Wetland Delineation Report

Proposed Good Harvest Market

City of Waukesha, Waukesha County, Wisconsin

RASN Project No. 1130220

December 12th, 2013

Wetland Delineation Report

Proposed Good Harvest Market
City of Waukesha, Waukesha County, Wisconsin

Prepared by:

Heather Patti, PWS
Lead Ecologist/Project Manager

Reviewed by:

Tina Myers, PWS
Ecologist/Project Manager

R.A. Smith National, Inc.
16745 W. Bluemound Road, Suite 200
Brookfield, WI 53005-5938
(262) 781-1000

Prepared for:

Good Harvest Market
1850 Meadow Lane
Pewaukee, WI 53072

December 12th, 2013

Table of Contents

Appendices

December 12th, 2013

INTRODUCTION

R.A. Smith National, Inc. (RASN) is pleased to provide this Wetland Delineation Report for an approximately 5.71-acre property along Meadow Lane in the City of Waukesha, Waukesha County, Wisconsin (Appendix 1, Figure 1). The wetland delineation was requested by Good Harvest Market.

The vacant 5.71-acre property is specifically located at the end of Meadow Lane near the Meadow Lane and Marshview Street intersection in the NW ¼ of Section 28, Township 7 North, Range 19 East (Appendix A, Figure 1). The property is bordered by vacant lands (wetland) to the south and west, Meadow Lane and commercial development to the north and residential & commercial development to the east.

The purpose of the wetland delineation was to identify the proximity and extent of wetlands within the property in association with a potential site development project. One wetland, hereby referred to as "W-1", was identified along the western and southern portion of the property which is associated with an un-named tributary to the Upper Fox River. The delineation is presented here in terms of qualifications, methodology, results, and conclusions.

STATEMENT OF QUALIFICATIONS

RASN provides wetland and ecological services including wetland delineation, assessment, permitting, and restoration. RASN ecologists offer a wide variety of technical experience in the natural resource field, and have successfully completed projects throughout the Midwestern and Northeastern United States.

Ms. Heather Patti, PWS and Ecologist with RASN, earned a Masters Degree in Botany and a minor in Ecology from North Carolina State University. Ms. Patti is experienced with a variety of aspects of ecological restoration, including wetland, mixed hardwood, and prairie restoration. She provides over 15 years of experience in wetland delineation, assessment, and mitigation. Ms. Patti attended the Basic & Advanced Wetland Delineation course offered by UW-LaCrosse in 2005 & 2013, became a WDNR Assured Wetland Delineator in 2009, attends the annual Critical Methods in Wetland Delineation refresher course in Madison, and recently attended the Hydric Soil Identification Course offered by UW-LaCrosse in 2011.

METHODOLOGY

The wetland delineation consisted of a map review followed by fieldwork to delineate the on-site wetlands. The fieldwork documented the presence and absence of hydrophytic vegetation, wetland hydrology, and hydric soil indicators outlined in the *U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual*, Technical Report Y-87-1 (1987) and subsequent guidance documents (USACE 1991, 1992), Guidelines for Submitting Wetland Delineations in Wisconsin to the St. Paul District Corps of Engineers (USACE 1996), the *Basic Guide to Wisconsin's Wetlands and Their Boundaries* (Wisconsin Department of Administration Coastal Management Program, 2005), and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral & Northeast Region, Version 2.0*, the guide for the USDA Natural Resources Conservation Services (NRCS) Field Indicators of Hydric Soils (version 7.0) in the United States, and in general accordance with Wisconsin Department of Natural Resources (WDNR) guidelines. The Northcentral & Northeast Regional USACE supplement was recently drafted for the purpose of bringing the existing 1987 Manual up to date for wetland delineations. This supplement is intended to be used as an additional guidance to the 1987 Manual, and is not its replacement.

16745 W. Bluemound Rd., Suite 200 ● Brookfield, WI 53005 ● (262) 781-1000 ● Fax (262) 781-8466
Appleton, WI ● Orange, CA ● Pittsburgh, PA ● rasmithnational.com

Prior to conducting fieldwork, RASN reviewed several maps for the property, including the United States Geological Survey (USGS) 7.5-minute quadrangle topographic map (Appendix 1, Figure 1), the NRCS Soil Survey Report for Waukesha County (Appendix 1, Figure 3), the Southeastern Wisconsin Regional Planning Commission (SEWRPC) historical aerial photographs dated 2000, 2005, and 2010 (Appendix 1, Figures 4A-C), the Wisconsin Wetland Inventory Map (Appendix 1, Figure 5), and NOAA's Advanced Hydrologic Prediction Service Map (Appendix 1, Figure 6).

Areas having wetland field indicators were evaluated in the field by RASN wetland scientist Ms. Heather Patti during a site visit on October 16th, 2013 and photo documented (Appendix 2). According to guidance described in the 1987 Manual and Northcentral & Northeast Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology are considered wetlands. RASN collected field data at six (6) sample points, using a transect and data point approach following the USACE Northcentral/Northeast Supplement wetland determination forms (Appendix 3). A sharpshooter shovel was used to dig the soil pits and to refine the wetland boundary. The delineated wetland areas were flagged and then surveyed by Landmark Engineering Sciences, Inc. surveyors. Pink wire flags with the words "Wetland Delineation" were used to stake the wetland boundaries and data point locations. The wetland boundaries and data point locations are depicted on Appendix 1, Figure 2. Observations were made at representative sample points along transects extending through upland and wetland areas.

RESULTS

The USGS topographic map (Appendix 1, Figure 1) depicts the location of the property and the Wetland Boundary Map (Appendix 1, Figure 2) depicts the delineated wetland boundaries overlaid onto a 2-foot contour base map. In general, site drainage is southwesterly down a steep slope towards the wetland and its associated tributary. As shown on Figure 2, the elevations within the site range from 890 feet msl at the highest point to 880 feet msl near the tributary which sits slightly lower than the wetland boundary.

According to the NRCS Soil Survey Report of Waukesha County, Wisconsin (Appendix 1, Figure 3), mapped soils within the parcel consist of Hochheim loam with 2-6% slopes (HmB2), Hochheim loam with 12-20% slopes (HoD3) and Houghton muck (HtA). Of these soil types, the NRCS hydric soil list classifies Houghton muck as a very poorly drained, hydric soil. In general, the dominant mapped soil type within W-1 was Houghton muck, although the wetland also extended into the Hochheim loam soil unit.

A review of aerial photographs from the years 2000, 2005, and 2010 (Appendix 1, Figures 4-C) was completed by RASN prior to the site visit. During this timeframe, there were essentially no changes to the land use within the project area other than a gradual increase in vegetative density. The un-named tributary to the Upper Fox River is evident on each of the aerials; at the time of the site visit it appeared to be approximately 8 feet wide with a defined bed and bank.

The Wisconsin Wetland Inventory (WWI) Map (Appendix 1, Figure 5) depicts two different wetland cover types within the vicinity of W-1, symbolized by T3/E2K, meaning Forested (T), Broad-leaved deciduous (3), Emergent (E), narrow-leaved persistent (2), palustrine (K) and S3/E2K, meaning Scrub/shrub (S), Broad-leaved deciduous (3), Emergent (E), narrow-leaved persistent (2), palustrine (K). The wetland cover types depicted on the WWI are in the same approximate location as W-1 and its associated tributary.

Recent precipitation data are used to assess the current season's hydrology. Precipitation data can help make determinations as to whether or not the wetland hydrology criterion has been met at recorded data points. Rainfall data recorded by the local WETS table and the National Weather Service's Advanced Hydrologic Prediction Service (AHPS) were used to evaluate the hydrology of the site prior to the October 16th site visit (Appendix 1, Figure 6). According to the local WETS table (Oconomowoc 1 SW, WI6200), average precipitation in the

Waukesha County area for the three months prior to the October 16th site visit (July through September) is 12.54 inches. Average rainfall for the month of September is typically 3.74 inches. Prior to the mid-October site visit, a total of 1.62 inches was recorded during the first two weeks of October according to Weather Channel's monthly data. Approximately 0.43 inches of rain was recorded within the week prior to the site visit. According to the AHPS map (Appendix 1, Figure 6), the late summer – early fall precipitation in the City of Waukesha for the October visit was approximately 2-4 inches below the normal range. This suggests that the surface or near-surface hydrology at the time of the October 16th, 2013 site visit was drier than normal for this time of year. The drier than normal conditions were noted on the datasheets in Appendix 3.

Field Investigation

All areas on the above-mentioned maps as being wetland or having wetland characteristics were evaluated in the field. A total of six (6) data points were examined and one (1) wetland totaling 1.2 acres (52,272 square feet) was delineated and surveyed (Appendix 1, Figure 2). Data points in both upland and wetland areas were sampled in the field to determine the wetland boundaries. The data sheets were compiled and are included in Appendix 3. The following is a description of the delineated wetland.

Wetland 1 – Shallow Marsh / Fresh (wet) Meadow / Lowland Hardwoods (Riparian)

Wetland 1 (W-1) is approximately 1.2 acre (52,272 square feet) in size and is associated with an un-named tributary to the Upper Fox River (Appendix 1, Figure 2). This wetland continues off site towards the west and south. The dominant plant community within W-1 is shallow marsh dominated by cattail species (*Typha* spp.), although portions of the outermost perimeter also included fresh (wet) meadow & lowland hardwoods dominated by reed canary grass (*Phalaris arundinacea*) with scattered box elder (*Acer negundo*), cottonwood (*Populus deltoides)* and green ash (*Fraxinus pennsylvanica*). The immediate adjacent upland consists mostly of disturbed old field dominated primarily by young box elder, Kentucky blue grass (*Poa pratensis*), Canada goldenrod (*Solidago canadensis*), Queen Anne's lace (*Daucus carota*), and other old-field weeds.

Hydrology in W-1 is sustained by surfacewater runoff from the surrounding landscape and baseflow of the un-named tributary. Photo #8 (Appendix 3) depicts the tributary as observed near Meadow Lane. Physical on-site evidence of wetland hydrology within W-1 included inundation, high water table, saturation in the upper 12 inches, water stained leaves, drainage patterns, microtopographic relief, and a positive FAC-Neutral test (see DP-2, DP-4 and DP-6 in Appendix 3).

In general, there was a steep topographic break between the upland and wetland along most of the delineated boundary. Topography sloped away from the wetland towards the east and north, and the transition in vegetation was apparent as cattail marsh and reed canary grass-dominated fresh (wet) meadow transitioned to old-field.

According to the NRCS Soil Survey of Waukesha County, Houghton muck (HtA) is the dominant mapped soil type within W-1. As mentioned earlier, the NRCS hydric soil list classifies Houghton muck as a very poorly drained, hydric soil. Three wetland data points were taken within W-1 (Appendix 3) within representative shallow marsh, lowland hardwoods and fresh (wet) meadow plant communities along the wetland boundary. The wetland soil samples resembled the typical profile descriptions of Houghton muck; all contained hydric soil characteristics that met the A1 (Histosol) or F6 (Redox dark Surface) NRCS Hydric Soil Indicators.

CONCLUSION

Based on the wetland assessment completed by RASN, one (1) wetland area associated with an un-named tributary to the Upper Fox River was identified on the property. A total of 1.2 acres (52,272 square feet) of wetland was delineated and surveyed by Landmark Engineering Sciences, Inc. surveyors.

This report is limited to the delineation of state and/or federally regulated wetlands on the property. However, there may be other regulated environmental features within the property (e.g., historical, archaeological, threatened or endangered species). Federal, state and/or local units of government may have regulatory authority to restrict land use within or close in proximity to other environmental features. For example, Wisconsin Adm. Code NR 151.12 requires buffers or a "protective area" from the top of the channel of streams, rivers and lakes, or at the delineated boundary of wetlands. The jurisdictional decision on the width of wetland buffers rests with the WDNR. The local unit(s) of government may also have protective area buffers from wetlands than that imposed under NR 151.

The U.S. Army Corps of Engineers has regulatory authority over waters of the U.S. including adjacent wetlands, and the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Ch. 30 Wisconsin State Statues, Act 6, and NR 103 Wisconsin Administrative Code. Local jurisdictions may also have regulations through zoning ordinances. Our client, Good Harvest Market, respectfully requests verification of the delineated wetlands by the USACE.

APPENDICES

Appendix 1: Figures

Figure 1:	**USGS Map/Site Location Map**
Figure 2:	**Wetland Boundary Map (Landmark Engineering Sciences, Inc)**
Figure 3:	**NRCS Soil Survey of Waukesha County**
Figures 4 A-C:	**Aerial Photographs (2000, 2005 & 2010)**
Figure 5:	**Wisconsin Wetland Inventory Map**
Figure 6:	**NOAA Advanced Hydrologic Prediction Service Map**

Appendix 2: Site Photos
Appendix 3: Wetland Delineation Data Forms – Northcentral/Northeast Region

Appendices

Appendix 1: Figures

Appendix 2: Site Photographs

Appendix 3: Wetland Determination Data Forms – Northcentral/Northeast Region

Appendix 1: Figures

Figure 1: USGS Map/Site Location Map

Figure 2: Wetland Boundary Map (Landmark Engineering Services, Inc)

Figure 3: NRCS Soil Survey of Waukesha County

Figures 4A-C: Aerial Photographs (2000, 2005, 2010)

Figure 5: Wisconsin Wetland Inventory Map

Figure 6: 90-day Departure from Normal Precipitation Map

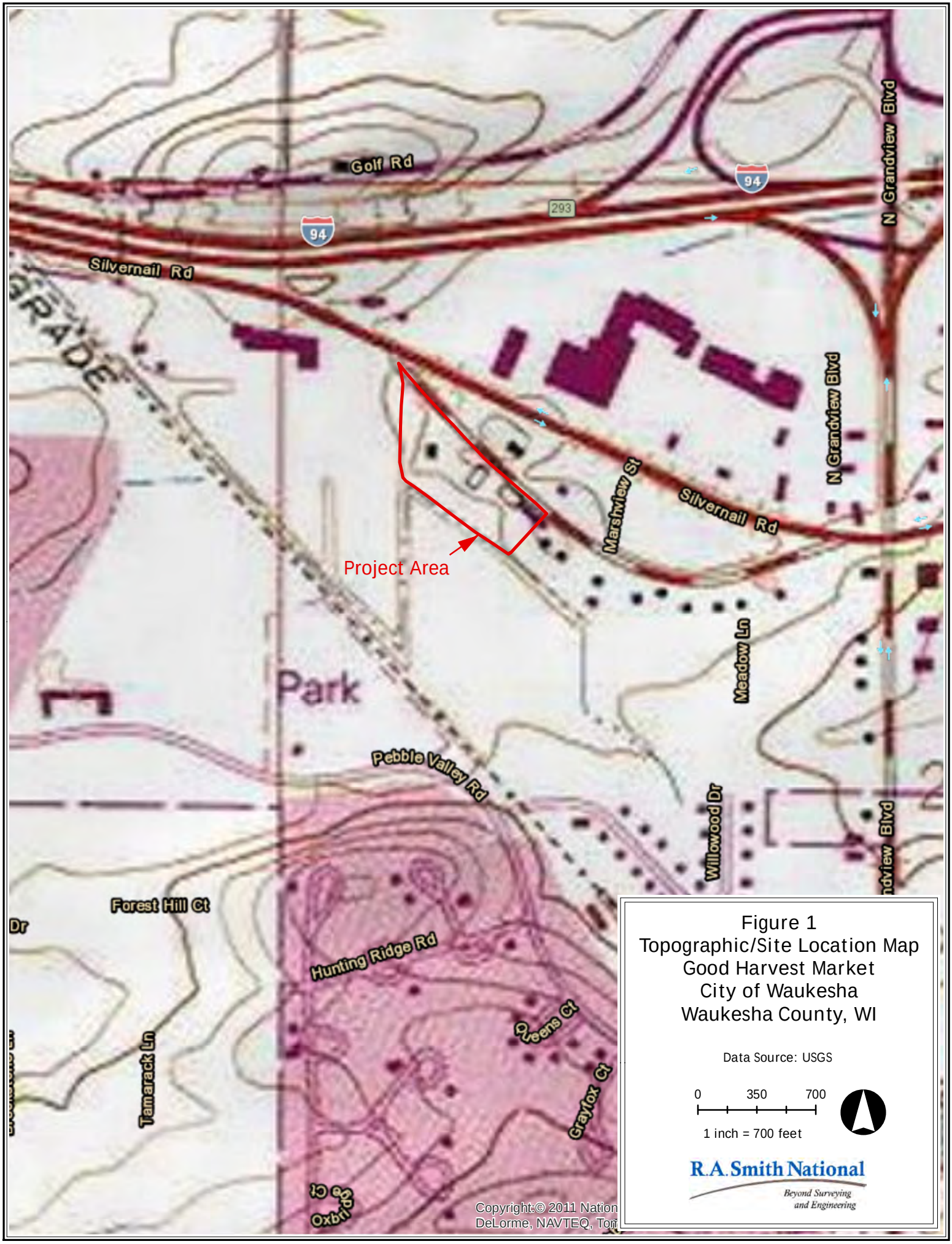


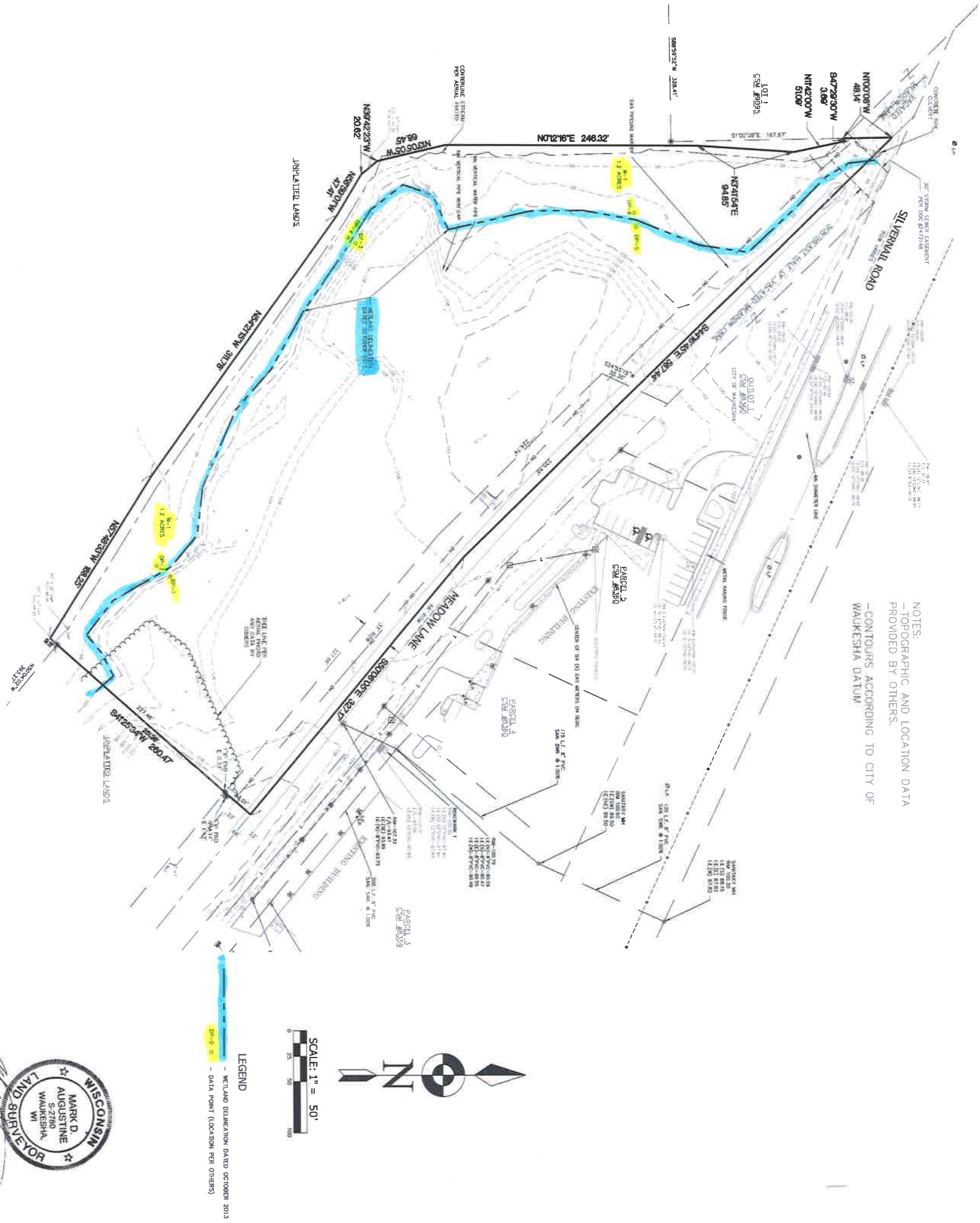
Figure 1
Topographic/Site Location Map
Good Harvest Market
City of Waukesha
Waukesha County, WI

Data Source: USGS

0 350 700

1 inch = 700 feet

R.A. Smith National
Beyond Surveying and Engineering



MARK D. AUGUSTINE S-2780 WAUKESHA, WI
WISCONSIN LAND SURVEYOR

PROJECT # 2160.00
DATE 12-3-13
DRAWN BY BK
DESIGNED BY MA
REVISIONS
SHEET NUMBER 1
OF 1 SHEETS

GOOD HARVEST MARKET
MEADOW LANE
WAUKESHA, WI 53188

Figure 2. **WETLAND MAP**

LAND MARK
ENGINEERING SCIENCES, INC.
3021 MINOT LANE, SUITE 200, WAUKESHA, WI 53188-4453
PHONE: 414-719-2769

Legend	
Map Unit Symbol	Map Unit Name
HmB2	Hochheim loam, 2 to 6 percent slopes, eroded
HoD3	Hochheim soils, 12 to 20 percent slopes, severly eroded
HtA	Houghton muck, 0 to 2 percent slopes (C)
Oc	Ogden muck (C)
PrA	Pistakee silt loam, 1 to 3 percent slopes (I)

Figure 3
NRCS Web Soil Survey Map
Good Harvest Market
City of Waukesha
Waukesha County, WI

Data Source:
USGS, NRCS Web Soil Survey

0 200 400

1 inch = 400 feet

R.A. Smith National
Beyond Surveying and Engineering

Figure 4A
2000 Aerial Photo Map
Good Harvest Market
City of Waukesha
Waukesha County, WI

Data Source:
Southeastern Wisconsin
Regional Planning Commission

0 75 150

1 inch = 150 feet

R.A. Smith National
Beyond Surveying and Engineering

Copyrigi

Figure 4B
2005 Aerial Photo Map
Good Harvest Market
City of Waukesha
Waukesha County, WI

Data Source:
Southeastern Wisconsin
Regional Planning Commission

0 75 150

1 inch = 150 feet

R.A. Smith National
Beyond Surveying and Engineering

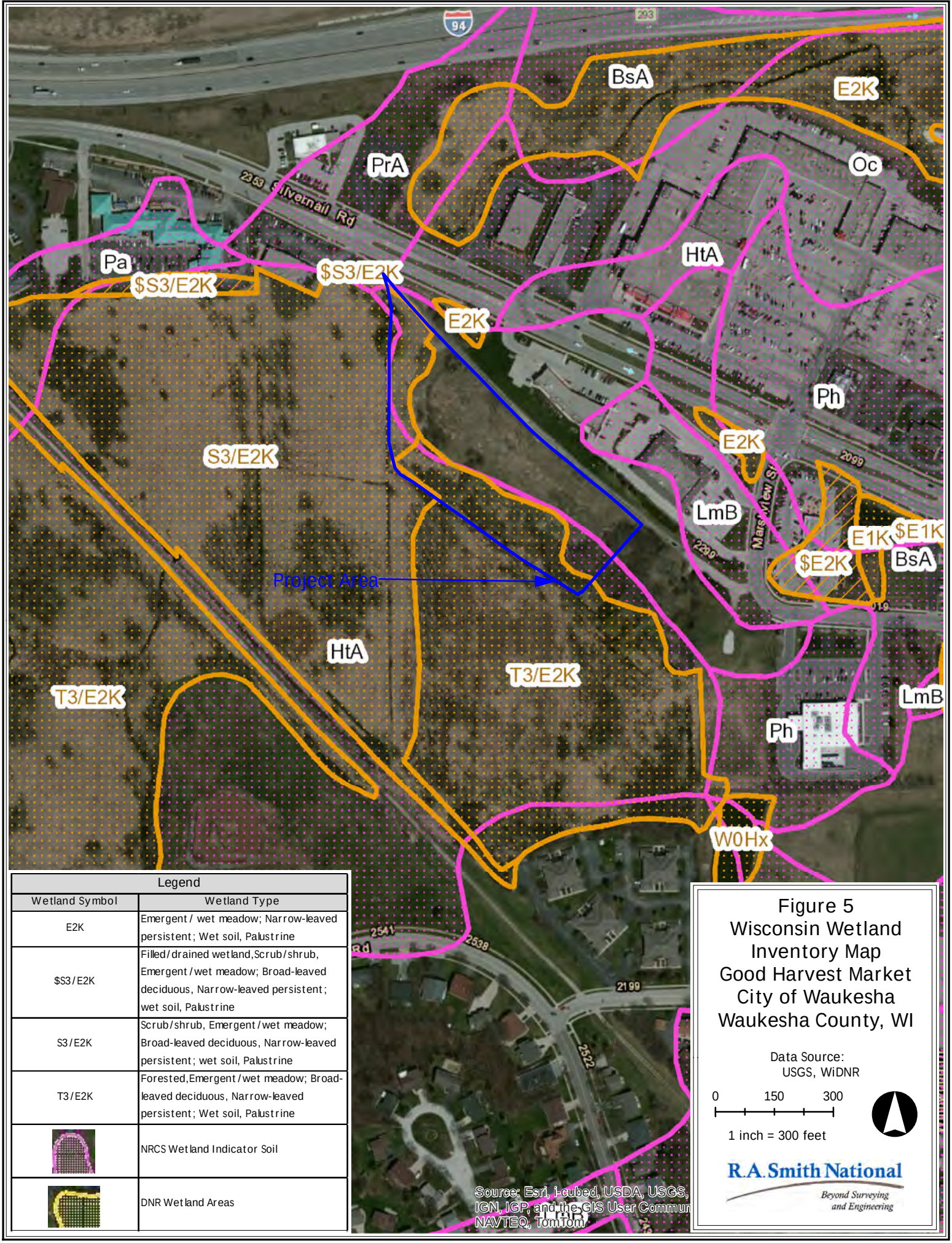
Figure 4C
2010 Aerial Photo Map
Good Harvest Market
City of Waukesha
Waukesha County, WI

Data Source:
Southeastern Wisconsin
Regional Planning Commission

0 75 150

1 inch = 150 feet

R.A. Smith National
Beyond Surveying and Engineering



Legend	
Wetland Symbol	Wetland Type
E2K	Emergent / wet meadow; Narrow-leaved persistent; Wet soil, Palustrine
$S3/E2K	Filled/drained wetland,Scrub/shrub, Emergent/wet meadow; Broad-leaved deciduous, Narrow-leaved persistent; wet soil, Palustrine
S3/E2K	Scrub/shrub, Emergent/wet meadow; Broad-leaved deciduous, Narrow-leaved persistent; wet soil, Palustrine
T3/E2K	Forested,Emergent/wet meadow; Broad-leaved deciduous, Narrow-leaved persistent; Wet soil, Palustrine
	NRCS Wetland Indicator Soil
	DNR Wetland Areas

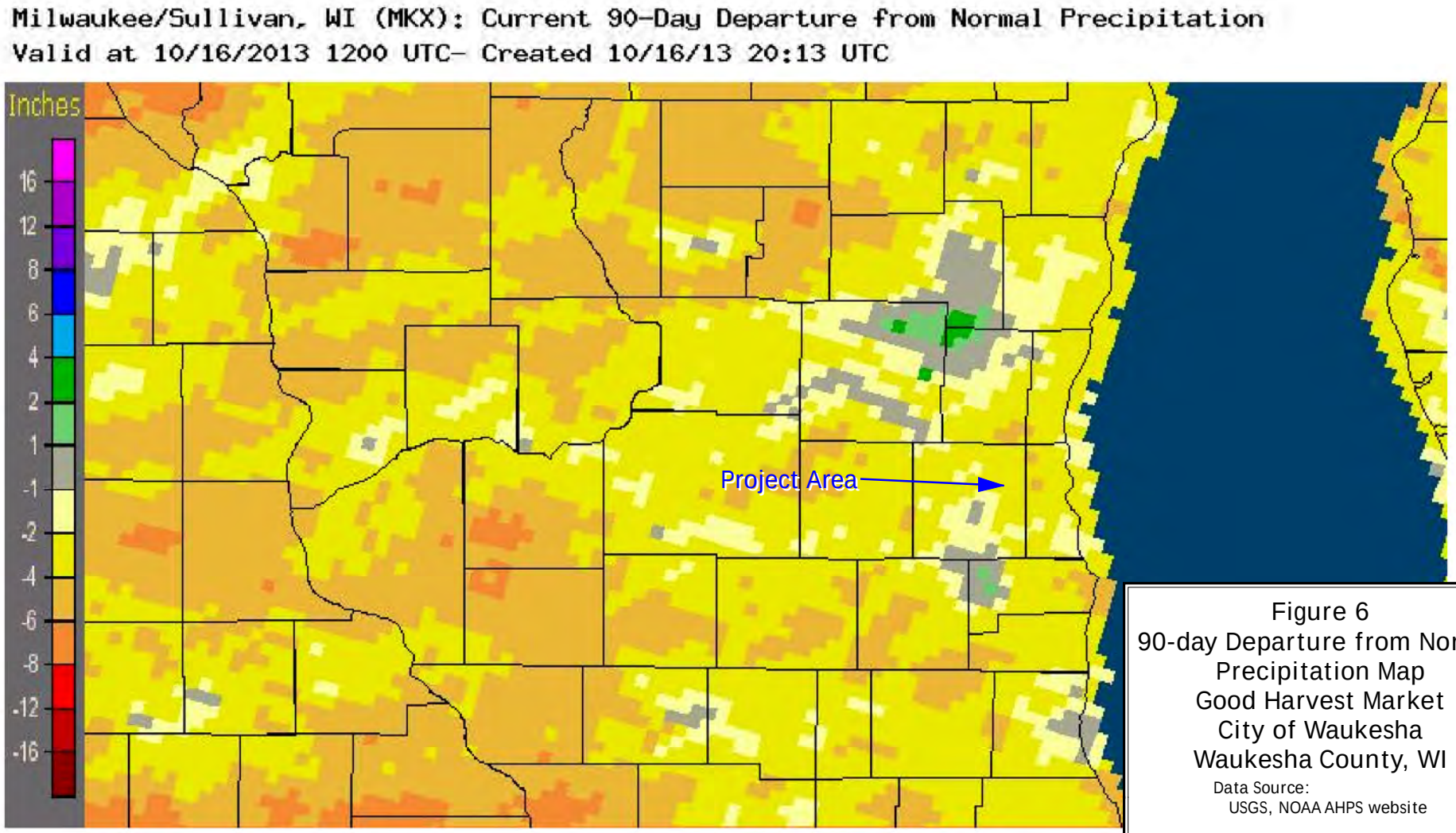
Figure 5
Wisconsin Wetland Inventory Map
Good Harvest Market
City of Waukesha
Waukesha County, WI

Data Source:
USGS, WiDNR

0 150 300

1 inch = 300 feet

R.A. Smith National
Beyond Surveying and Engineering



The project area falls within -2" to -4" of the normal precipitation range.

Figure 6
90-day Departure from Normal Precipitation Map
Good Harvest Market
City of Waukesha
Waukesha County, WI

Data Source:
USGS, NOAA AHPS website

NOT TO SCALE

R.A. Smith National
Beyond Surveying and Engineering

Appendix 2:

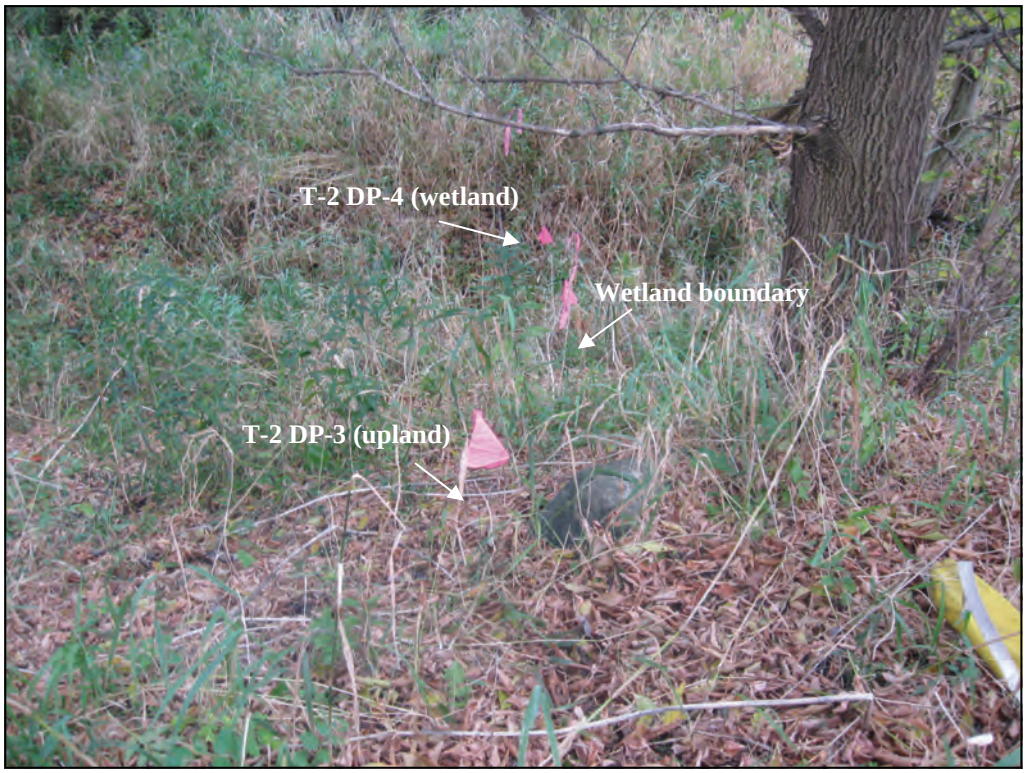
Site Photographs

Photograph 1 (10/16/2013): General view of W-1, facing west.

Photograph 2 (10/16/2013): View of upland data point T-1 DP-1, facing downslope towards the wetland. A 20-30% slope is evident here along the wetland boundary.

Photograph 3 (10/16/2013): View of wetland data point T-1 DP-2, facing west.

Photograph 4 (10/16/2013): Another general view of W-1, facing northwest across the wetland (and off-site).



Photograph 5 (10/16/2013): View of transect T-2, facing downslope towards W-1. A 20-40% slope is evident here along the wetland boundary.

Photograph 6 (10/16/2013): Another general view of W-1, facing upslope towards the on-site uplands. The wetland is dominated by reed canary grass, box elder and garlic mustard in this area.

Photograph 7 (10/16/2013): View of data transect T-3, facing west towards W-1.

Photograph 8 (10/16/2013): View of the un-named Upper Fox tributary, which runs along the western property line then turns southeast.

Appendix 3:

Wetland Determination Data Forms – Northcentral/Northeast Region

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: **Waukesha Good Harvest Market** City/County: **Waukesha/Waukesha** Sampling Date: **October 16, 2013**

Applicant/Owner: **Good Harvest Market, Inc** State: **WI** Sampling Point: **T-1 DP-1 upl**

Investigator(s): **Heather Patti, PWS** Section, Township, Range: **NW 1/4 Sec 28, T7N R19E**

Landform (hillslope, terrace, etc.): **footslope** Local relief (concave, convex, none): **convex**

Slope % **30%** Lat: Long: Datum:

Soil Map Unit Name: **Hochheim soils (HoD3), 12-20% slopes, non-hydric** WWI Classification: **none mapped**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ***X** (if no, explain in Remarks)

Are Vegetation **N** Soil **N** or Hydrology **N** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____

Are Vegetation **N** Soil **N** or Hydrology **N** naturally problematic? (if needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	Yes ____	No **X**	Is the Sampled Area		
Hydric Soil Present?	Yes ____	No **X**	within a Wetland?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No **X**	If yes, optional wetland site ID:		

Remarks: ***Current climatic conditions are 2-4 inches drier than normal for this time of year (see AHPS map, Figure 6, Appendix 1)**

There is a strong topo break between the upland and wetland boundary.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No **X**	Depth (inches): ____
Water Table Present?	Yes ____	No **X**	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No **X**	Depth (inches): ____

Indicators of Wetland Hydrology Present? Yes ____ No **X**

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

USGS Topographic Map (Figure 1), NRCS Soil Survey (Figure 3), 2000, 2005, and 2010 aerial photographs (Figures 4A-C), Wisconsin Wetland Inventory (Figure 5), and AHPS precipitation map (Figure 6)

Remarks: **No wetland hydrology indicators are present.**

VEGETATION - Use scientific names for plants.

Sampling Point: **T-1 DP-1 upl**

Tree Stratum (Plot size: **30'R**)	Absolute % Cover	Dominant Species	Indicator Status
1. ***Acer negundo***	**65**	**Y**	**FAC**
2.			
3.			
4.			
5.			
6.			
7.			
	65 = Total Cover		

Sapling/Shrub Stratum (Plot size: **15'R**)			
1. ***Syringa vulgaris*** **(planted)**	**5**	**Y**	**UPL**
2.			
3.			
4.			
5.			
6.			
7.			
	5 = Total Cover		

Herb Stratum (Plot size: **5'R**)			
1. ***Bromus inermis***	**100**	**Y**	**UPL**
2. ***Rhamnus cathartica***	**5**	**N**	**FAC**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	105 = Total Cover		

Woody Vine Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test Worksheet:

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

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **33%** (A/B)

Prevalence Index Worksheet:

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

Prevalence Index B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at brest height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? **Yes** _____ **No** **X**

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

The hydrophytic vegetation criterion is not met. This is an old-field/shrub thicket community upslope of the wetland boundary.

SOIL

Sampling Point: **T-1 DP-1 upl**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 7	**10YR 3/2**	**100**	**-**				**silt loam**	**small - med cobble throughout**
7-14	**10 YR 4/3**	**100**	**-**				**silty cl loam**	
14-18+	**10 YR 4/3**	**90**	**10 YR 5/6**	**10**	**C**	**M**	**silty cl loam**	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark SURface (S7) (**LRR R, MLRA 149B**)
- ___ Plolyvalue Below Surface (S8) (**LRR R MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Plolyvalue Below Surface (S8) (**LRR K L)**
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: **n/a**

Depth (inches): **n/a**

Hydric Soil Present? Yes ___ No **X**

Remarks: **The hydric soil criterion has not been met.**

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waukesha Good Harvest Market | City/County: Waukesha/Waukesha | Sampling Date: October 16, 2013

Applicant/Owner: Good Harvest Market, Inc | State: WI | Sampling Point: T-1 DP-2 wtd

Investigator(s): Heather Patti, PWS | Section, Township, Range: NW 1/4 Sec 28, T7N R19E

Landform (hillslope, terrace, etc.): stream terrace | Local relief (concave, convex, none): concave

Slope %: n/a | Lat: | Long: | Datum:

Soil Map Unit Name: Houghton muck (HtA), hydric | WWI Classification: T3/E2K

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No *X (if no, explain in Remarks)

Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation **Y Soil N or Hydrology N 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 X	No ____	Is the Sampled Area		
Hydric Soil Present?	Yes X	No ____	within a Wetland?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional wetland site ID:	W-1	

Remarks: *Current climatic conditions are 2-4 inches drier than normal for this time of year (see AHPS map, Figure 6, Appendix 1)

All three wetland criteria have been met.

HYDROLOGY

Wetland Hydrology Indicators:

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

X Surface Water (A1)	X Water-Stained Leaves (B9)	Secondary Indicators (minimum of two required)
X High Water Table (A2)	____ Aquatic Fauna (B13)	____ Surface Soil Cracks (B6)
X Saturation (A3)	____ Marl Deposits (B15)	____ Drainage Patterns (B10)
____ Water Marks (B1)	X Hydrogen Sulfide Odor (C1)	____ Moss Trim Lines (B16)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Dry-Season Water Table (C2)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Crayfish Burrows (C8)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Saturation Visible on Aerial Imagery (C9)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Stunted or Stressed Plants (D1)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Geomorphic Position (D2)
____ Sparsely Vegetated Concave Surface (B8)		____ Shallow Aquitard (D3)
		X Microtopographic Relief (D4)
		X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches):	~1"
Water Table Present?	Yes X	No ____	Depth (inches):	surface
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	surface

Indicators of Wetland Hydrology Present? Yes X No ____

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

USGS Topographic Map (Figure 1), NRCS Soil Survey (Figure 3), 2000, 2005, and 2010 aerial photographs (Figures 4A-C), Wisconsin Wetland Inventory (Figure 5), and AHPS precipitation map (Figure 6)

Remarks: Wetland hydrology criterion has been met. This wetland is associated with the un-named Upper Fox tributary to the south.

VEGETATION - Use scientific names for plants.

Sampling Point: **T-1 DP-2 wtd**

Tree Stratum (Plot size: **n/a**)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: **15'R**)			
1. ***Frangula alnus***	**10**	**Y**	**FAC**
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size: **5'R**)			
1. ***Typha x glauca***	**100**	**Y**	**OBL**
2. ***Phalaris arundinacea***	**20**	**N**	**FACW**
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	120	= Total Cover	

Woody Vine Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

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

Prevalence Index B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at brest height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? **Yes** **X** **No**

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

The hydrophytic vegetation criterion is met. This is a shallow marsh plant community.

SOIL Sampling Point: **T-1 DP-2 wtd**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20+	**N 2.5/0**	**100**	**-***				**muck**	

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

Hydric Soil Indicators:

- **X** Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark SURface (S7) (**LRR R, MLRA 149B**)
- ___ Plolyvalue Below Surface (S8) (**LRR R MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Plolyvalue Below Surface (S8) (**LRR K L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: **n/a**

Depth (inches): **n/a**

Hydric Soil Present? Yes ***X** No ___

Remarks: **The hydric soil criterion is met.**

***Redox features are likely masked by the very dark matrix color.**

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: **Waukesha Good Harvest Market** City/County: **Waukesha/Waukesha** Sampling Date: **October 16, 2013**

Applicant/Owner: **Good Harvest Market, Inc** State: **WI** Sampling Point: **T-2 DP-3 upl**

Investigator(s): **Heather Patti, PWS** Section, Township, Range: **NW 1/4 Sec 28, T7N R19E**

Landform (hillslope, terrace, etc.): **footslope** Local relief (concave, convex, none): **convex**

Slope % **25-30%** Lat: Long: Datum:

Soil Map Unit Name: **Hochheim soils (HoD3), 12-20% slopes, non-hydric** WWI Classification: **none**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ***X** (if no, explain in Remarks)

Are Vegetation **N** Soil **N** or Hydrology **N** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____

Are Vegetation **N** Soil **N** or Hydrology **N** 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 ****X**	No ____	Is the Sampled Area		
Hydric Soil Present?	Yes ____	No **X**	within a Wetland?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No **X**	If yes, optional wetland site ID:		

Remarks: ***Current climatic conditions are 2-4 inches drier than normal for this time of year (see AHPS map, Figure 6, Appendix 1)**

****problem invasive species (reed canary grass) that commonly grows in disturbed areas can often grow upslope.**

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No **X**	Depth (inches):	
Water Table Present?	Yes ____	No **X**	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ____	No **X**	Depth (inches):	

Indicators of Wetland Hydrology Present? Yes ____ No **X**

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

USGS Topographic Map (Figure 1), NRCS Soil Survey (Figure 3), 2000, 2005, and 2010 aerial photographs (Figures 4A-C), Wisconsin Wetland Inventory (Figure 5), and AHPS precipitation map (Figure 6)

Remarks: **No wetland hydrology indicators are present. There is a very steep topographic break along the wetland boundary in this area.**

VEGETATION - Use scientific names for plants.

Sampling Point: **T-2 DP-3 upl**

Tree Stratum (Plot size: **30'R**)	Absolute % Cover	Dominant Species	Indicator Status
1. *Acer negundo*	80	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: **5'R**)			
1. *Phalaris arundinacea*	50	Y	FACW
2. *Alliaria petiolata*	40	Y	FACU
3. *Rhamnus cathartica*	10	N	FAC
4. *Pastinaca sativa*	5	N	UPL
5. *Arctium minus*	3	N	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	108	= Total Cover	

Woody Vine Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test Worksheet:

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

Total Number of Dominant Species Across All Strata: **3** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **67%** (A/B)

Prevalence Index Worksheet:

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

Prevalence Index B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at brest height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? **Yes X** **No**

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

The hydrophytic vegetation criterion is met, but the *Phalaris arundinacea* is growing well upslope from the wetland boundary. This is an old field community with scattered box elder trees.

SOIL

Sampling Point: **T-2 DP-3 upl**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100	-				silt loam	small cobble throughout profile
16-20	10YR 4/3	70	7.5YR 4/6	10	C	M	silty clay loam	
	10YR 5/3	20						

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark SURface (S7) (**LRR R, MLRA 149B**)
- ___ Plolyvalue Below Surface (S8) (**LRR R MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Plolyvalue Below Surface (S8) (**LRR K L)**
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: **n/a**

Depth (inches): **n/a**

Hydric Soil Present? Yes ___ No **X**

Remarks: **Hydric soil criterion has not been met.**

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waukesha Good Harvest Market | City/County: Waukesha/Waukesha | Sampling Date: October 16, 2013

Applicant/Owner: Good Harvest Market, Inc | State: WI | Sampling Point: T-2 DP-4 wtd

Investigator(s): Heather Patti | Section, Township, Range: NW 1/4 Sec 28, T7N R19E

Landform (hillslope, terrace, etc.): stream terrace | Local relief (concave, convex, none): concave

Slope %: 0% | Lat: | Long: | Datum:

Soil Map Unit Name: Houghton muck (HtA), hydric | WWI Classification: T3/S3K mapped adjacent to ROW

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No *X (if no, explain in Remarks)

Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation N Soil N or Hydrology N 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 X	No ____	Is the Sampled Area		
Hydric Soil Present?	Yes X	No ____	within a Wetland?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____	If yes, optional wetland site ID:	W-1	

Remarks: *Current climatic conditions are 2-4 inches drier than normal for this time of year (see AHPS map, Figure 6, Appendix 1)

All 3 wetland criteria are met.

HYDROLOGY

Wetland Hydrology Indicators:

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

___ Surface Water (A1)	X Water-Stained Leaves (B9)		Secondary Indicators (minimum of two required)
X High Water Table (A2)	___ Aquatic Fauna (B13)		___ Surface Soil Cracks (B6)
X Saturation (A3)	___ Marl Deposits (B15)		___ Drainage Patterns (B10)
___ Water Marks (B1)	X Hydrogen Sulfide Odor (C1)		___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)		___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)		___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)		___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)		___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)		___ Geomorphic Position (D2)
___ Sparsely Vegetated Concave Surface (B8)			___ Shallow Aquitard (D3)
			X Microtopographic Relief (D4)
			X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):	____
Water Table Present?	Yes X	No ____	Depth (inches):	surface
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches):	surface

Indicators of Wetland Hydrology Present? Yes X No ____

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

USGS Topographic Map (Figure 1), NRCS Soil Survey (Figure 3), 2000, 2005, and 2010 aerial photographs (Figures 4A-C), Wisconsin Wetland Inventory (Figure 5), and AHPS precipitation map (Figure 6)

Remarks: The wetland hydrology criterion has been met. This wetland is associated with the un-named Upper Fox tributary to the southwest.

VEGETATION - Use scientific names for plants.

Sampling Point: **T-2 DP-4 wtd**

Tree Stratum (Plot size: **30'R**)	Absolute % Cover	Dominant Species	Indicator Status
1. *Fraxinus pennsylvanica*	75	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: **15'R**)			
1. *Acer negundo*	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	

Herb Stratum (Plot size: **5'R**)			
1. *Phalaris arundinacea*	100	Y	FACW
2. *Urtica dioica*	10	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	110	= Total Cover	

Woody Vine Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **3** (A)

Total Number of Dominant Species Across All Strata: **3** (B)

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

Prevalence Index Worksheet:

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

Prevalence Index B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at brest height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes X No ___

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

The hydrophytic vegetation criterion is met. This is a lowland hardwood plant community dominated by green ash and reed canary grass.

SOIL Sampling Point: **T-2 DP-4 wtd**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20+*	**N 2.5/0**	**100**					**muck**	

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

Hydric Soil Indicators:

- X Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark SURface (S7) (**LRR R, MLRA 149B**)
- ___ Plolyvalue Below Surface (S8) (**LRR R MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Plolyvalue Below Surface (S8) (**LRR K L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: **n/a**

Depth (inches): **n/a**

Hydric Soil Present? Yes X No ___

Remarks: **The hydric soil criterion is met.**

***Redox features are likely masked by the very dark matrix color.**

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: **Waukesha Good Harvest Market** City/County: **Waukesha/Waukesha** Sampling Date: **October 16, 2013**

Applicant/Owner: **Good Harvest Market, Inc** State: **WI** Sampling Point: **T-3 DP-5 upl**

Investigator(s): **Heather Patti** Section, Township, Range: **NW 1/4 Sec 28, T7N R19E**

Landform (hillslope, terrace, etc.): **footslope** Local relief (concave, convex, none): **convex**

Slope % **~10%** Lat: Long: Datum:

Soil Map Unit Name: **Hochheim soils (HoD3), 12-20% slopes, non-hydric** WWI Classification: **none**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ***X** (if no, explain in Remarks)

Are Vegetation **N** Soil **N** or Hydrology **N** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____

Are Vegetation **N** Soil **N** or Hydrology **N** naturally problematic? (if needed, explain any answers in Remarks)

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

Hydrophytic Vegetation Present?	Yes ____	No **X**	Is the Sampled Area		
Hydric Soil Present?	Yes ____	No **X**	within a Wetland?	Yes ____	No **X**
Wetland Hydrology Present?	Yes ____	No **X**	If yes, optional wetland site ID:		

Remarks: ***Current climatic conditions are 2-4 inches drier than normal for this time of year (see AHPS map, Figure 6, Appendix 1)**

None of the 3 wetland criteria are met.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No **X**	Depth (inches): ____
Water Table Present?	Yes ____	No **X**	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No **X**	Depth (inches): ____

Indicators of Wetland Hydrology Present? **Yes** ____ **No** **X**

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

USGS Topographic Map (Figure 1), NRCS Soil Survey (Figure 3), 2000, 2005, and 2010 aerial photographs (Figures 4A-C), Wisconsin Wetland Inventory (Figure 5), and AHPS precipitation map (Figure 6)

Remarks: **No wetland hydrology indicators are present.**

VEGETATION - Use scientific names for plants.

Sampling Point: **T-3 DP-5 upl**

Tree Stratum (Plot size: **n/a**)	Absolute % Cover	Dominant Species	Indicator Status
1. *Acer negundo*	10	Y	FAC
2. *Populus deltoides*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	

Sapling/Shrub Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: **5'R**)			
1. *Poa pratensis*	80	Y	FACU
2. *Agropyron repens*	40	Y	UPL
3. *Solidago canadensis*	20	N	FACU
4. *Phalaris arundinacea*	20	N	FACW
5. *Daucus carota*	5	N	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	165	= Total Cover	

Woody Vine Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test Worksheet:

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

Total Number of Dominant Species Across All Strata: **4** (B)

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	20	x 3 =	60
FACU species	100	x 4 =	400
UPL species	45	x 5 =	225
Column Totals:	185 (A)		725 (B)

Prevalence Index B/A = **3.9**

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at brest height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? Yes _____ No **X**

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

The hydrophytic vegetation criterion is close but is not met. The PI is well above 3.0 as well. This is an old field community dominated by Kentucky bluegrass and scattered box elder and cottonwood trees.

SOIL

Sampling Point: **T-3 DP-5 upl**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/1	100	-				silt loam	small cobble throughout profile
1-15	10YR 3/2	100	-				silt loam	
15-18+	10YR 3/2	90	10 YR 5/6	10	C	M	silty clay loam	

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

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark SURface (S7) (**LRR R, MLRA 149B**)

___ Plolyvalue Below Surface (S8) (**LRR R MLRA 149B**)
___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
___ Loamy Mucky Mineral (F1) (**LRR K, L**)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ 2cm Muck (A10) (**LRR K, L, MLRA 149B**)
___ Coast Prairie Redox (A16) (**LRR K, L, R**)
___ 5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
___ Dark Surface (S7) (**LRR K, L**)
___ Plolyvalue Below Surface (S8) (**LRR K L)**
___ Thin Dark Surface (S9) (**LRR K, L**)
___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
___ Red Parent Material (TF2)
___ Very Shallow Dark Surface (TF12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: **n/a**

Depth (inches): **n/a**

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: **Hydric soil criterion has not been met. Like the other data points, there is (natural) cobble throughout the soil profile.**

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waukesha Good Harvest Market | City/County: Waukesha/Waukesha | Sampling Date: October 16, 2013
Applicant/Owner: Good Harvest Market, Inc | State: WI | Sampling Point: T-3 DP-6 wtd
Investigator(s): Heather Patti | Section, Township, Range: NW 1/4 Sec 28, T7N R19E
Landform (hillslope, terrace, etc.): stream terrace | Local relief (concave, convex, none): concave
Slope % 0% | Lat: | Long: | Datum:
Soil Map Unit Name: Hochheim soils (HoD3), 12-20% slopes, non-hydric | WWI Classification: S3/E2K
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ___ No *X (if no, explain in Remarks)
Are Vegetation N Soil N or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ___
Are Vegetation N Soil N or Hydrology N 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 X	No ___	Is the Sampled Area	
Hydric Soil Present?	Yes X	No ___	within a Wetland?	Yes X No ___
Wetland Hydrology Present?	Yes X	No ___	If yes, optional wetland site ID:	W-2

Remarks: *Current climatic conditions are 2-4 inches drier than normal for this time of year (see AHPS map, Figure 6, Appendix 1)

All 3 wetland criteria are met at this data point.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches):	
Water Table Present?	Yes X	No ___	Depth (inches):	~10"
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	surface

Indicators of Wetland Hydrology Present? Yes X No ___

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

USGS Topographic Map (Figure 1), NRCS Soil Survey (Figure 3), 2000, 2005, and 2010 aerial photographs (Figures 4A-C), Wisconsin Wetland Inventory (Figure 5), and AHPS precipitation map (Figure 6)

Remarks: Wetland hydrology criterion has been met. This wetland is associated with the un-named tributary to the west and south.

VEGETATION - Use scientific names for plants.

Sampling Point: **T-3 DP-6 wtd**

Tree Stratum (Plot size: **30'R**)	Absolute % Cover	Dominant Species	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: **15'R**)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: **5'R**)			
1. ***Phalaris arundinacea***	**100**	**Y**	**FACW**
2. ***Cirsium arvense***	**20**	**N**	**FACU**
3. ***Solidago gigantea***	**10**	**N**	**FACW**
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
	130 = Total Cover		

Woody Vine Stratum (Plot size: **n/a**)			
1.			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

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

Prevalence Index B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6 cm) or more in diameter at brest height (DBH), regardless of height.

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present? **Yes** **X** **No** ____

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

The hydrophytic vegetation criterion is met. This is a fresh (wet) meadow plant community within W-1.

SOIL Sampling Point: **T-3 DP-6 wtd**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100	-				silt loam	some small cobble present
4-13	10YR 3/1	90	7.5YR 4/6	10	C	M	silty clay loam	
13-18+	10YR 5/1	85	7.5YR 4/6	15	C	M	silty clay	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark SURface (S7) (**LRR R, MLRA 149B**)
- ___ Plolyvalue Below Surface (S8) (**LRR R MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Plolyvalue Below Surface (S8) (**LRR K L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: **n/a**

Depth (inches): **n/a**

Hydric Soil Present? **Yes** X **No** ___

Remarks: **The hydric soil criterion has been met.**