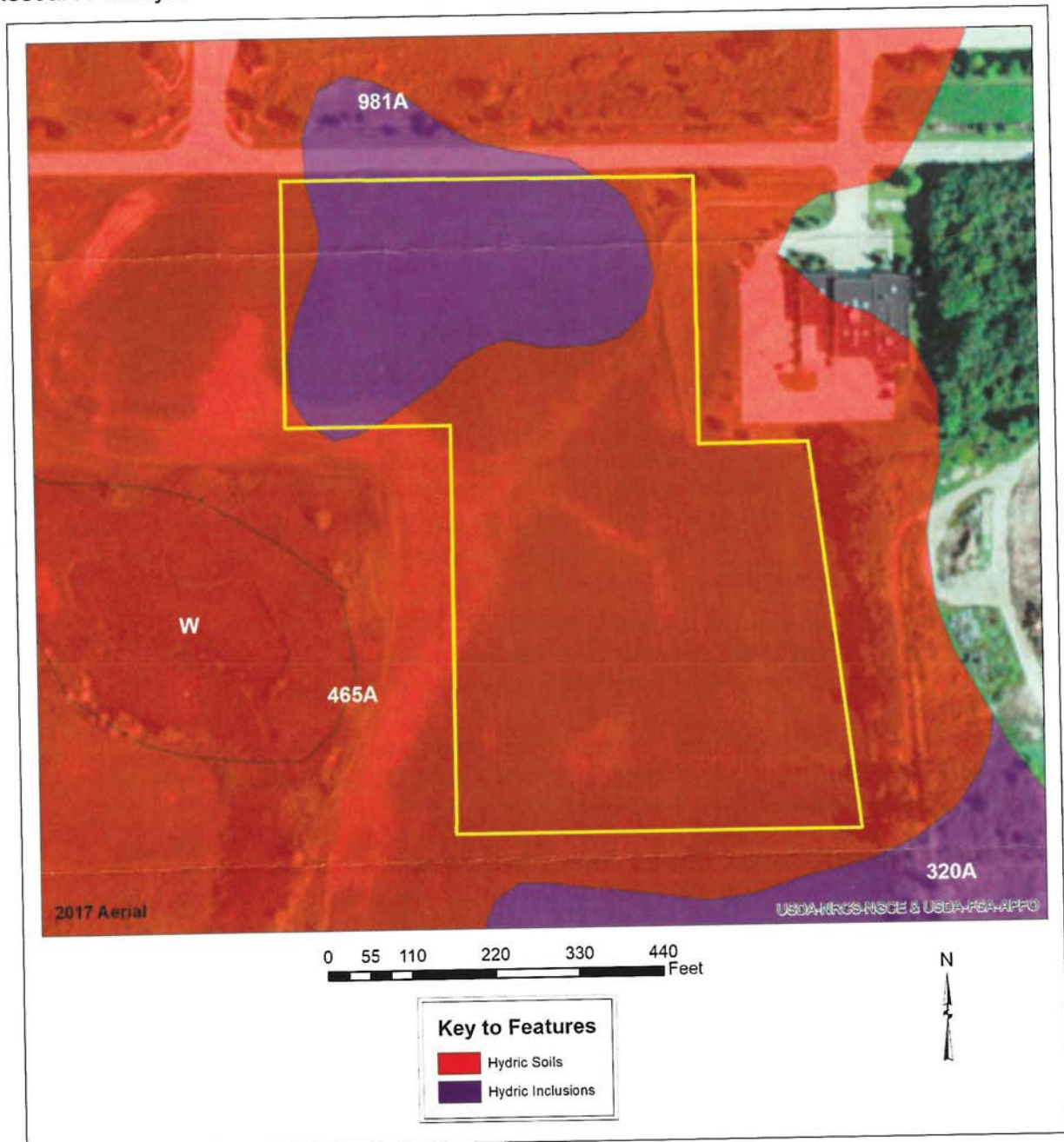


Figure 1

Resources for the Future

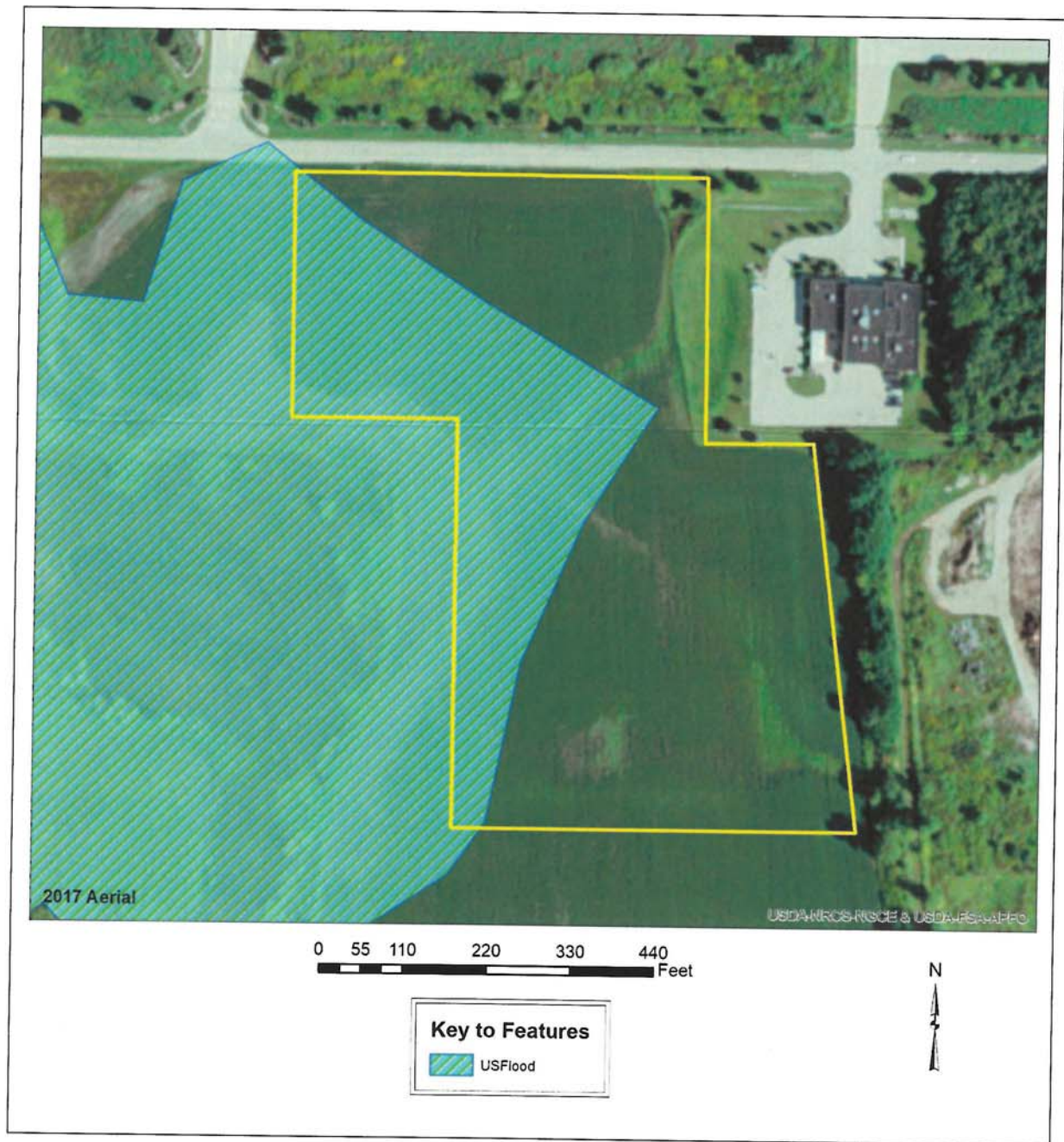


Figure 2

Resources for the Future

Applicant: Bollinger Environmental, Inc.
Contact: [REDACTED]
Address: [REDACTED]

IDNR Project Number: 2003367
Date: 10/03/2019
Alternate Number: [REDACTED]

Project: 13415 Atkinson Site
Address: 13415 Atkinson Rd, Lake Bluff

Description: Construction of a helipad and associated infrastructure including small building, parking, and driveway

Natural Resource Review Results

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

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

Middle Fork Savanna INAI Site
Oak Grove Botanical Area INAI Site
Middlefork Savanna Nature Preserve
Iowa Darter (*Etheostoma exile*)
Northern Long-Eared Myotis (*Myotis septentrionalis*)

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

Location

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

County: Lake

Township, Range, Section:
44N, 11E, 13



IL Department of Natural Resources

Contact

Brian Willard

[REDACTED]
Division of Ecosystems & Environment

Government Jurisdiction

IL Environmental Protection Agency
Terri LeMasters

[REDACTED]
[REDACTED]

Disclaimer

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

Terms of Use

By using this website, you acknowledge that you have read and agree to these terms. These terms may be revised by IDNR as necessary. If you continue to use the EcoCAT application after we post changes to these terms, it will mean that you accept such changes. If at any time you do not accept the Terms of Use, you may not continue to use the website.

1. The IDNR EcoCAT website was developed so that units of local government, state agencies and the public could request information or begin natural resource consultations on-line for the Illinois Endangered Species Protection Act, Illinois Natural Areas Preservation Act, and Illinois Interagency Wetland Policy Act. EcoCAT uses databases, Geographic Information System mapping, and a set of programmed decision rules to determine if proposed actions are in the vicinity of protected natural resources. By indicating your agreement to the Terms of Use for this application, you warrant that you will not use this web site for any other purpose.

2. Unauthorized attempts to upload, download, or change information on this website are strictly prohibited and may be punishable under the Computer Fraud and Abuse Act of 1986 and/or the National Information Infrastructure Protection Act.

3. IDNR reserves the right to enhance, modify, alter, or suspend the website at any time without notice, or to terminate or restrict access.

Security

EcoCAT operates on a state of Illinois computer system. We may use software to monitor traffic and to identify unauthorized attempts to upload, download, or change information, to cause harm or otherwise to damage this site. Unauthorized attempts to upload, download, or change information on this server is strictly prohibited by law.

Unauthorized use, tampering with or modification of this system, including supporting hardware or software, may subject the violator to criminal and civil penalties. In the event of unauthorized intrusion, all relevant information regarding possible violation of law may be provided to law enforcement officials.

Privacy

EcoCAT generates a public record subject to disclosure under the Freedom of Information Act. Otherwise, IDNR uses the information submitted to EcoCAT solely for internal tracking purposes.



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
<http://dnr.state.il.us>

JB Pritzker, Governor

Colleen Callahan, Director

October 07, 2019

Valerie Jakobi
Bollinger Environmental, Inc.



RE: 13415 Atkinson Site
Project Number(s): 2003367 [211-001-19]
County: Lake

Dear Applicant:

This letter is in reference to the project you recently submitted for consultation. The natural resource review provided by EcoCAT identified protected resources that may be in the vicinity of the proposed action. The Department has evaluated this information and concluded that adverse effects are unlikely. Therefore, consultation under 17 Ill. Adm. Code Part 1075 is terminated.

This consultation is valid for two years unless new information becomes available that was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the project 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 site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, you must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action.

Please contact me if you have questions regarding this review.



Kyle Burkwald
Division of Ecosystems and Environment



GROUND LEASE AGREEMENT
BY AND BETWEEN
ATKINSON NORTH CHICAGO LLC
AND
ABBVIE AVIATION LLC
DATED AS OF JULY 27, 2020

GROUND LEASE AGREEMENT

THIS GROUND LEASE AGREEMENT (this "Lease") is made as of July 27, 2020, by and between ATKINSON NORTH CHICAGO LLC, an Illinois limited liability company ("Landlord"), and ABBVIE AVIATION LLC, an Illinois limited liability company ("Tenant"). Landlord and Tenant are sometimes collectively referred to herein as the "Parties" or individually as "Party".

WITNESSETH:

In consideration of Ten and 00/100 Dollars (\$10.00), other good and valuable consideration, the receipt, adequacy and sufficiency of which are hereby acknowledged by Landlord and Tenant, Landlord and Tenant agree as follows:

Section 1. Commencement Date; Occupancy. Landlord and Tenant agree to the following critical dates under this Lease:

- (a) Commencement Date. The "Commencement Date" is July 27, 2020.

Section 2. Premises; Landlord's Parcel. Upon the Commencement Date, Landlord hereby leases to Tenant, and Tenant leases from Landlord, on the terms and conditions of this Lease, certain unimproved real property containing approximately ten (10) acres, consisting of a portion of the land formerly known as the Jennett Property, located on Atkinson Road, east of Interstate 94 and west of Illinois Route 43, Lake County, Illinois (the "Land"), which land is depicted on Exhibit A, together with any and all appurtenances, rights, privileges and easements benefiting, belonging or pertaining to the Land (collectively, the "Premises"). If Tenant at any time obtains a survey of the Land, then Tenant and Landlord agree to amend this Lease by substituting a description of the Land based upon such survey in place of the description attached as Exhibit A. Except as otherwise expressly provided herein, Tenant is accepting the Land in its "as-is" condition, without any representation or warranty and Tenant understands and agrees that, except as expressly provided for herein, Landlord IS NOT MAKING ANY REPRESENTATIONS OR GRANTING ANY WARRANTIES, EXPRESS OR IMPLIED, EITHER BY FACT OR BY OPERATION OF LAW, BY STATUTE OR OTHERWISE. TENANT SPECIFICALLY DISCLAIMS ANY OTHER WARRANTIES, WHETHER WRITTEN OR ORAL, OR EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF QUALITY, MERCHANTABILITY, OR FITNESS FOR A PARTICULAR USE OR PURPOSE. Tenant acknowledges and agrees that Landlord shall not be responsible for any improvements to the Land.

Landlord grants to Tenant, for the Term of this Lease, the following rights and easements over the real estate surrounding the Land owned by Landlord or an affiliate thereof (the "Landlord's Parcel"), which Landlord's Parcel is described or depicted on Exhibit A:

- (a) General access and utility easements, including the right to construct, tie into, maintain, repair and replace all utility facilities that are necessary for the Permitted Use (as hereinafter defined), including storm and surface water drainage and detention facilities, together with the right of storm and surface water drainage from the Land on the Landlord's Parcel;

- (b) A general temporary construction easement over the Landlord's Parcel for Tenant's initial development of the Land;

- (c) The right to use the airspace above the Landlord's Parcel for the passage of helicopters, together with the right to cause in said airspace such noise as may be inherent in the operation of helicopters, using said airspace for landing at, taking off from, and operating on the Land; and

- (d) The right to use the Landlord's Parcel for the Permitted Use specified in Section 6 hereof.

Landlord agrees that the Landlord's Parcel is subject to the following restrictive covenants for the Term of this Lease: Landlord shall not knowingly permit any activities to be conducted on any portion of the Landlord's Parcel which would constitute a hazard or obstruction to aircraft using the Premises or would otherwise cause the operation of the Premises for the Permitted Use to be in non-compliance with any laws, rules or regulations applicable to the Permitted Use or the Premises (including, without limitation, any rules and regulations issued by the Federal Aviation Administration and the Transportation Security Administration). Landlord agrees that the easements, rights, covenants and restrictions will run with the title to the Land and the Landlord's Parcel for the Term of this Lease. Landlord acknowledges that Tenant is relying upon the restrictive covenants in this Section 2 in executing this Lease.

Section 3. Term.

(a) The initial term of this Lease (the "Original Term") will commence on the Commencement Date and will expire on the Termination Date, as defined in the Abbott Park Lease Agreement, by and between Abbott Laboratories and AbbVie Inc., dated December 31, 2012 (the "Abbott Park Lease"). Landlord will deliver to Tenant full and exclusive possession of the Land on the Commencement Date. "Lease Year" shall mean each consecutive period of twelve (12) full calendar months, following the Commencement Date.

(b) Tenant shall have the option to renew this Lease for one (1) additional ten (10)-year period (the "First Option to Renew") and two (2) additional five (5)-year periods (each, a "Subsequent Option to Renew") (each period referred to herein as a "Renewal Term"). Tenant must exercise the option to renew this Lease by notice to Landlord no later than one (1) year prior to the expiration of the then-current Term. Tenant shall not have the right to exercise any Subsequent Option to Renew if Tenant has not first exercised its First Option to Renew and Tenant shall not have a second Subsequent Option to Renew if Tenant did not exercise its first Subsequent Option to Renew. Notwithstanding anything to the contrary contained herein, in the event Tenant exercises the First Option To Renew or any Subsequent Option to Renew (as such terms are defined in the Abbott Park Lease Agreement dated December 31, 2012, by and between Abbott Laboratories and AbbVie Inc., (the "Abbott Park Lease")) or otherwise renews or extends the term of that Abbot Park Lease, then this Lease shall be deemed to be automatically renewed for the same term as the intent of Landlord and Tenant is for the Term of this Lease to be coterminous with the Abbott Park Lease, unless, however, Tenant provides written notice to Landlord that Tenant does not intend to exercise its right to such renewal or extension for this Lease in connection with the Abbott Park Lease. Further, in the event Tenant fails to exercise the First Option To Renew or any Subsequent Option to Renew (as such terms are defined in the Abbott Park Lease) or otherwise fails to renew or extend the term of that Abbot Park Lease, Tenant shall not have the right to extend this Lease, notwithstanding anything to the contrary set forth herein. The Original Term and any Renewal Term, if applicable, are referred to herein collectively as the "Term."

Section 4. Rent.

(a) Commencing on the Commencement Date and continuing through the Term, Tenant shall pay rent ("Base Rent") to Landlord [REDACTED]. Base Rent shall be paid to Landlord by Tenant in annual installments in advance no later than September 30 of each Lease Year (and the first annual installment shall be paid no later than September 30, 2020) in lawful money of the United States of America without notice or demand at the original or changed address of Landlord as set forth in Section 21 or to such other persons or at such other addresses as Landlord may designate from time to time in writing to Tenant. If the Commencement Date or termination or

expiration date of this Lease is other than the first day of a month, Tenant shall be required to pay a pro rata portion of the monthly installment of Base Rent for any partial month.

(b) Except as otherwise expressly provided in this Lease, all Base Rent, together with any other sum required to be paid by Tenant pursuant to this Lease (which sums are collectively referred to herein as “**Rent**”), shall be paid when due, without demand, deduction, offset or discount and all in lawful money of the United States. The payment of Rent hereunder is an independent covenant of each and every other covenant and agreement contained in this Lease and Tenant shall pay Rent due hereunder without notice, demand, deduction, abatement or setoff, in lawful U.S. currency.

(c) Tenant shall be responsible for the payment of [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

(d) Other than Tenant’s obligations to pay [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Section 5. Utility Expenses.

(a) Tenant will also pay all charges for sewer, water, gas, electricity, and other services furnished to the Premises during the Term of this Lease, including any tap-in, connection and metering fees which may be charged by the applicable utility supplier.

(b) Landlord will be responsible for the payment of all impact fees, traffic or trip fees, development fees, utility capacity or other similar type fees or assessments imposed by any governmental authority with respect to the development of the Landlord’s Parcel but excluding any such fees related to the development and construction of the Land by Tenant.

Section 6. Use of Premises.

(a) Tenant may use the Premises for the operation of a private heliport (specifically limited to the use, construction and maintenance of the heliport, including support buildings, indoor and outdoor car parking improvements, and other necessary infrastructure, take-off and landing of helicopters, and any necessary maintenance, storage, and fueling of the helicopter) and specifically excluding the routine fueling of helicopters, routine storage of helicopters, and routine maintenance of helicopters) (the “**Permitted Use**”), in each case, subject to Tenant’s compliance with all laws, ordinances, and regulations of the federal, state, and county governments and of all other governmental authorities affecting Tenant’s use and occupation of the Premises. Notwithstanding anything to the contrary contained in the foregoing or in Section 10, Tenant may permit governmental and quasi-governmental authorities to use the Premises for the Permitted Use for temporary situations serving public needs. Tenant may not charge fees or collect rent from third parties for use of the heliport.

(b) Landlord acknowledges that Tenant has the right at any time during the Term to investigate and plan for the use and development of the Land. After the Commencement Date (or earlier if approved by Landlord), Tenant may make tests related to surface, subsurface, topographic and environmental conditions of the Land. Tenant will promptly deliver to Landlord copies of any reports, communications, materials, information and other documents related to such tests. Landlord will deliver to Tenant, within five (5) business days after the Commencement Date, true and complete copies of all due diligence materials related to the Land in the possession or control of Landlord. The materials will include, but are not limited to, environmental and soils reports, prior inspection reports, prior title policies, title exceptions, and surveys.

(c) Landlord will cooperate with Tenant, at no out of pocket cost to Landlord, in Tenant's efforts to obtain any and all permits and approvals from governmental and quasi-governmental authorities (including, without limitation, the County of Lake, the Federal Aviation Administration and/or the Transportation Security Administration) deemed necessary or appropriate by Tenant for the development and operation of the Land for the Permitted Use.

Section 7. Improvements, Repairs, Additions, Replacements: Liens.

(a) Subject to compliance with all applicable legal requirements, Tenant may at any time construct, remove, replace and alter the buildings and other improvements on or under the Land as Tenant, in its commercially reasonable discretion, determines are desirable for conducting the Permitted Use. All of Tenant's construction and improvements will comply with all applicable building codes and ordinances and shall be performed in a good and workmanlike manner.

(b) Tenant will, at all times and at its own cost and expense, maintain the entirety of the Land (and all buildings, improvements, and roadways located thereon), and any utility lines and facilities exclusively serving the Land in good condition and repair.

(c) Tenant will, at its own cost and expense, be responsible for the prompt removal of snow and ice from any roadways located from time to time on the Land.

(d) Until the expiration or termination of this Lease, title to the building and improvements constructed by Tenant will remain solely in Tenant; and Tenant alone will be entitled to deduct all depreciation on Tenant's income tax returns. All personal property, fixtures, equipment and inventory will at all times be owned solely by Tenant. Landlord hereby waives any statutory lien on Tenant's personal property, fixtures, equipment and inventory.

(e) On the expiration or termination of this Lease, Tenant will surrender the Premises and the existing building and improvements (subject to Section 15) and will remove all of Tenant's personal property. If Tenant fails to remove any personal property, Tenant will be deemed to have abandoned the same. At Landlord's option, Tenant shall cause all buildings and improvements to be razed and the Land to be restored to its original condition (i.e., its condition as of the date of this Lease) within ninety (90) days after the expiration or termination of this Lease.

(f) During the Term of this Lease, Tenant will, at its own cost and expense, promptly observe and comply with all laws, ordinances, and regulations of the federal, state, and county governments and of all other governmental authorities affecting Tenant's use and occupation of the Premises. The foregoing covenant of Tenant will not impose any liability for the presence of Hazardous Substances on the Land beyond the express liability of Tenant set forth in Section 33.

(g) Tenant will have the right, at its expense, to contest in the name of the Tenant or Landlord (as legally required) the validity or application of any law, ordinance or regulation. If compliance may be

legally delayed pending the prosecution of the proceeding, Tenant may delay compliance until the final determination of the proceeding.

(h) If, because of any work or services performed for Tenant (or any judgment against Tenant), any lien is filed against the interest of Landlord in the Land or the Landlord's Parcel, Tenant will cause the lien to be discharged of record or bonded over within thirty (30) days after written notice from Landlord.

Section 8. Signs. Tenant shall not have the right to install, maintain or replace any signs on the Premises unless required pursuant to applicable law. Tenant will comply with all applicable laws and will obtain any necessary permits for its signs, if any.

Section 9. Utility Easements. To the extent required in connection with Tenant's Permitted Use, Landlord covenants and agrees to execute commercially reasonable easement agreements with utility suppliers and to take all other actions reasonably required in order to effectuate the same.

Section 10. Assignment and Subletting. Except as expressly provided herein, Tenant may not assign its rights (whether by operation or law or otherwise), sublease or otherwise permit other Parties to possess all or any portion of the Premises (each, a "Transfer") without the express prior written consent of Landlord, which consent shall not be unreasonably withheld, conditioned or delayed. The following is a list of circumstances (which is not exclusive) for which it will be deemed reasonable for Landlord to withhold its consent to a proposed Transfer: (A) if the Transfer would change the use of the Land; (B) if the Transfer would create a nuisance at the Land; (C) if the Transfer would violate applicable laws; (D) if the Transfer would violate or void applicable insurance policies or materially increase the cost of Landlord's insurance; (E) if the Transfer would unreasonably obstruct or interfere with the rights of other occupants of the Land, if any; (F) if the Transfer would allow the Premises to be used for any improper, immoral, unlawful or objectionable purpose (as determined by Landlord); (G) if the Transfer would cause any waste (use beyond normal wear and tear consistent with prior use) at the Land; (H) if the Transfer would cause the Premises to be used by more than one party; (I) if Tenant intends to charge a new occupant greater rent per square foot than Tenant pays to Landlord per square foot under this Lease; (J) if the party who will occupy the Land is not creditworthy or financially able to comply with its obligations related to the Land as determined by Landlord; or (K) if the business of the party who will occupy the Land competes against Landlord's business. Notwithstanding the foregoing, Tenant may, without the need for Landlord's consent, but only upon not less than ten (10) days prior notice to Landlord, assign its interest in this Lease (a "Permitted Assignment") to any entity (an "Affiliate") which is a Subsidiary (as defined in the Abbott Park Lease) or parent (or direct or indirect subsidiary of a parent) of AbbVie Inc., only so long as: (A) the transferee assumes all of the obligations of assignor hereunder pursuant to an agreement in form and substance reasonably satisfactory to Landlord; (B) there shall not be any Default of Tenant at the effective date of such assignment; (C) Tenant provides Landlord with documentation which evidences Tenant's compliance with the requirements of this paragraph; (D) the originally named Tenant shall nevertheless remain fully liable under all of the terms, covenants and conditions of this Lease; and (E) such Transfer will not result in a change in the Permitted Use of the Premises.

Section 11. General Indemnity.

(a) Tenant will indemnify and hold Landlord harmless from and against any and all liability, damages, penalties or judgments arising from (i) a breach or default by Tenant of any of the terms and provisions of this Lease, and (ii) injury to person or property sustained by anyone as a result of Tenant engaging in the Permitted Use, except to the extent caused by the negligence or willful misconduct of Landlord or Landlord's agents, employees or contractors.

(b) Landlord will indemnify and hold Tenant harmless from and against any and all liability, damages, penalties or judgments arising from (i) a breach or default by Landlord of any of the terms and provisions of this Lease, and (ii) injury to person or property sustained by anyone on the Land to the extent caused by the negligence or willful misconduct of Landlord or Landlord's agents, employees or contractors.

Section 12. Insurance.

■ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

■ [REDACTED]
[REDACTED]

■ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

■ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

■ [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

Section 13. Waiver of Subrogation. All insurance policies carried by either Party, if any, covering the Premises will expressly waive any right on the part of the insurer against the other Party. As to any loss or damage which may occur and be covered (or required by the terms of this Lease to be covered) under any insurance policy(ies), the Party obligated to carry the insurance hereby releases the other from any amount of liability for such loss or damage. The release includes a release of liability for the full amount of any deductible maintained by a Party under its insurance policy.

Section 14. Destruction. If the buildings and improvements on the Land are destroyed or damaged by fire or other cause within the extended coverage of the casualty insurance required to be carried by Tenant, then Tenant will either elect to (i) cause the improvements to be repaired, replaced or rebuilt to the extent desired by Tenant, or (ii) cause the improvements to be promptly razed and the Land to be restored to its original condition (i.e., its condition as of the date of this Lease) within ninety (90) days of the date of the casualty.

Section 15. Eminent Domain. As used in this Lease, the term "Taking" means the event of vesting of title in an authority with the power of eminent domain pursuant to any action exercising such power, including a voluntary sale to the authority. Landlord will notify Tenant in writing within ten (10) days of Landlord's receipt of notice of any planned or threatened Taking of the Premises. If Tenant does not

terminate this Lease, then the Term of this Lease will not be reduced or affected in any way and Tenant will have no obligation to restore the improvements, but the Base Rent payable under this Lease will be equitably reduced. In the event of any Taking of all or any portion of the Premises, Landlord will be entitled to an award based on the Taking of the fee simple estate in the Land. Tenant will be entitled to an award based on any loss or reduction of its leasehold and easement estates, loss of any building or other improvements pertaining to the realty constructed or placed on the Land by Tenant, loss of any fixtures or equipment, loss or interruption of business and the cost of any alterations, restoration or relocation resulting from any such Taking. Any single award or settlement will be allocated between the Parties in accordance with the foregoing.

Section 16. Early Termination. Notwithstanding anything to the contrary contained in this Lease, Tenant shall have the right to terminate this Lease with thirty (30) days prior written notice to Landlord without any payment or penalty if it is unable to obtain all governmental and regulatory approvals necessary to operate a heliport at this location. Upon termination, to the extent any construction has taken place, Tenant shall cause all buildings and improvements to be razed and the Land to be restored to its original condition (i.e., its condition as of the date of this Lease) within ninety (90) days after the expiration or termination of this Lease.

Section 17. Quiet Enjoyment; Covenants of Landlord Regarding Non-Disturbance; Inspection and Access; Holding Over.

(a) Landlord covenants that Tenant, on paying Rent and performing Tenant's obligations under this Lease, shall peaceably have, hold and enjoy the Premises for the Term without hindrance by or through Landlord or its successors and assigns except as otherwise provided for herein.

(b) Landlord represents to Tenant that there are no mortgage(s), deed(s) of trust, ground or underlying lease(s) and other lien(s) now existing encumbering the Premises as of the Commencement Date. Landlord agrees to obtain from the holder of any mortgage(s), deed(s) of trust, ground or underlying lease(s) to secure debt or other security instrument now or later placed against the Premises, a subordination, non-disturbance and attornment agreement reasonably acceptable to Tenant, which provides that in the event of any foreclosure, sale under power of sale, or transfer in lieu of any of the foregoing pursuant to any such lease or security instrument Tenant's use, possession and enjoyment of the Premises will not be disturbed and this Lease will continue in full force and effect so long as Tenant is not in Default under this Lease.

(c) Landlord shall have the right, upon providing reasonable notice to Tenant (but in no event less than two (2) business days except in the case of an emergency, in which case, no notice shall be required), to access and inspect the Premises or to exercise any right, obligation, or privilege of Landlord under this Lease.

(d) Tenant will, at the termination of this Lease by lapse of time or otherwise (without any notice from Landlord required), yield up immediate possession of the Premises to Landlord in the condition required hereunder. In the event Tenant remains in possession of the Premises or any Party thereof after the expiration of this Lease, without a written lease, Tenant shall be deemed to be occupying the Premises as a tenant-at-sufferance and must comply with all of Tenant's obligations under this Lease insofar as they may be applicable, except as provided in this subparagraph. During the first month of such holding over, Tenant shall pay Base Rent at one hundred fifty percent (150%) the rate payable for the year immediately preceding said holding over computed on a monthly basis for the time Tenant thus remains in possession. After the first month of such holding over, Tenant shall pay Base Rent at two hundred percent (200%) of the rate payable for the year immediately preceding said holding over computed on a monthly basis for the time Tenant thus remains in possession. Tenant shall also pay to Landlord all damages sustained by Landlord

resulting from retention of possession by Tenant after the earlier expiration or earlier termination of this Lease, including the loss of rent from a tenant under written lease for any portion of the Premises. The provisions of this subparagraph shall not constitute a waiver by Landlord of any right of re-entry or right to regain possession by actions at law or in equity or by any other rights hereunder nor shall receipt of any Rent or any other act in apparent affirmance of the tenancy operate as a waiver of the right to terminate this Lease for a breach of any of the terms, covenants, or obligations herein on Tenant's part to be performed.

Section 18. Defaults.

(a) The following events will constitute a default "**Default**" by Tenant under this Lease:

(i) Tenant's failure to pay any installment of Base Rent or any other charges or sums payable to Landlord hereunder when due and the continuance of the failure for a period of ten (10) business days after receipt by Tenant of written notice from Landlord; or

(ii) Tenant's failure to perform any of the other covenants, conditions and agreements in this Lease and the continuance of the failure for a period of thirty (30) days after receipt by Tenant of written notice from Landlord (or such longer period as may be required in order to effect such cure, provided Tenant commences the cure within such 30-day period and diligently prosecutes the cure to completion); or

(iii) The occurrence of a "Default", as such term is defined in the Abbott Park Lease.

If Tenant fails to cure a Default within the cure period specified in this Lease, Landlord may, at its option, (i) provide Tenant with written notice of election to terminate this Lease, (ii) bring suit for the collection of rent as it becomes due without cancellation or termination of this Lease, or (iii) provide Tenant with written notice of election to terminate Tenant's possession of the Premises (without termination of this Lease) on a date specified in the written notice. On terminating this Lease or terminating Tenant's possession of the Premises, Landlord may pursue the remedies set forth in subsection (b) below in addition to all other remedies at law or in equity.

(b) Following any termination of this Lease or Tenant's possession of the Premises, Landlord may re-enter the Premises and recover possession and dispossess all occupants in the manner prescribed by statute relating to summary proceedings or similar statutes.

(c) Landlord will be in default under this Lease if Landlord fails to perform any obligation under this Lease within thirty (30) days after receipt of written notice from Tenant specifying the nature of the default, or such longer period as may be required in order to effect the cure, provided Landlord commences the cure within the thirty (30) day period and diligently prosecutes the cure to completion, or if Landlord breaches, in any material respect, any of the representations or warranties given in this Lease. On the occurrence of Landlord's default, Tenant will have all remedies available at law or in equity. Tenant will have the specific right, but not the obligation, to perform the obligations on Landlord's behalf, and at Landlord's expense, after the expiration of the required notice and cure period. Landlord will reimburse any costs incurred by Tenant within ten (10) days after Landlord's receipt of Tenant's request for reimbursement (which will be accompanied by receipts or other evidence of such expenses). If Landlord fails to do so, then Tenant will have the right to offset the costs against the next installment(s) of basic minimum rent due under this Lease.

Section 19. Remedies Cumulative; No Waiver. Notwithstanding anything in this Lease to the contrary, any and all remedies set forth in this Lease (i) shall be in addition to any and all other remedies either Party may have at law or in equity, (ii) shall be cumulative, and (iii) may be pursued successively or concurrently as either Party may elect against the other Party. The failure of Landlord or Tenant to complain

of any act or omission on the part of the other Party, no matter how long the same continues, will not be deemed to be a waiver by that Party of any of its rights under this Lease. No waiver by Landlord or Tenant at any time, express or implied, of any breach of any provision of this Lease will be deemed a waiver of a breach of any other provision of this Lease or a consent to any subsequent breach.

Section 20. Force Majeure. If Landlord or Tenant is delayed, hindered or prevented from the performance of any act required under this Lease by reason of strikes, lock-outs, labor troubles, inability to procure materials, failure of power, restrictive governmental laws or regulations, riots, terrorist acts, public health concerns not in the control of Tenant that materially interfere with Tenant’s operations at the Premises, insurrection, the act, failure to act or default of the other Party, war or any reason beyond their control, then performance of the act will be excused for the period of the delay and the period for the performance of any such act will be extended for a period equivalent to the period of such delay; provided, that the Commencement Date shall not be extended for any such reason or circumstance. Lack of funds will not be a basis for avoidance or delay of any obligation under this Lease.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Section 22. Estoppel Certificates. Tenant or Landlord shall, at the request of the other Party, at any time and from time to time upon not less than thirty (30) days’ prior notice, furnish to the requesting Party, or any entity designated by the requesting Party, a certificate stating (A) that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease, as so modified, is in full force and effect), (B) that there are not any uncured defaults on the part of such

Party and to such Party's knowledge, on the part of the requesting Party, under this Lease (or specifying such defaults, if any are claimed), and (C) such other matters as the requesting Party may reasonably require or that any prospective lender, investor, purchaser, mortgagee, ground lessor or other Party may reasonably require.

Section 23. Governing Law. This Lease will be governed by the laws of the State of Illinois.

Section 24. Partial Invalidity. If any term of this Lease is, at any time or to any extent, invalid or unenforceable, the remainder of this Lease, or the application of such term or provision to persons or circumstances other than those as to which it is held invalid or unenforceable, will not be affected, and each term, covenant, condition and provision of this Lease will be valid and be enforced to the fullest extent permitted by law.

Section 25. Recording of Lease. The Parties agree not to record this Lease.

Section 26. Debarment. Landlord represents, warrants and covenants that, (a) as of the Commencement Date, neither Landlord nor any Landlord's Personnel is, has ever been, and, to the best of Landlord's knowledge, is the subject of a proceeding that could lead to Landlord or any Landlord's Personnel becoming, as applicable, (i) debarred by the FDA under 21 U.S.C. § 335a, (ii) excluded, debarred, suspended, or otherwise ineligible to participate in the Federal health care programs or in Federal procurement or non-procurement programs, (iii) listed on the FDA's Disqualified and Restricted Lists for clinical investigators, or (iv) convicted of a criminal offense that falls within the scope of 42 U.S.C. § 1320a-7(a), but has not yet been excluded, debarred, suspended, or otherwise declared ineligible; and, (b) during the Term, Landlord shall not engage, directly or indirectly, or permit to remain engaged, any Personnel if that person has ever been, is, or, to the best of Landlord's knowledge, is the subject of a proceeding that could lead to that person becoming, as applicable, any of (i)-(iv) above. In the event that Landlord receives notice of, or otherwise becomes aware of, the debarment, proposed debarment or such other exclusion, suspension, restriction or sanction of itself or any Landlord's Personnel, Landlord shall notify Tenant immediately and Tenant shall have the right to either (A) request, in which case Landlord shall cause, the applicable Landlord's Personnel to immediately be prohibited from performing any further work related to Tenant or (B) immediately terminate this Lease.

Section 27. Interpretation. Wherever the singular number is used, the same will include the plural, and the masculine gender will include the feminine and neuter genders, and vice versa, as the context requires. The section headings are for reference and convenience only, and will not enter into the interpretation of this Lease. The term "Landlord" means only the owner at the time of Landlord's interest herein, and on any sale or assignment of the interest of Landlord and the assumption of this Lease, its successors in interest and/or assigns will, during the term of its ownership of its estate herein, be deemed to be Landlord. This Lease creates for all purposes an estate for years and not a usufruct.

Section 28. Entire Agreement; Modification of Lease. No oral statement or prior written matter between Landlord and Tenant with respect to the matters covered in this Lease will have any force or effect. Landlord and Tenant hereby agree that they are not relying on any representations or agreements by the other Party other than the representations or agreements contained in this Lease. Except for any right to terminate this Lease as expressly provided in this Lease, this Lease will not be modified or canceled except by a writing executed by Landlord and Tenant. All exhibits attached to this Lease are incorporated in this Lease and are made a part of this Lease by reference in this Lease.

Section 29. Parties. Except as otherwise expressly provided in this Lease, and subject to the terms of Section 10, the covenants, conditions and agreements contained in this Lease will bind and inure to the

benefit of Landlord and Tenant and their respective heirs, successors, successors in title, administrators and assigns.

Section 30. Counterpart Execution; Electronic Submission. This Lease will be executed in multiple counterparts, each of which will be deemed an original, and all of which will constitute one and the same agreement. For purposes of this Lease, a document (or signature page thereto) signed and transmitted by facsimile machine, telecopier, portable document format (PDF) or other reasonable form of electronic transmission is to be treated as an original document. The signature of any Party thereon, for purposes hereof, is to be considered as an original signature, and the document transmitted is to be considered to have the same binding effect as an original signature on an original document. No Party may raise the use of a facsimile machine, telecopier, portable document format (PDF) or other reasonable form of electronic transmission or the fact that any signature was transmitted through the use of a facsimile, telecopier, portable document format (PDF) or other reasonable form of electronic transmission as a defense to the enforcement of this Lease or any amendment or other document executed in compliance with this Section.

Section 31. Day of Performance. Wherever there is a day or time period established for performance and the day or the expiration of such time period is a Saturday, Sunday or holiday, then the time for performance will be automatically extended to the next business day.

Section 32. Landlord's Representations and Warranties. To induce Tenant to enter into this Lease, Landlord represents and warrants to Tenant as follows:

- (a) As of the Commencement Date, Landlord owns fee simple title to the Land.
- (b) There are no actions, suits or proceedings of any kind pending or threatened in writing against Landlord, the Land or relating to any adjoining right-of-ways in any court or before or by any federal, state, county or municipal department, commission, board, bureau or agency or other governmental instrumentality that if adversely determined could reasonably be expected to have a material adverse effect on Tenant's ability to use the Premises for the Permitted Use.
- (c) All actions required to authorize the execution and performance of this Lease by Landlord have been taken, and this Lease constitutes a valid and binding agreement, enforceable against Landlord. As of the Commencement Date, no person or entity has any right or option to lease, occupy or acquire the Land.
- (d) Landlord has not received any written notice from a governmental authority alleging an existing violation of any ordinance, code, law, rule, requirement or regulation applicable to the Land.

Section 33. Environmental Matters. The following terms, whenever set forth in initial capitals in this Lease, shall have the meaning set forth in this Section 33, except as otherwise expressly provided in this Lease:

- (a) "Environmental Law" shall mean: (a) any applicable federal, state or local statute, law, ordinance, rule, regulation, code, license, permit, authorization, approval, consent, order, judgment, decree, injunction, directive, requirement by, of, or agreement with any governmental agency, existing as of the date this Lease is fully executed and as amended thereafter or hereinafter enacted, relating to: I. the protection, preservation or restoration of the environment (including, without limitation, air, water, vapor, surface water, ground water, drinking water supply, surface land, subsurface land, plant and animal life, or any other natural resource), or to human health and safety; or II. the exposure to, or the use, storage, recycling, treatment, generation, transportation, processing, handling, labeling, production, release or disposal of, Hazardous Substances. (b) Environmental Law also includes, without limitation, any common

law or equitable doctrine (including, without limitation, injunctive relief and tort doctrines such as negligence, nuisance, trespass and strict liability) that may impose liability or obligations for injuries or damages related or incidental to, or threatened as a result of, the presence of or exposure to any Hazardous Substance and the following statutes and implementing regulations: I. the Clean Air Act, as amended (42 U.S.C. Section 7401 et seq.); II. the Water Pollution Control Act, as amended (33 U.S.C. Section 1251 et seq.); III. the Resource Conservation and Recovery Act, as amended (42 U.S.C. Section 6901 et seq.); IV. the Comprehensive Environmental Response, Compensation and Liability Act, as amended (42 U.S.C. Section 9601 et seq.); V. the Toxic Substances Control Act, as amended (15 U.S.C. Section 2601 et seq.); and VI. the Occupational Safety and Health Act, as amended (29 U.S.C. Section 651 et seq.).

(b) **"Hazardous Substance"**: shall mean any substance, whether liquid, solid, or gas, that is listed, defined, designated, or classified as toxic, hazardous, radioactive, or dangerous under any Environmental Law, whether by type or by quantity. Hazardous Substance includes, without limitation, any explosive or radioactive material, asbestos, asbestos containing material, lead, urea formaldehyde foam insulation, polychlorinated biphenyls, special waste or petroleum products or any derivative or by-product thereof, radon, methane, toxic waste, pollutant, contaminant, hazardous waste, toxic or hazardous substances, or related materials, as defined in any applicable Environmental Law.

(c) **"Release"**: shall mean any release, spill, emission, leaking, pumping, pouring, emptying, escaping, dumping, injection, deposit, disposal, discharge, dispersal, leaching or migration into the environment or into, onto, beneath or from the Premises, including, without limitation, the movement of Hazardous Substances through or in the air, soil, surface water, ground water of the Premises.

(d) Tenant, at Tenant's expense, shall comply with all Environmental Laws during the Term of the Lease. Tenant shall indemnify, defend, protect and hold Landlord harmless from and against any and all any and all liability, obligation, damage, penalty, cost, charge, expense, cause of action, suits, claims or judgments, including but not limited to reasonable attorneys' fees and court costs and expenses (**"Claims"**) imposed on, incurred by, or reserved against Landlord directly arising out of the existence or presence of Hazardous Substances on, under or from the Premises, in violation of any applicable Environmental Law: (i) discovered after the Commencement Date and (ii) resulting from Tenant's activities or omissions (specifically excluding violations resulting from Landlord activities or omissions). The foregoing indemnity shall survive the expiration or termination of this Lease and/or any transfer of all or any portion of the Premises, and/or any transfer of all or any portion of any interest in this Lease, until the expiration of the applicable statute of limitations for any such Claims, and shall be governed by the laws of the State of Illinois.

(e) Landlord represents to Tenant that, except as related to any acts or omissions by Tenant: (i) to Landlord's actual knowledge (with no duty of inquiry) the Premises on the Commencement Date is in compliance with all applicable Environmental Laws; (ii) to Landlord's actual knowledge (with no duty of inquiry) the Premises is not the subject of any existing, pending or, to the knowledge of Landlord any threatened investigation, action, claim or proceeding by any governmental agency or third Party pursuant to any Environmental Law; (iii) to Landlord's actual knowledge (with no duty of inquiry), Landlord's use, both past and present, of the Premises, including, without limitation, the use by Landlord's past and present tenants of the Premises, has not resulted and does not now result in the Release of any Hazardous Substances on, to or from the Premises in violation of Environmental Laws; (iv) Landlord has not installed, used or operated, and has no actual knowledge (with no duty of inquiry) of the presence or existence, both past and present, of, any underground storage tanks on, under or around the Premises; and (v) Landlord has not received any written notice of any violation of any Environmental Laws at the Premises.

(f) Landlord hereby agrees and does indemnify and hold harmless Tenant from and against (a) any and all Claims, imposed on, incurred by, or reserved against Tenant as a result of Landlord's breach

of its representations in Section 33 or as a result of Landlord's acts or omissions. The foregoing indemnity shall survive the expiration or termination of this Lease and/or any transfer of all or any portion of the Premises, and/or any transfer of all or any portion of any interest in this Lease, until the expiration of the applicable statute of limitations for any such Claims, and shall be governed by the laws of the State of Illinois.

Section 34. Brokerage Commissions. Landlord and Tenant represent and warrant to each other that neither Party has engaged a broker, finder or real estate salesman with regard to the subject matter of this Lease, to whom any real estate commission or fee is due or payable in connection with this Lease. Landlord and Tenant agree to indemnify and hold each other harmless from and against any and all claims for a brokerage commission or finder's fee as a result of allegedly effectuating this Lease asserted by any other person or entity claiming to have been engaged by the indemnifying Party.

Section 35. Dispute Resolution. If a dispute arises between the Landlord and Tenant, the Parties shall follow the provisions provided in Exhibit B (Alternative Dispute Resolution) attached hereto.

Section 36. Limitations on Liability.

[REDACTED]

Section 37. Mutual Drafting. This Lease shall be deemed to be the joint work product of the Parties and any rule of construction that a document shall be interpreted or construed against a drafter of such document shall not be applicable.

[Signatures on the Following Page]

IN WITNESS WHEREOF, the Parties hereto have executed and delivered this Lease as of the date first written above.

LANDLORD:

ATKINSON NORTH CHICAGO LLC, an Illinois
limited liability company

By: 
Name: Coert R. Davis
Title: Manager

TENANT:

ABBVIE AVIATION LLC, an Illinois limited
liability company

By: 
Name: Russell Garich
Title: Manager

EXHIBIT A
DEPICTION OF LAND WITHIN THE LANDLORD'S PARCEL
[Attached]

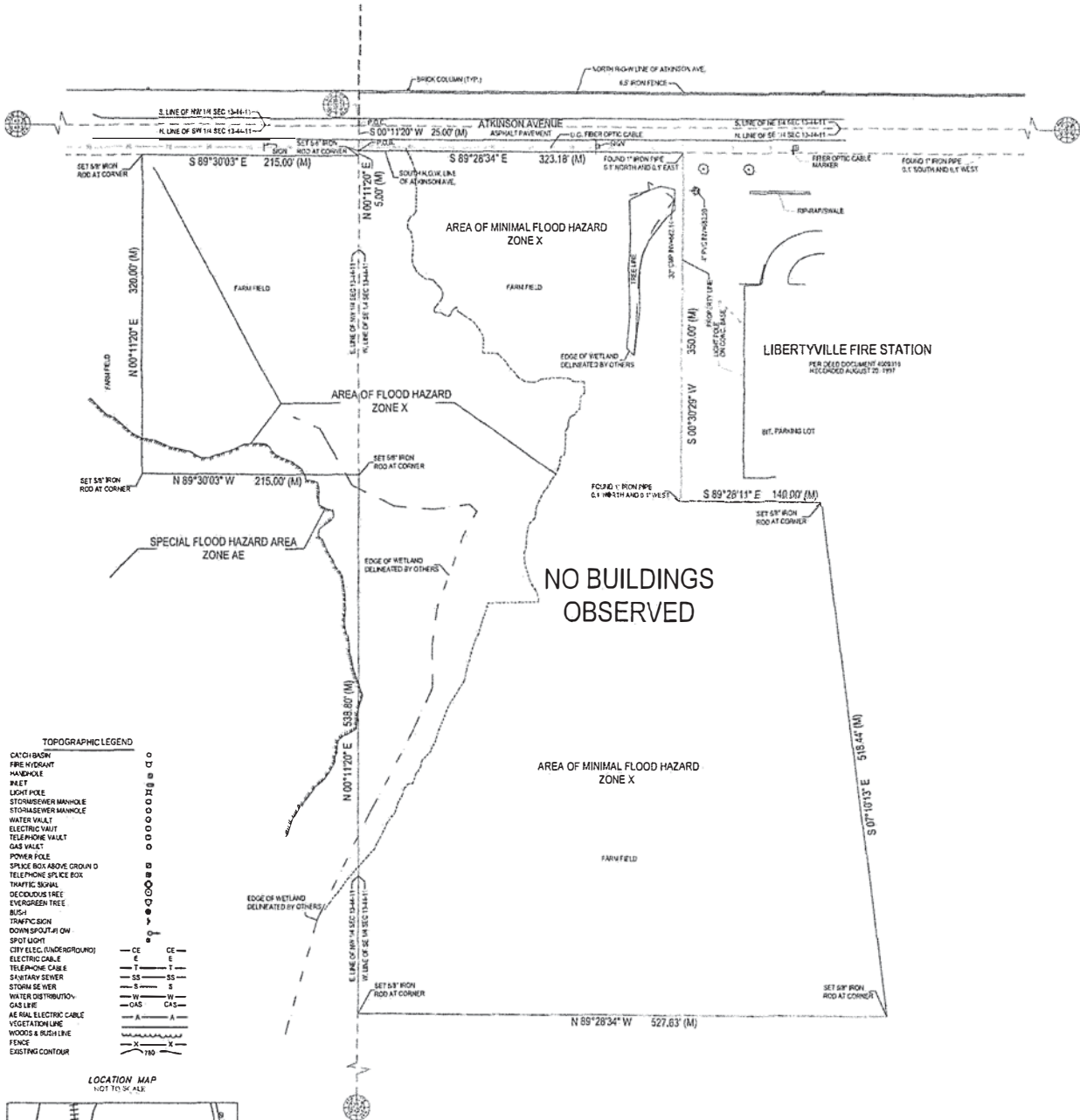
ALTA/NSPS LAND TITLE SURVEY

THAT PART OF THE SOUTH HALF OF SECTION 13, TOWNSHIP 44 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS: COMMENCING AT THE CENTER OF SAID SECTION 13 THENCE SOUTH 00 DEGREES 11 MINUTES 20 SECONDS WEST, 25.00 FEET ALONG THE WEST LINE OF SAID SECTION 13, TO THE SOUTH RIGHT OF WAY LINE OF ATKINSON AVENUE, SAID LINE BEING 25.00 FEET SOUTH AND PARALLEL WITH THE NORTH LINE OF SAID SOUTHEAST QUARTER; THENCE SOUTH 89 DEGREES 28 MINUTES 34 SECONDS EAST, 323.18 FEET, ALONG SAID PARALLEL LINE TO THE WEST LINE OF THE LIBERTYVILLE FIRE STATION PER DEED DOCUMENT 4009318 RECORDED AUGUST 20, 1997; THENCE SOUTH 00 DEGREES 30 MINUTES 29 SECONDS WEST, 350.00 FEET ALONG SAID WESTLINE TO THE SOUTH LINE OF SAID LIBERTYVILLE FIRE STATION; THENCE SOUTH 89 DEGREES 28 MINUTES 11 SECONDS EAST, 140.00 FEET ALONG SAID SOUTH LINE; THENCE SOUTH 07 DEGREES 10 MINUTES 13 SECONDS EAST, 518.44 FEET; THENCE NORTH 89 DEGREES 28 MINUTES 34 SECONDS WEST, 527.63 FEET, ALONG A LINE PARALLEL WITH THE NORTH LINE OF SAID SOUTHEAST QUARTER TO THE WEST LINE OF SAID SOUTHEAST QUARTER; THENCE NORTH 00 DEGREES 11 MINUTES 20 SECONDS EAST, 538.80 FEET ALONG SAID WEST LINE; THENCE NORTH 89 DEGREES 30 MINUTES 03 SECONDS WEST, 215.00 FEET ALONG A LINE PARALLEL WITH THE NORTH LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 13; THENCE NORTH 00 DEGREES 11 MINUTES 20 SECONDS EAST, 320.00 FEET ALONG A LINE PARALLEL WITH THE EAST LINE OF SAID SOUTHWEST QUARTER TO THE SOUTH RIGHT OF WAY LINE OF SAID ATKINSON AVENUE, SAID LINE BEING 30.00 FEET SOUTH AND PARALLEL WITH THE NORTH LINE OF SAID SOUTHWEST QUARTER; THENCE SOUTH 89 DEGREES 30 MINUTES 03 SECONDS EAST, 215.00 FEET ALONG SAID PARALLEL LINE TO THE EAST LINE OF SAID SOUTHWEST QUARTER; THENCE NORTH 00 DEGREES 11 MINUTES 20 SECONDS EAST, 5.00 FEET, ALONG SAID EAST LINE TO THE POINT OF BEGINNING, ALL IN LAKE COUNTY, ILLINOIS.

SAID PARCEL CONTAINS 43560 SQUARE FEET OR 10.000 ACRES MORE OR LESS

PART OF P.L.N. 12-13.400 017, 11-13 300 004.

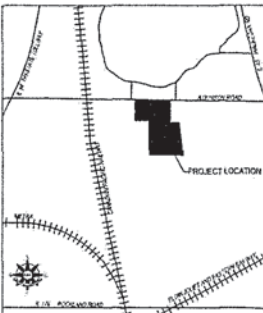
13397 West Atkinson Road, Libertyville, IL 60067



TOPOGRAPHIC LEGEND

CATCH BASIN	CE	CE
FIRE HYDRANT	E	E
MANHOLE	T	T
RAIL	SS	SS
LIGHT POLE	S	S
STORMSEWER MANHOLE	W	W
STORMSEWER MANHOLE	W	W
WATER VAULT	W	W
ELECTRIC VAULT	W	W
TELEPHONE VAULT	W	W
GAS VAULT	W	W
POWER POLE	W	W
SPLICE BOX ABOVE GROUND	W	W
TELEPHONE SPLICE BOX	W	W
TRAFFIC SIGNAL	W	W
DECIDUOUS TREE	W	W
EVERGREEN TREE	W	W
BUSH	W	W
TRAFFIC SIGN	W	W
DOWN SPOUT (A) ON	W	W
SPOT LIGHT	W	W
CITY (ELEC. UNDERGROUND)	W	W
ELECTRIC CABLE	W	W
TELEPHONE CABLE	W	W
SEWAGE	W	W
STORM SEWER	W	W
WATER DISTRIBUTION	W	W
GAS LINE	W	W
AIRIAL ELECTRIC CABLE	W	W
VEGETATION LINE	W	W
WOODS & BUSH LINE	W	W
FENCE	W	W
EXISTING CONTOUR	W	W

LOCATION MAP



SURVEYORS NOTES:

1. NO DIMENSIONS SHOULD BE ASSUMED BY SCALING.
2. ALL BEARINGS AND DISTANCES ARE SHOWN IN FEET AND DECIMAL PARTS THEREOF.
3. BASIS OF BEARING IS BASED ON THE ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE (NAD83) CORRS AND BEARING FROM GPS-RINEX OBSERVATIONS.
4. A PORTION OF THIS PROPERTY IS WITHIN A SPECIAL FLOOD HAZARD AREA AS DEPICTED ON FEMA MAP 170601017A WITH AN EFFECTIVE DATE OF SEPTEMBER 14, 2013. IT OCCURS ZONE DEEP BATHING IS DEPICTED BY SCALED MAP LOCATIONS AND GRAPHIC PLUMBING ONLY.
5. THIS PARCEL IS ZONED FB - FARM B.
6. A TITLE REPORT WAS NOT PROVIDED FOR THIS SURVEY.
7. THE EXISTENCE OF RECENTLY CONSTRUCTED BUILDINGS OR BUILDINGS ADDITIONS WERE OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.
8. THE DELINEATION OF THE WETLAND SHOWN WAS PROVIDED BY OTHERS.

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM VISIBLE FIELD EVIDENCE AND EXISTING DRAWINGS, MAPS AND RECORDS SUPPLIED TO THE SURVEYOR. THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM AVAILABLE INFORMATION. THE SURVEYOR HAS PHYSICALLY LOCATED VISIBLE STRUCTURES, HOWEVER, HE HAS NOT PHYSICALLY LOCATED THE UNDERGROUND LINES.

STATE OF ILLINOIS)
J.S.S.
COUNTY OF COOK)

THIS IS TO CERTIFY THAT THIS MAP OR PLAN AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2006 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS. THE FIELDWORK WAS COMPLETED ON NOVEMBER 13, 2018.

THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR ALTA/NSPS LAND TITLE SURVEYS.

CLIENT: HEAD & HUNT
JOB NO. 18-0102
DRAWING: 21-081, 21-010, 21-011, 21-012, 21-013, 21-014, 21-015, 21-016, 21-017, 21-018, 21-019, 21-020, 21-021, 21-022, 21-023, 21-024, 21-025, 21-026, 21-027, 21-028, 21-029, 21-030, 21-031, 21-032, 21-033, 21-034, 21-035, 21-036, 21-037, 21-038, 21-039, 21-040, 21-041, 21-042, 21-043, 21-044, 21-045, 21-046, 21-047, 21-048, 21-049, 21-050, 21-051, 21-052, 21-053, 21-054, 21-055, 21-056, 21-057, 21-058, 21-059, 21-060, 21-061, 21-062, 21-063, 21-064, 21-065, 21-066, 21-067, 21-068, 21-069, 21-070, 21-071, 21-072, 21-073, 21-074, 21-075, 21-076, 21-077, 21-078, 21-079, 21-080, 21-081, 21-082, 21-083, 21-084, 21-085, 21-086, 21-087, 21-088, 21-089, 21-090, 21-091, 21-092, 21-093, 21-094, 21-095, 21-096, 21-097, 21-098, 21-099, 21-100, 21-101, 21-102, 21-103, 21-104, 21-105, 21-106, 21-107, 21-108, 21-109, 21-110, 21-111, 21-112, 21-113, 21-114, 21-115, 21-116, 21-117, 21-118, 21-119, 21-120, 21-121, 21-122, 21-123, 21-124, 21-125, 21-126, 21-127, 21-128, 21-129, 21-130, 21-131, 21-132, 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22-008, 22-009, 22-010, 22-011, 22-012, 22-013, 22-014, 22-015, 22-016, 22-017, 22-018, 22-019, 22-020, 22-021, 22-022, 22-023, 22-024, 22-025, 22-026, 22-027, 22-028, 22-029, 22-030, 22-031, 22-032, 22-033, 22-034, 22-035, 22-036, 22-037, 22-038, 22-039, 22-040, 22-041, 22-042, 22-043, 22-044, 22-045, 22-046, 22-047, 22-048, 22-049, 22-050, 22-051, 22-052, 22-053, 22-054, 22-055, 22-056, 22-057, 22-058, 22-059, 22-060, 22-061, 22-062, 22-063, 22-064, 22-065, 22-066, 22-067, 22-068, 22-069, 22-070, 22-071, 22-072, 22-073, 22-074, 22-075, 22-076, 22-077, 22-078, 22-079, 22-080, 22-081, 22-082, 22-083, 22-084, 22-085, 22-086, 22-087, 22-088, 22-089, 22-090, 22-091, 22-092, 22-093, 22-094, 22-095, 22-096, 22-097, 22-098, 22-099, 22-100, 22-101, 22-102, 22-103, 22-104, 22-105, 22-106, 22-107, 22-108, 22-109, 22-110, 22-111, 22-112, 22-113, 22-114, 22-115, 22-116, 22-117, 22-118, 22-119, 22-120, 22-121, 22-122, 22-123, 22-124, 22-125, 22-126, 22-127, 22-128, 22-129, 22-130, 22-131, 22-132, 22-133, 22-134, 22-135, 22-136, 22-137, 22-138, 22-139, 22-140, 22-141, 22-142, 22-143, 22-144, 22-145, 22-146, 22-147, 22-148, 22-149, 22-150, 22-151, 22-152, 22-153, 22-154, 22-155, 22-156, 22-157, 22-158,

EXHIBIT B
ALTERNATIVE DISPUTE RESOLUTION

The Parties recognize that from time to time a dispute may arise relating to either Party's rights or obligations under this Ground Lease. The Parties agree that any such dispute shall be resolved by the Alternative Dispute Resolution ("**ADR**") provisions set forth in this Exhibit, the result of which shall be binding upon the Parties.

To begin the ADR process, a Party first must send written notice of the dispute to the other Party for attempted resolution by good faith negotiations between their respective presidents (or their designees) of the affected business units within twenty-eight (28) days after such notice is received (all references to "days" in this ADR provision are to calendar days). If the matter has not been resolved within twenty-eight (28) days after the notice of dispute, or if the Parties fail to meet within such twenty-eight (28) days, either Party may initiate an ADR proceeding as provided herein. The Parties shall have the right to be represented by counsel in such a proceeding.

1. To begin an ADR proceeding, a Party shall provide written notice to the other Party of the issues to be resolved by ADR. Within fourteen (14) days after its receipt of such notice, the other Party may, by written notice to the Party initiating the ADR, add additional issues to be resolved within the same ADR.

2. Within twenty-one (21) days following the initiation of the ADR proceeding, the Parties shall select a mutually acceptable independent, impartial and conflicts-free neutral to preside in the resolution of any disputes in this ADR proceeding. If the Parties are unable to agree on a mutually acceptable neutral within such period, each Party will select one independent, impartial and conflicts-free neutral and those two neutrals will select a third independent, impartial and conflicts-free neutral within ten (10) days thereafter. None of the neutrals selected may be current or former employees, officers or directors of either Party, its subsidiaries or affiliates.

3. No earlier than twenty-eight (28) days or later than fifty-six (56) days after selection, the neutral(s) shall hold a hearing to resolve each of the issues identified by the Parties. The ADR proceeding shall take place at a location agreed upon by the Parties. If the Parties cannot agree, the neutral(s) shall designate a location other than the principal place of business of either Party or any of their subsidiaries or affiliates.

4. At least seven (7) days prior to the hearing, each Party shall submit the following to the other Party and the neutral(s):

a. a copy of all exhibits on which such Party intends to rely in any oral or written presentation to the neutral;

b. a list of any witnesses such Party intends to call at the hearing, and a short summary of the anticipated testimony of each witness;

c. a proposed ruling on each issue to be resolved, together with a request for a specific damage award or other remedy for each issue. The proposed rulings and remedies shall not contain any recitation of the facts or any legal arguments and shall not exceed one (1) page per issue. The Parties agree that neither side shall seek as part of its remedy any punitive damages; and

d. a brief in support of such Party's proposed rulings and remedies, provided that the brief shall not exceed twenty (20) pages. This page limitation shall apply regardless of the number of issues raised in the ADR proceeding.

e. Except as expressly set forth in subparagraphs 4(a) - 4(d), no discovery shall be required or permitted by any means, including depositions, interrogatories, requests for admissions, or production of documents.

5. The hearing shall be conducted on two (2) consecutive days and shall be governed by the following rules:

a. Each Party shall be entitled to five (5) hours of hearing time to present its case. The neutral shall determine whether each Party has had the five (5) hours to which it is entitled.

b. Each Party shall be entitled, but not required, to make an opening statement, to present regular and rebuttal testimony, documents or other evidence, to cross-examine witnesses, and to make a closing argument. Cross-examination of witnesses shall occur immediately after their direct testimony, and cross-examination time shall be charged against the Party conducting the cross-examination.

c. The Party initiating the ADR shall begin the hearing and, if it chooses to make an opening statement, shall address not only issues it raised but also any issues raised by the responding Party. The responding Party, if it chooses to make an opening statement, also shall address all issues raised in the ADR. Thereafter, the presentation of regular and rebuttal testimony and documents, other evidence, and closing arguments shall proceed in the same sequence.

d. Except when testifying, witnesses shall be excluded from the hearing until closing arguments.

e. Settlement negotiations, including any statements made therein, shall not be admissible under any circumstances. Affidavits prepared for purposes of the ADR hearing also shall not be admissible. As to all other matters, the neutral(s) shall have sole discretion regarding the admissibility of any evidence.

f. Within seven (7) days following completion of the hearing, each Party may submit to the other Party and the neutral(s) a post-hearing brief in support of its proposed rulings and remedies, provided that such brief shall not contain or discuss any new evidence and shall not exceed ten (10) pages. This page limitation shall apply regardless of the number of issues raised in the ADR proceeding.

g. The neutral(s) shall rule on each disputed issue within fourteen (14) days following completion of the hearing. Such ruling shall adopt in its entirety the proposed ruling and remedy of one of the Parties on each disputed issue but may adopt one Party's proposed rulings and remedies on some issues and the other Party's proposed rulings and remedies on other issues. The neutral(s) shall not issue any written opinion or otherwise explain the basis of the ruling.

h. The neutral(s) shall be paid a reasonable fee plus expenses. These fees and expenses, along with the reasonable legal fees and expenses of the prevailing Party (including all expert witness fees and expenses), the fees and expenses of a court reporter, and any expenses for a hearing room, shall be paid as follows:

i. If the neutral(s) rule(s) in favor of one Party on all disputed issues in the ADR, the losing Party shall pay 100% of such fees and expenses.

ii. If the neutral(s) rule(s) in favor of one Party on some issues and the other Party on other issues, the neutral(s) shall issue with the rulings a written determination as to how such fees and expenses shall be allocated between the Parties. The neutral(s) shall allocate fees and expenses in a way that bears a reasonable relationship to the outcome of the ADR, with the Party prevailing on more issues, or on issues of greater value or gravity, recovering a relatively larger share of its legal fees and expenses.

6. The rulings of the neutral(s) and the allocation of fees and expenses shall be binding, non-reviewable, and non-appealable, and may be entered as a final judgment in any court having jurisdiction.

7. Except as required by law, the existence of the dispute, any settlement negotiations, the ADR hearing, any submissions (including exhibits, testimony, proposed rulings, and briefs), and the rulings shall be deemed confidential. The neutral(s) shall have the authority to impose sanctions for unauthorized disclosure of confidential information.

8. All ADR hearings shall be conducted in the English language.



Coert R. Davis
Senior Director
Corporate Real Estate

Abbott Laboratories



December 5, 2019

Russ Garich
Vice President
Central Services
AbbVie



RE: Atkinson Road Sewer Line

Dear Mr. Garich:

Thank you for your inquiry regarding your project on Atkinson Road and the sanitary sewer connections at Abbott Park. Unfortunately, Abbott is not able to accommodate your request as sewer is not deemed available to your parcel.

Thank you for contacting us and best of luck with your project.

Regards,



Coert Davis
Senior Director of Real Estate



Village of Green Oaks

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Bryan Muskat

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Pete Furlong

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Village Clerk

Clare Michelotti

clare.michelotti@greenoaks.org

December 17, 2019

Ms. Christina Lee

Director, State Government Affairs, Midwest

AbbVie



Dear Ms. Lee,

Thank you for taking the time to meet with us regarding the proposed helipad adjacent to the Libertyville Fire Protection District Station 3 on Atkinson Road in unincorporated Libertyville Township.

Pursuant to your request, we have reviewed our existing sanitary facilities in the area of the proposed site. The nearest village-owned sewer is more than 2,700 feet south of the proposed helipad. Based on the proposed use of the site, the distance to existing Village facilities, and the availability of North Shore Water Reclamation facilities closer to the site, Village of Green Oaks sewer facilities are not available or optimal to service your site.

Please do not hesitate to contact me if you have any questions.

Respectfully,



Bernard Wysocki

Village President

cc: Board of Trustees, Village of Green Oaks
Ms. Denise Kafkis, Village Administrator
Mr. Jeff Bixler, Lake County Health Department