300-2000
ITEM 2

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
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February 12, 2020

Ms. Judith A. Neu, P.E.
Village Engineer/Public Works Director
Village of Sussex
N64 W23760 Main Street
Sussex, WI 53089

Re: SEWRPC No. CA-734-208

Dear Ms. Neu:

This will respond to your email message of November 27, 2017, requesting that the Commission staff conduct a field inspection of the Hickory Hill Farms, Inc., property. The property is located at N67 W25913 Silver Spring Drive in parts of the South one-half and Northwest one-quarter of U.S. Public Land Survey Sections 21 and 28, respectively, Township 8 North, Range 19 East, Village of Sussex, Waukesha County, Wisconsin. The purpose of the field inspection was to determine if the wetland boundaries delineated by Commission staff on the subject property in late 2011/early 2012 are still valid.

Given that the 2017 growing season had ended by the date your request was received, Commission staff attempted to conduct the wetland verification during the 2018 growing season. However, a late harvest of the corn crop after the growing season had ended in 2018 prevented the verification. Accordingly, Commission staff conducted field inspections of the subject property in the early part of the 2019 growing season on May 7, 13, 14, 15, 16, 20, 22, and 28. It was determined that certain segments of wetland boundary had changed. Wetland boundaries that had changed were re-staked in the field. A copy of the wetland delineation report describing our findings is attached for your reference.

Should you have any questions regarding this information, please do not hesitate to contact Mr. Christopher J. Jors, Principal Specialist-Biologist (cjors@sewrpc.org or 262-953-3246).

Sincerely,

Kevin J. Muhs, PE, AICP
Executive Director

KJM/TMS/CJJ/md
#251827 – CA734-208 Hickory Hill Farms 2019 Visit Letter

Enclosure (#252200)

cc: Mr. Brian Depies, SEH, Inc. (w/enclosure by email)
Ms. Heidi Kennedy, SEH, Inc. (w/enclosure)
Mr. Thomas Pearce, Wisconsin Department of Natural Resources (w/enclosure by email)
Mr. Marty Dillenburg, Wisconsin Department of Natural Resources (w/enclosure by email)
Ms. Kara Brooks, Wisconsin Department of Natural Resources (w/enclosure by email)
Ms. Marie Kopka, U.S. Army Corps of Engineers (w/enclosure)

WETLAND DELINEATION REPORT

HICKORY HILL FARMS, INC., PROPERTY
N67 W25913 SILVER SPRING DRIVE

SW and SE Quarters, Section 21
NW Quarter, Section 28
T8N, R19E
VILLAGE OF SUSSEX,
WAUKESHA COUNTY,
WISCONSIN

Lead Investigator:
Christopher J. Jors
Principal Specialist-Biologist
Southeastern Wisconsin Regional Planning Commission
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P.O. Box 1607
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Report completed: January 17, 2020

WETLAND DELINEATION REPORT OVERVIEW

(Based upon WDNR WETLAND Delineation Confirmation Request Check List)

INTRODUCTION

- Who requested the delineation – **Ms. Judith A. Neu, P.E., Village Engineer/Public Works Director, Village of Sussex**
- Date the field work was completed – **May 7, 13, 14, 15, 16, 20, 22, and 28, 2019**
- Who conducted field work – **Christopher Jors, Jennifer Dietl, Daniel Carter, Shane Heyel, and Zofia Noe**
- Statement of Qualifications
- GIS Support – **Bradley Subotnik**

METHODS

- Description of Methods
- Sources Reviewed
  - Waukesha County Topographic Mapping – **Exhibit 1**
  - Wisconsin Department of Natural Resources (WDNR) Surface Water Data Viewer - Wisconsin Wetland Inventory (WWI) Mapping – **Exhibit 2**
  - Natural Resources Conservation Services (NRCS) Soil Survey and Federal Emergency Management Agency (FEMA) Floodplain Mapping – **Exhibit 3**
  - SEWRPC Historical Aerial Photos – **Exhibits 4A to 4L (2015, 2010, 2007, 2005, 2000, 1995, 1990, 1980, 1970, 1963, 1950, & 1941)**
  - SEWRPC Sanitary Sewer Service Area Mapping – **Exhibit 5 (Maps 1 & 2)**
  - Advance Identification (ADID) Wetland Mapping – **Not Applicable**
  - National Agriculture Imagery Program (NAIP) & Farm Service Agency (FSA) Images – **See below**
- Description of any site specific agency guidance (site meetings, etc.) – **None**

RESULTS AND DISCUSSION

- Antecedent hydrologic condition analysis – **Normal**
- Previous wetland delineation mapping – **SEWRPC 2011/2012**
- Existing environmental mapping (WWI mapping, Soil survey, etc.)
- Amount and types of wetland located within the project area
- Wetland/upland boundary explanation
- Disturbed and problematic areas encountered
- Other considerations

LITERATURE CITED

Wetland Delineation Map – **Exhibit 6 (Maps 1 & 2)**

Vegetation Survey, Wetland Delineation Data Forms, and Site Photos

- Preliminary Vegetation Survey – **Exhibit 7**
- Wetland Determination Data Forms – Northcentral and Northeast Region – **Exhibit 8**
- Site Photos – **Exhibit 9**

NAIP/FSA Image Review

- NAIP/FSA Review Area Map – **Exhibit 10**
- Wetland Hydrology from Aerial Imagery – Recording Form – **Exhibit 11**
- NAIP/FSA Images Taken With Normal Antecedent Precipitation – **Exhibit 12**
- NRCS Draft Wetland Inventory Map – **Exhibit 13**
- Recent Drain Tile Upgrades Map – **Exhibit 14**

INTRODUCTION

This wetland delineation report responds to a November 27, 2017, email request from Ms. Judith A. Neu, P.E., Village Engineer/Director of Public Works, Village of Sussex, to conduct a field inspection of the Hickory Hill Farms, Inc., property. The subject property is located at N67 W25913 Silver Spring Drive (CTH VV) in the Southern one-half and Northwest one-quarter of U.S. Public Land Survey Sections 21 and 28, respectively, Township 8 North, Range 19 East, Village of Sussex, Waukesha County, Wisconsin. The purpose of the field inspection was to determine if the wetland boundaries field-staked and surveyed by SEWRPC staff on the subject property in December, 2011, and April, 2012, were still valid.

Statement of Qualifications

Lead Investigator: Christopher Jors, Principal Specialist-Biologist, has worked at SEWRPC since 1993, and has been part of the wetland delineation team since 1994. He received a Bachelor's degree in Biological Aspects of Conservation from the University of Wisconsin – Milwaukee in 1992. Prior to working at SEWRPC, Chris worked at the UWM Field Station at the Cedarburg Bog in Saukville, WI, where he learned methods of sampling wetland plant communities within the Bog. Chris has attended various wetland training workshops including: UW-La Crosse Critical Methods Workshop on February 19, 2019; the UW-La Crosse Basic and Advanced Wetland Delineation Workshops on August 10-15, 2015; a Wisconsin Department of Natural Resources Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014; and a U.S. Army Corps of Engineers Workshop on the Midwest Supplement to the 1987 Wetland Delineation Manual on February 3, 2009.

Jennifer Dietl, Senior Specialist-Biologist, earned Bachelor's degrees in Biology and Environmental Science from Carroll University in 1992. Jennifer has worked at SEWRPC from 1992 to 1997 and from 2006 to the present conducting wetland delineations, primary environmental corridor delineations, and vegetation surveys. In between years of service at SEWRPC, she worked for the Wisconsin Department of Transportation – Green Bay as an LTE Environmental Analysis and Review Specialist – and the Wisconsin Department of Natural Resources – Green Bay as an LTE Hydrologist. Jennifer attended the UW-La Crosse Critical Methods Workshop on February 19, 2019; the UW-La Crosse Hydric Soils Workshop on July 19-21, 2017; the UW-La Crosse Basic and Advanced Wetland Delineation Workshops on August 10-15, 2015; and a Wisconsin Department of Natural Resources Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014.

Daniel Carter, Ph.D., Principal Specialist-Biologist, has worked at SEWRPC since 2013. He graduated with honors from Grinnell College with a Bachelor's degree in Biology. He later received a PhD in Biology from Kansas State University. Daniel has published several plant ecology articles in peer-reviewed journals, served on the botany team for the Wisconsin Wildlife Action Plan, and co-teaches the UW-La Crosse Basic Wetland Plant Identification course. He has completed both basic and advanced wetland delineation training as well as Wisconsin Natural Heritage Inventory training. Prior to working for the Commission, Daniel served as project coordinator for a grassland restoration project overseen jointly by the United States Department of Agriculture and The Nature Conservancy and taught high school Biology.

Shane Heyel, Specialist-Biologist, joined the wetland delineation team at SEWRPC in June 2016. He holds a Bachelor's degree in Land Use Planning from the University of Wisconsin-Stevens Point and a Master's degree in Hydrology & Water Quality from Lancaster University (United Kingdom). His experience includes seven years with the Wisconsin Department of Natural Resources, most notably four years as a water management specialist regulating waterways and wetlands. As an environmental specialist with Atkins Limited, U.K. from 2005-09, Shane carried out pollution and flood risk assessments for the English Highways Agency and sewer network modeling for major British water companies. More recently, as an independent consultant in Wisconsin, he helped develop a site restoration plan for a proposed wetland mitigation bank. He completed UW-La Crosse Wetland Delineation Workshops in August 2015 (Basic) and August 2016

(Advanced), the Basic Plant ID Workshop in July 2017, and the UW-La Crosse Critical Methods Workshop on February 19, 2019.

Zofia Noe, Specialist-Biologist, earned a Bachelor's degree in Biology and Chemistry from St. Mary's College of Maryland in 2003. She earned a Master's Degree in Coastal Marine and Wetland Studies from Coastal Carolina University in 2009. Zofia has completed an Aquatic Plant Identification course, a UW-La Crosse Basic Wetland Plant Identification course in 2015, and a Wisconsin Department of Natural Resources Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014. She has experience in a variety of environmental assessments including water quality, aquatic plant, and upland vegetation surveys. Zofia began assisting with wetland delineations in the summer of 2013.

METHODS

Description of Methods

The wetland boundary determinations were based upon the criteria and methodologies set forth in the 1987 *Corps of Engineers Wetlands Delineation Manual*; the January, 2012, *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0); the March 4, 2015, *Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources*; and the State of Wisconsin 2016 Wetland Plant List.

Sources Reviewed

Prior to conducting the field inspection, Commission staff reviewed the following data sources that were available and applicable to the subject property:

- Waukesha County's topographic mapping (Exhibit 1)
- WDNR Surface Water Data Viewer - WWI mapping (Exhibit 2)
- NRCS soil survey and FEMA floodplain mapping (Exhibit 3)
- SEWRPC historical aerial photography (Exhibits 4A – 4L)
- SEWRPC Sanitary Sewer Service Area mapping (Exhibit 5, Maps 1 & 2)
- NAIP/FSA Aerial Images (Exhibit 13)
- Drain Tile Maps provided by the property owner (Exhibit 14)
- Precipitation data from the NRCS "WETS" tables

RESULTS AND DISCUSSION

Christopher Jors, as lead field investigator and report author, supervised and approved all aspects of the wetland verification/re-delineation in the field, data compilation and analysis, and preparation of this report. As indicated above, SEWRPC Biologists initially field-staked the wetland boundaries on the subject property in December 2011, after the growing season had ended. SEWRPC Surveyors then surveyed the preliminary wetland boundary markers. SEWRPC Biologists returned to the property in the spring of 2012 to verify wetland hydrology during the growing season and determined that the post-growing season delineation from December 2011 was indeed valid.

Given the expiration of the original wetland delineation in the spring of 2017, Ms. Neu requested an updated delineation by email on November 27, 2017. Upon receipt of the request, SEWRPC staff notified interested parties that non-growing season wetland delineations were no longer conducted by SEWRPC and the fieldwork would have to be scheduled during the 2018 growing season. Attempts were made to complete the wetland delineation during the 2018 growing season, but a late harvest of the corn crop after the growing season had ended that year prevented it. Accordingly, SEWRPC staff scheduled the wetland delineation for the early growing season in 2019.

In preparation for the wetland verification/re-delineation, the 2011/2012 surveyed wetland boundaries and an aerial photo base map were downloaded onto a Samsung tablet with global positioning capabilities. In

addition, the property owner provided drain tile mapping to SEH, Inc. staff, who shared it with SEWRPC staff. This mapping included a rough sketch of the drain tile layout dated 1961 as well as detailed maps showing recent (2016-2018) drain tile improvements on the property. The layout of recent tile upgrades is shown on Exhibit 14.

SEWRPC Biologists conducted field inspections of the subject property on May 7, 13, 14, 15, 16, 20, 22, and 28, 2019. Surveyed 2011/2012 wetland boundaries were inspected in the field using the Samsung tablet. One-hundred forty-nine sample sites were recorded throughout the property to determine if the 2011/2012 wetland boundaries were still valid. A sub-meter-accuracy Global Positioning System (GPS) device (Spectra Precision Mobile Mapper) was used to record the sample site locations. Where sampling indicated that wetland boundaries had changed, those segments of wetland boundary were re-staked in the field with orange wire flags and ribbon. SEH, Inc. staff used a GPS device to record the locations of all wetland boundary flags placed by SEWRPC Biologists. A wetland boundary file was prepared combining the still-valid wetland boundaries from 2011/2012 and the 2019-staked wetland boundaries. Exhibit 6 (Maps 1 & 2) show all wetland contained on the subject property with blue shading. Wetland areas re-staked in 2019 are identified on the map with a blue hatch. Exhibit 6 also includes the GPS-located sample site locations and numbers, and the plant community numbers.

Antecedent Hydrologic Conditions

Climatological data were taken from the nearest WETS station with complete data for the 1981-2010 climate period (Oconomowoc) and monthly precipitation summaries for the 90-day observed data (Sussex 0.8 NNE).

May 7, 13, 14, 15, 2019	Month	3 years in 10 Less Than	Normal	3 years in 10 More Than	Observed Precip.	Condition (dry, wet, normal)	Condition Value	Month Weight Value	Product of Previous Two Columns
1st prior month	April	2.55	3.52	4.15	3.63	Normal	2	3	6
2nd prior month	March	1.28	2.04	2.47	1.00	Dry	1	2	2
3rd prior month	Feb.	0.80	1.49	1.80	3.00	Wet	3	1	3
									Sum = 11

If Sum is	
6 - 9	drier than normal
10 - 14	normal
15 - 18	wetter than normal

Conclusion: Normal

May 16, 20, 22, 28, 2019	Month	3 years in 10 Less Than	Normal	3 years in 10 More Than	Observed Precip.	Condition (dry, wet, normal)	Condition Value	Month Weight Value	Product of Previous Two Columns
1st prior month	May	2.38	3.73	4.50	4.98	Wet	3	3	9
2nd prior month	April	2.55	3.52	4.15	3.63	Normal	2	2	4
3rd prior month	March	1.28	2.04	2.47	1.00	Dry	1	1	1
									Sum = 14

If Sum is	
6 - 9	drier than normal
10 - 14	normal
15 - 18	wetter than normal

Conclusion: Normal

Previous Wetland Delineation Mapping

SEWRPC wetland delineation in 2011/2012 (see details above under “RESULTS AND DISCUSSION”)

Existing Environmental Mapping

The Waukesha County topographic mapping (Exhibit 1) depicts a project area with significant topographic relief. Steep east- and south-facing slopes are present in the northwest part of the property while steep north-facing slopes are also present on the south part. Elevations range from a high of 1063 feet above North American Vertical Datum, 1988 adjustment (NAVD 88), on a steep hillside at the southwest corner of the property to a low of 940 feet along the banks of the unnamed tributary to Spring Creek where it flows off the property at the eastern edge. The unnamed tributary to Spring Creek enters the western edge of the property via culvert under Mary Hill Road before flowing in a southeasterly direction across the central part of the property. A small ditched waterway flows in a southerly direction from the north part of the property before draining into the unnamed tributary to Spring Creek. Other surface waters include two excavated ponds. One is located just south of the main tributary waterway while the other is east of the small waterway.

The WDNR Surface Water Data Viewer – WWI mapping (Exhibit 2) reflects findings from the wetland delineation conducted by SEWRPC Biologists in 2011/2012. These findings include:

- Wetlands adjacent to portions of the unnamed tributary to Spring Creek and the small waterway are identified as emergent-wet meadow (E2K) wetland. The unnamed tributary to Spring Creek is classified by WDNR as a 1st order Cool-Warm Headwater. General condition of the tributary is unknown. The small waterway is not identified as a surface water by WDNR.

- The large pond south of the main tributary is identified as open water-excavated (WOHx) wetland. WDNR does not have other information for the large pond. The wetland associated with the small pond is classified as emergent-wet meadow/open water (E2/W0H) complex. WDNR does not identify the small pond as a surface water.

- Farmed wetlands (FOKf) on the property include a large area south of the main tributary on the west side of the property, a large area encompassing land on both sides of the unnamed tributary to Spring Creek, a small area on the north side of the tributary in the central-east part of the property, the farmed western edge of a wetland complex in the south-central part of the property, and a small area on the east end of the property.

- Wetlands southeast of the large pond include an emergent-wet meadow (E1K) and two previously grazed emergent-wet meadow (E2Kg) wetlands.

- Forested (T3K) wetlands are present in the southwest and southeast parts of the property.

- A scrub-shrub/emergent wet-meadow (S3/E2K) wetland is shown in the south-central part of the property.

- A farmed/emergent wet-meadow (E1/F0Kf) wetland is present in the northeast part of the property.

Wetland indicators are also shown on Exhibit 2 based upon NRCS-mapped Brookston silt loam (BsA), Houghton muck (HtA and HtB), Kendall silt loam (KlA), Lamartine silt loam (LmB), Mundelein silt loam (MzfA), Ogden muck (Oc), Palms muck (Pa), Pella silt loam (Ph), and St. Charles silt loam (ScB).

The NRCS Soil Survey map (Exhibit 3) shows the following soils in the project area:

Map Unit Name and Symbol	Slope (%)	Hydric Category	Hydric Percent of Map Unit	Hydric Minor Component, Percent, and Landform	Project Area (%)
Brookston silt loam (BsA)	0-2	Predominantly Hydric	95	Not Applicable (N/A)	9.1
Dodge silt loam (DdA)	0-2	Non-hydric	0	N/A	0.1
Dodge silt loam (DdB)	2-6	Non-hydric	0	N/A	6.4
Grays silt loam (GrB)	2-6	Non-hydric	0	N/A	0.5
Hochheim loam (HmB)	2-6	Non-hydric	0	N/A	1.4
Hochheim loam, eroded (HmB2)	2-6	Non-hydric	0	N/A	3.1
Hochheim loam, eroded (HmC2)	6-12	Non-hydric	0	N/A	5.7
Hochheim loam, eroded (HmD2)	12-20	Non-hydric	0	N/A	7.0
Houghton muck (HtA)	0-2	Hydric	100	N/A	2.2
Houghton muck (HtB)	2-6	Hydric	100	N/A	0.8
Kendall silt loam (KlA)	1-3	Predominantly Non-hydric	10	Pella, 10, depressions	2.7
Knowles silt loam (KwB)	2-6	Non-hydric	0	N/A	2.8
Lamartine silt loam (LmB)	0-3	Predominantly Non-hydric	15	Pella, 6-11, drainageways; and Ossian, 3-9, depressions	15.1
Mayville silt loam (MoB)	2-6	Non-hydric	0	N/A	0.9
Mundelein silt loam (MzfA)	0-3	Predominantly Non-hydric	15	Pella, 5-10, lakebeds (relict); and Poygan-drained, 5-10, lakebeds (relict)	2.9
Ogden muck (Oc)	0-2	Hydric	100	N/A	2.0
Palms muck (Pa)	0-2	Hydric	100	N/A	4.3
Pella silt loam (Ph)	0-2	Predominantly Hydric	87	N/A	21.0
Ritchey silt loam (RkB)	1-6	Non-hydric	0	N/A	2.0
Ritchey silt loam (RkE)	12-30	Non-hydric	0	N/A	0.9
St. Charles silt loam (ScB)	2-6	Predominantly Non-hydric	3	Pella, 2-5, drainageways	0.1
Theresa silt loam (ThB)	2-6	Non-hydric	0	N/A	6.7
Theresa silt loam (ThB2), eroded	2-6	Non-Hydric	0	N/A	1.8
Theresa silt loam (ThC2), eroded	6-12	Non-hydric	0	N/A	0.2
Water (W)	0	Non-hydric	0	N/A	0.3

Exhibit 3 also indicates that FEMA-mapped floodway and one-percent-annual-probability floodplain are present on the property associated with the unnamed tributary to Spring Creek.

Historical aerial photos of the project area were reviewed going back to 1941. Orthophotographs (2015, 2010, 2007, 2005, 2000, and 1995) and aerial photos (1990, 1980, 1970, 1963, 1950, and 1941) are attached (see Exhibits 4A-4L). This review is summarized in the following table:

Year	Changes in Land Use Observed on Aerial Photography from 1941 to 2015
1941	Agriculture is the dominant land use in and around the project area, which appears to encompass portions of two farms. The western farm contains farm-related buildings to the north, extensive cropland, a pasture in the center, and wooded lands to the southwest and southeast. The eastern farm has buildings to the north with remaining lands a mixture of cropland and pasture. The unnamed tributary to Spring Creek has been straightened but follows a somewhat different alignment compared to present day. Two crossings of the tributary are apparent, one to access cropland on the southwest part of the project area, the other providing access to the pasture.
1950	A southeasterly flowing ditch is apparent on the western farm, beginning south of the buildings, eventually draining into the tributary just west of the eastern crossing.
1963	Silver Spring Drive (CTH VV) has been widened along the northern edge of the property and Mary Hill Road has been improved as well. Small residential lots have been split from the northwestern corner of the property. Wet soils are evident on the western farm, including just west of the buildings and south of the buildings down to the tributary. The tributary channel has been re-aligned/dredged over much of its length on the property. A small ditch is apparent in the southeast part of the western farm that drains in a northeasterly direction to the tributary channel. A field in the southeastern corner of the eastern farm is idle.
1970	The cropland in the western part of the project area appears to be idle, likely due to wetness. Wetness signatures are apparent on the western farm at the southeast edge of the idle area, at the beginning of the small ditch to the southeast, and just north of the tributary. Wetness signatures are also evident on the eastern farm, straddling the eastern edge.
1980	A new driveway and buildings have been added on the north side of the western farm. A small ditch is apparent, beginning near one of the new buildings, draining southwesterly to the tributary. A pond has been excavated just south of the tributary and gravel has been added to a driveway leading to the pond from Mary Hill Road. Drain tiles are apparent on this photo just south of the buildings on the western farm as well as parts of the eastern farm. Development of the ski hill facility is underway immediately west of the project area. STH 164 has been built east of the project area.
1990	The southern part of the pasture on the western farm has been converted to cropland. The field south of the creek on the west side of the west farm is idle, likely due to wetness.
1995	Two large livestock buildings and a long driveway around the buildings have been built on the west farm.
2000	A small pond has been excavated just south of the farm buildings on the west farm.
2005	The alignment of the tributary channel on the eastern farm has been dredged further north compared to the 2000 photo. Commercial development is underway immediately east of the project area.
2007	No significant changes noted.
2010	Another commercial building has been built immediately east of the project area.
2015	No significant changes noted.

SEWRPC sanitary sewer service area mapping (Exhibit 5, Maps 1 & 2) shows the project area is located entirely within the planned sewer service area for the Village of Sussex and Town of Lisbon. The maps indicate that large portions of the property are designated as secondary environmental corridor (SEC), encompassing wetlands and woodland contiguous with the unnamed tributary to Spring Creek.

Amount and Types of Wetlands in the Project Area

Sixteen wetland plant community areas (PCAs) were identified and inventoried within the project area (see Exhibit 6, Maps 1 & 2). A list of vascular plant species observed during the field inspection was prepared for each plant community area as well as plant community type(s), dominant plant species, disturbances, and any critical plant and animal species (Exhibit 7). The table below summarizes characteristics for each PCA.

PCA Number	Acreage	PCA Type(s)	Dominant Species	Critical Species
1	0.32	Atypical (mowed) wetland and degraded fresh (wet) meadow	*Agrostis gigantea*--Redtop grass	None
2	2.10	Open water and fresh (wet) meadow (mostly degraded) associated with an unnamed tributary to Spring Creek	*Phalaris arundinacea*--Reed canary grass	None
3	0.26	Open water, degraded fresh (wet) meadow, and scattered lowland hardwoods associated with an excavated pond	*Phalaris arundinacea*--Reed canary grass	None
4	2.60	Atypical (farmed) wetland and small stands of degraded fresh (wet) meadow on a hillside seepage area	*Phalaris arundinacea*--Reed canary grass	None
5	10.40	Atypical (farmed) wetland associated with an unnamed tributary to Spring Creek	None	None

PCA Number	Acreage	PCA Type(s)	Dominant Species	Critical Species
6	1.60	Atypical (farmed) wetland and small stands of fresh (wet) meadow and shrub-carr (willow thicket)	*Phalaris arundinacea*--Reed canary grass	None
7	0.31	Atypical (farmed) wetland and degraded fresh (wet) meadow	*Phalaris arundinacea*--Reed canary grass	None
8	0.70	Atypical (farmed) wetland associated with the floodplain-wetland complex of an unnamed tributary to Spring Creek	*Phalaris arundinacea*--Reed canary grass	None
9	9.60	Hardwood swamp, degraded fresh (wet) meadow, atypical (farmed) wetland, and open water, associated with the floodplain-wetland complex of an unnamed tributary to Spring Creek	*Acer negundo*--Boxelder *Impatiens capensis*--Jewelweed *Phalaris arundinacea*--Reed canary grass	None
10	26.50	Atypical (farmed) wetland, atypical (mowed) wetland, and small stands of fresh (wet) meadow, associated with the floodplain-wetland complex of an unnamed tributary to Spring Creek	None	None
11	0.66	Open water of an excavated pond and atypical (mowed) wetland	None	None
12	1.19	Fresh (wet) meadow (partly degraded), shrub-carr (willow thicket), and small stands of degraded sedge meadow	*Phalaris arundinacea*--Reed canary grass *Salix interior*--Sandbar willow	None
13	7.40	Atypical (farmed) wetland and fresh (wet) meadow associated with the floodplain-wetland complex of an unnamed tributary to Spring Creek	*Phalaris arundinacea*--Reed canary grass	None
14	0.25	Atypical (farmed) wetland	*Veronica peregrina*--Purslane speedwell	None
15	26.70	Open water, fresh (wet) meadow, atypical (farmed) wetland, shrub-carr (willow thicket), and hardwood swamp associated with the floodplain-wetland complex of an unnamed tributary to Spring Creek	*Fraxinus pennsylvanica*--Green ash *Phalaris arundinacea*--Reed canary grass	None
16	0.83	Hardwood swamp with forested seeps	*Acer negundo*--Boxelder *Fraxinus pennsylvanica*--Green ash *Impatiens capensis*--Jewelweed	None

Wetland/Upland Boundary Explanation

SEWRPC staff inspected the surveyed 2011/2012 wetland boundaries in the field to determine of any changes have occurred. One-hundred forty-nine representative sample sites were identified within the project area to help inform any changes. The Wetland Determination Data Forms describing the findings at each sample site are attached as Exhibit 8. The locations of the sample sites are shown on Exhibit 6 (Maps 1 and 2).

Generally, the wetland boundaries were verified or re-staked using changes in vegetation composition, visual identification of wetland hydrology, the presence of hydric soils, and breaks in topography. It's important to note, however, that conditions in the agricultural fields warranted a somewhat different approach. First, agricultural fields were largely devoid of living vegetation during the May 2019 field inspections, with only cut corn stalks and a layer of corn debris left from the last harvest. If present, living vegetation typically only accounted for a very sparse cover (<3%). Further, while wetland hydrology may have historically been present over a larger portion on the property, thus allowing for the formation of extensive hydric soils (Exhibit 3), there have been on-going attempts to drain these soils via drain tiles, ditching, and straightening/dredging the tributary creek that runs through the property. In fact, hydrology had been altered since the 2011/2012 delineation by drain tile upgrades completed in the last few years (see Exhibit 14). Finally, hillside seepage areas were present in certain areas (PCA 4, for example). Consequently, the lack of live vegetation, extensive drained hydric soils, and the inability to use breaks in

topography, resulted in a reliance on hydrology measurements (saturation in the root zone & water table) to determine the effectiveness of drainage attempts.

Disturbed and Problematic Areas Encountered

Sample sites 8 and 126 were located in mowed turf areas which did not pass the Dominance Test for hydrophytic vegetation. Further, sample sites 26, 28, 31, 33, 35, 46, 49, 50, 52, 54, 64, and 79, were in agricultural fields devoid of vegetation. Also, sample sites 87, 95, 99, 112, and 117, were in agricultural fields with sparse vegetation that did not pass the Dominance Test for hydrophytic vegetation. However, all sites exhibited indicators of wetland hydrology and hydric soils. It was therefore determined that all sites were in wetland with "significantly disturbed" vegetation.

A hydric soil indicator could not be confirmed at sample sites 21 and 49 due to high water tables. The soil profile could not be pulled up beyond the dark surface to verify a depleted layer below, where it was very likely that the Thick Dark Surface (A12) indicator would have been met. Given that both wetland hydrology and hydrophytic vegetation were present, it was determined that sample sites 21 and 49 were in wetland with "naturally problematic" soils.

Sample sites 60, 61, and 67, were in unvegetated open water of the unnamed tributary to Brandy Brook. They all exhibited wetland hydrology indicators and had a hydric soil due to inundation. Thus, it was determined to be wetland with "naturally problematic" vegetation.

Sample sites 82 and 128 were in unvegetated open water of an excavated pond. The pond has been managed to prohibit growth of vegetation. Given the presence of wetland hydrology and hydric soils, both sites were determined to be wetland with "significantly disturbed" vegetation.

NAIP/FSA Image Review

A review of NAIP/FSA aerial images was conducted for seven potential farmed wetland areas within the project area, displayed as areas A through G on Exhibit 10. The aerial image displayed in Exhibit 10 (Year 2013) was chosen due to obvious wet soil signatures when compared other recent NAIP images with "wetter-than-normal" antecedent precipitation conditions. The results of this review are provided in tabular form on Exhibit 11. Available images of the questionable areas dating from 1991 to 2017 were reviewed. A determination of whether the image review indicated the likelihood of wetland hydrology in the farmed areas was based upon images taken with normal antecedent precipitation. Images taken with normal antecedent precipitation (2008, 2004, 2003, 2002, 2001, 2000, 1998, 1997, 1996, and 1991) are included in this report as Exhibit 12.

The review indicated that Areas A (100% wetness signatures), B (100%), C (100%), D (80%), E (100%), F (90%), and G (90%) all exhibited sufficient wetness signatures to indicate wetland hydrology is present. None of the areas lacked sufficient wetness signatures to indicate wetland hydrology was likely present. It should be noted, however, that the NAIP/FSA image review only indicates whether it is likely or unlikely that wetland hydrology is present. Ultimately, a field inspection is required to confirm wetland hydrology. It's important to note that most of the areas reviewed have undergone drain tile upgrades over the last few years (see Exhibit 14).

Draft NRCS wetland inventory mapping (Exhibit 13) indicates wetland (W) at the larger excavated pond and covering much of the wooded parts of the project area in the south-central part of the project area. Farmed wetland pasture (FWP) is mapped just southeast of the pond. Farmed wetland (FW) is mapped in the far southeastern corner of the project area. Small upland (U) areas are shown in the middle of the FWP lands and at the eastern edge of the property. Not inventoried (NI) lands are present to the north near the buildings and near the southern edge of the project area. Finally, prior converted (PC) cropland covers much

of the farmed hydric soils within the project area. PC areas are defined as wetland converted to cropland prior to December 1985, that was capable of being cropped and does not meet farmed wetland hydrology.

Other Considerations

The nonagricultural performance standards set forth in Section NR 151.125 of the *Wisconsin Statutes*, require establishment of a 75-foot impervious surface protective area to protect "highly susceptible" wetlands (fens, sedge meadows, ephemeral ponds, etc.). "Moderately susceptible" wetland types (USGS-mapped waterways and waterbodies, shrub-carr, forested wetlands with early successional species, shallow marsh, and fresh (wet) meadow) should have a 50-foot impervious surface protective area. Degraded portions of wetlands with 90 percent or greater cover by non-native species (Reed canary grass, Narrow-leaved cattail, etc.) and farmed wetlands are considered "less susceptible" requiring establishment of a 10- to 30-foot setback, depending on the average width of the wetland. Stormwater management facilities which are designed, constructed, and maintained for conveyance or treatment purposes are not subject to protective area performance standards as indicated in the 2015 WDNR Publication *Guidance for the Establishment of Protective Areas for Wetlands in Runoff Management Rules, Wisconsin Administrative Code NR 151*.

The degraded wetlands that make up PCA 1, the northern portion of PCA 2, PCA 3, PCA 4, PCA 5, PCA 6, PCA 7, PCA 8, the western edge and eastern one-half of PCA 9, PCA 10, the southeastern part of PCA 12, PCA 13, PCA 14, and the western edge of PCA 15, typically receive a 10- to 30-foot protective area setback.

The moderately susceptible wetlands (USGS-identified open water, fresh (wet) meadow, hardwood swamp, shrub-carr (willow thicket)) that make up the southern portion of PCA 2, western one-half of PCA 9, PCA 11, all but the southeastern portion of PCA 12, the main body of PCA 15, and PCA 16, typically receive a 50-foot protective area setback.

The designated protective area boundary is measured horizontally from the delineated wetland boundary to the closest impervious surface. The protective area requirements should be taken into consideration for any planned improvements within the project area. It is suggested that the property owner or their representative contact WDNR regarding approaches to meet the requirements. Finally, it is noted that no Federal or State regulatory jurisdiction determinations relative to any wetland permits or certifications are made under this report.

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CJJ/JLD/DLC/STH/mid
CA734-208 Hickory Hill Farms, Inc. Property - 2019 Visit WD Report (00251774).DOCX
300-2000

Exhibit 1. Topographic Map

Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

CTH VV Silver Spring Drive

Mary Hill Road

Unnamed Tributary to Spring Creek

STH 164

Legend

- Project Area
- Surface Water
- E Flow Direction

0 200 400
Feet

Contour Interval: 1 Foot
Date of Contour Lines: 2015
NAVD 88

Source: SEWRPC
Date of Photography: 2015
CA#734-208

Exhibit 2. WDNR Surface Water Data Viewer
Wisconsin Wetland Inventory Map

Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

CTH VV Silver Spring Drive
Unnamed Tributary to Spring Creek
Mary Hill Road
STH 164

Legend

- Project Area
- Wetland
- Wetland Indicators
- USGS Waterbody
- USGS Intermittent Waterway

0 210 420 Feet

Source: WDNR, USGS
Date of Photography: 2015
CA#716-93

Exhibit 3. Soils and Floodplain Map

Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend

- Project Area
- Floodway
- 100 Year Floodplain
- Hydric
- Non Hydric
- Predominantly Hydric
- Predominantly Non Hydric

0 200 400
Feet

Source: SEWRPC

Date of Photography: 2015
CA#734-208

CTH VV Silver Spring Drive
Unnamed Tributary to Silver Spring Creek
Silver Spring Creek
STH 164
Main Street

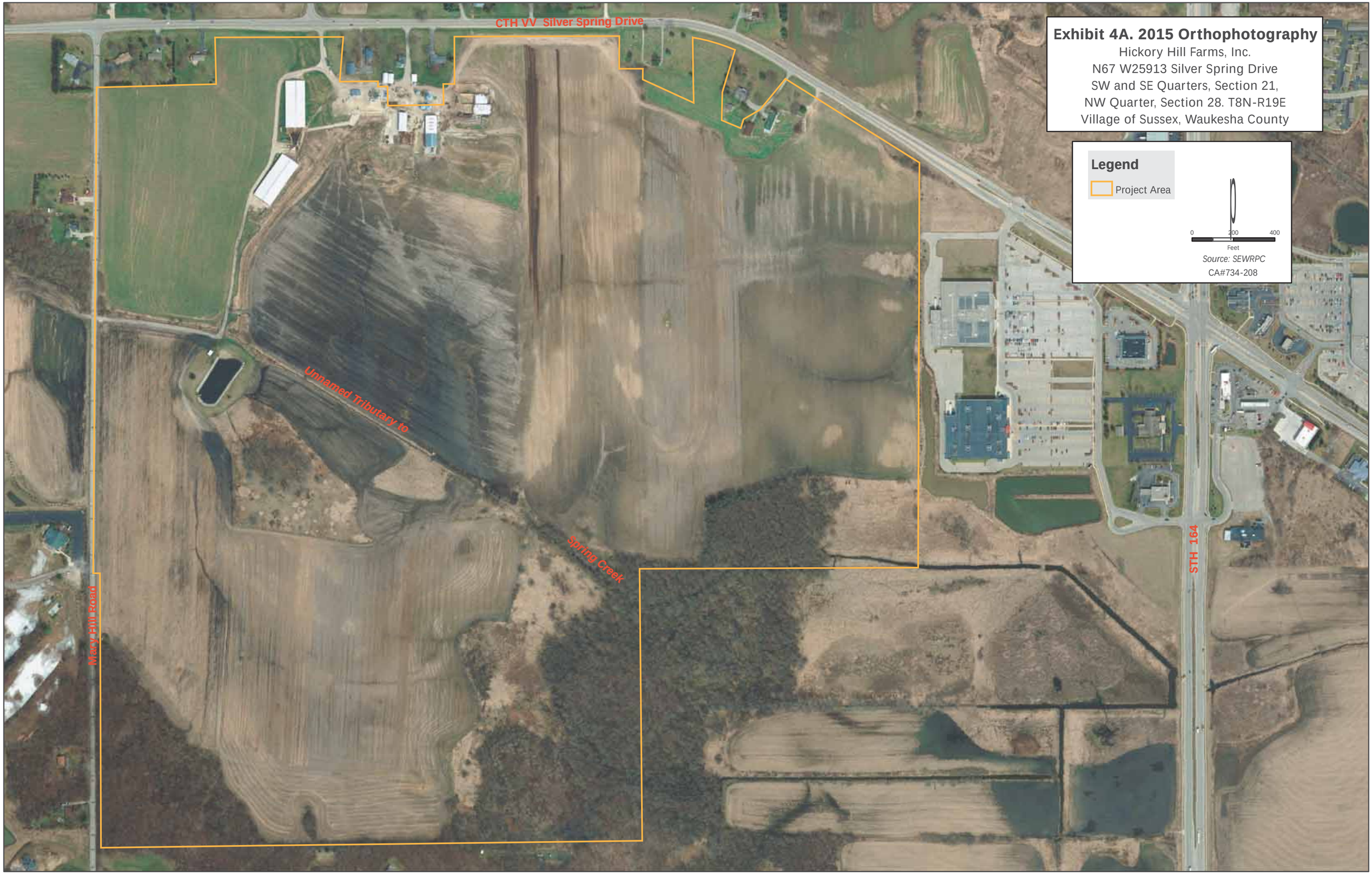

Exhibit 4A. 2015 Orthophotography
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

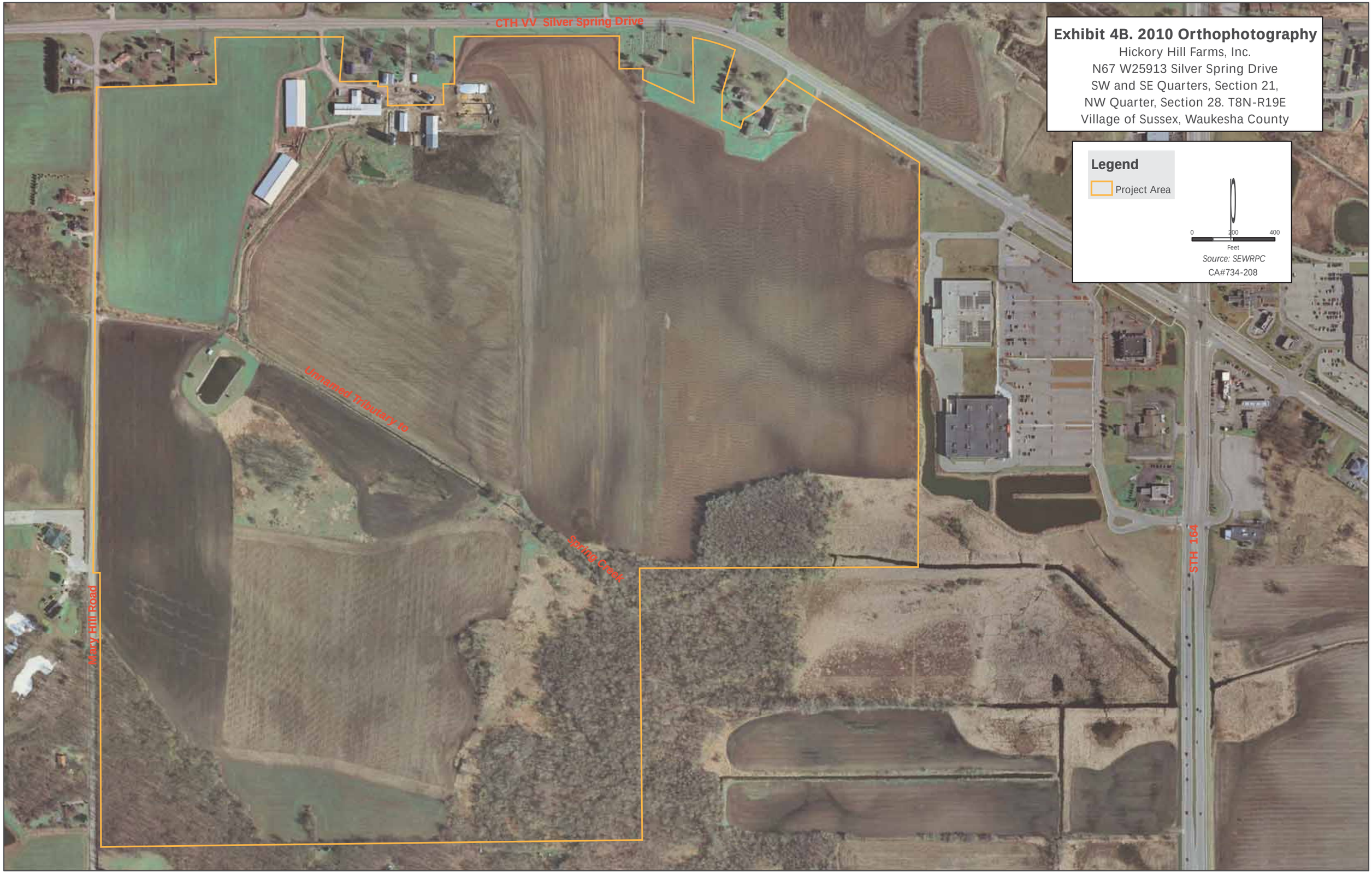

Exhibit 4B. 2010 Orthophotography

Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend

Project Area

0 200 400
Feet

Source: SEWRPC

CA#734-208

CTH VV Silver Spring Drive

Unnamed Tributary to

Spring Creek

Mary Hill Road

STH 164

Exhibit 4C. 2007 Orthophotography

Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend

Project Area

0 200 400
Feet

Source: SEWRPC

CA#734-208

Exhibit 4D. 2005 Orthophotography

Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend

Project Area

0 200 400
Feet

Source: SEWRPC

CA#734-208

Exhibit 4E. 2000 Orthophotography
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

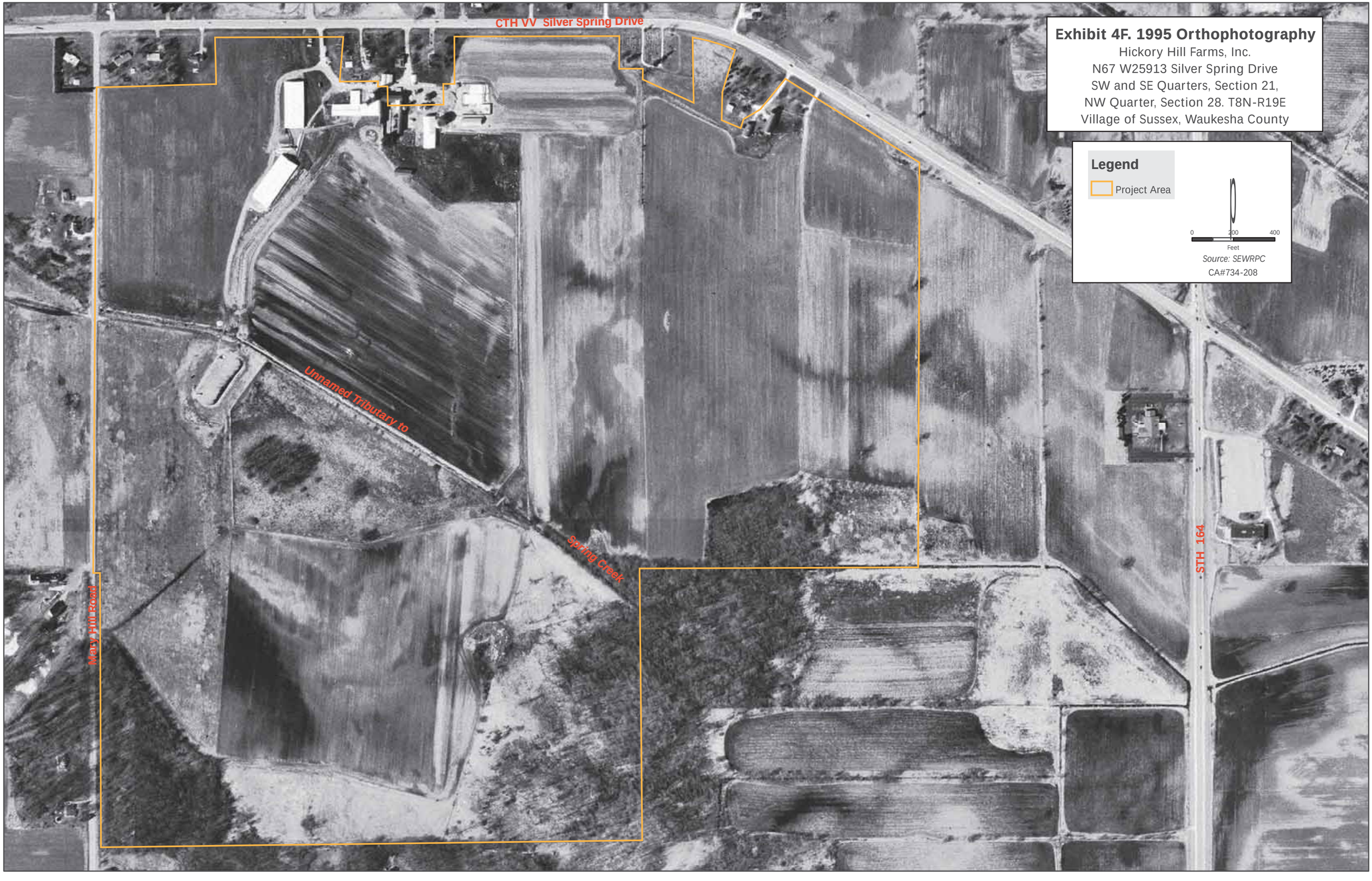

Exhibit 4F. 1995 Orthophotography
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

Exhibit 4G. 1990 Aerial Photograph
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

Exhibit 4H. 1980 Aerial Photograph

Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend

Project Area

0 200 400
Feet

Source: SEWRPC

CA#734-208

Exhibit 4I. 1970 Aerial Photograph
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

Exhibit 4J. 1963 Aerial Photograph
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

Exhibit 4K. 1950 Aerial Photograph
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

Exhibit 4L. 1941 Aerial Photograph
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
SW and SE Quarters, Section 21,
NW Quarter, Section 28. T8N-R19E
Village of Sussex, Waukesha County

Legend
Project Area

0 200 400
Feet

Source: SEWRPC
CA#734-208

Exhibit 5. Sanitary Sewer Service Area Map

Map 1 of 2

Hickory Hill Farms, Inc.

N67 W25913 Silver Spring Drive

SW and SE Quarters, Section 21, T8N-R19E

Village of Sussex, Waukesha County

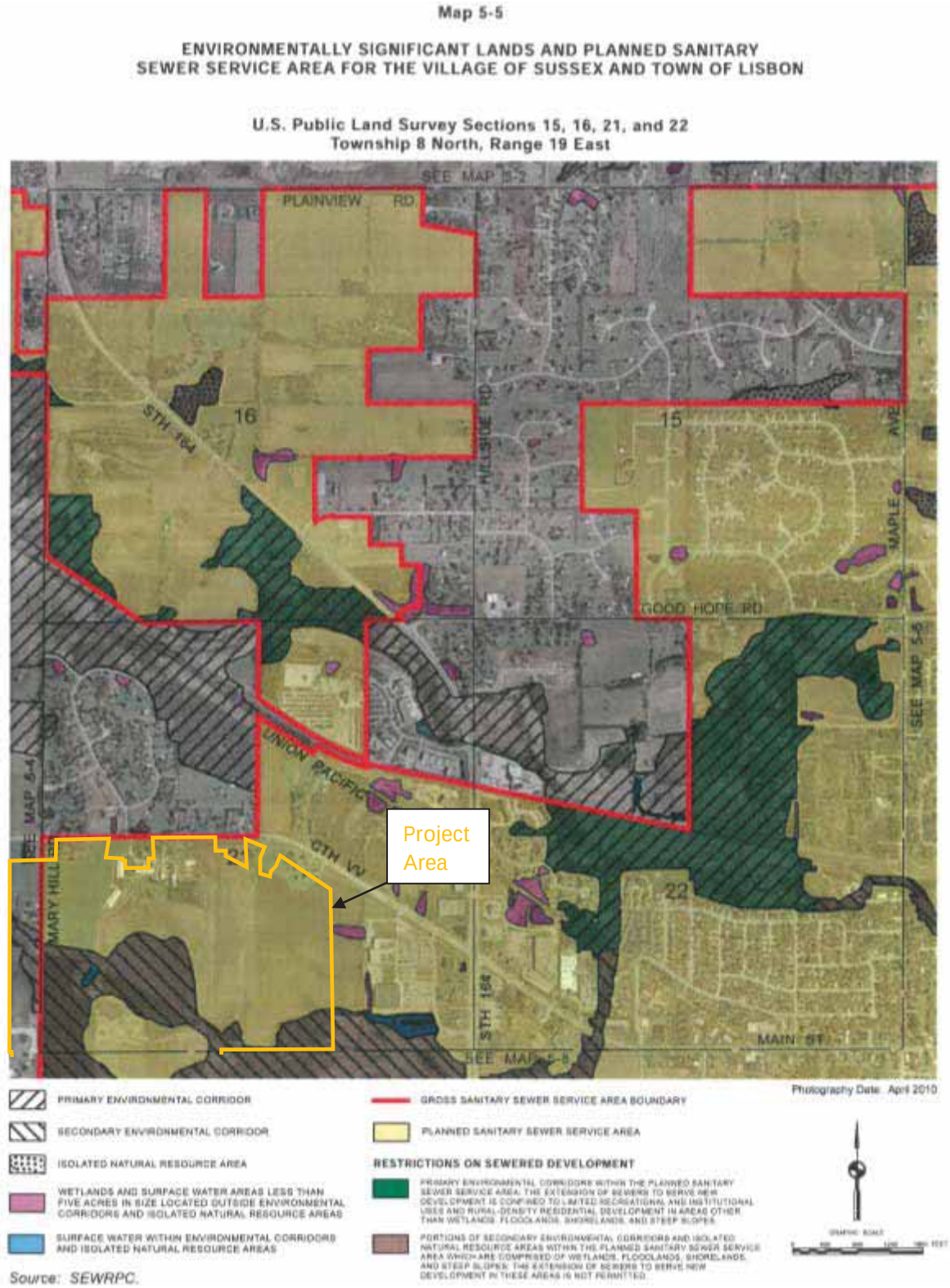

Exhibit 5. Sanitary Sewer Service Area Map

Map 2 of 2
Hickory Hill Farms, Inc.
N67 W25913 Silver Spring Drive
NW Quarter, Section 28, T8N-R19E
Village of Sussex, Waukesha County