

numbered orange wire flags were used to mark sample plots along the wetland boundary. JSD Professional Services, Inc. surveyed the wetland boundaries and sample plot locations and a wetland boundary map overlaid onto a one-foot contour map and recent aerial basemap was prepared by RASN. The data sheets were compiled and are included in Appendix 4. The following are detailed descriptions the delineated wetlands:

Wetland 1 – Shallow Marsh / Fresh (wet) Meadow

As shown on Figure 2 in Appendix 1, W-1 is 0.26 acre within the Study Area. This wetland is dominated by reed canary grass (*Phalaris arundinacea*), giant reed grass (*Phragmites australis*), narrow leaved cattail (*Typha angustifolia*), grass-leaved goldenrod (*Euthamia graminifolia*), and lesser poverty rush (*Juncus tenuis*). The adjacent upland meadow contained many weed species, especially Kentucky blue grass (*Poa pratensis*), Queen Anne's lace (*Daucus carota*), Canada goldenrod (*Solidago canadensis*), bird's foot trefoil (*Lotus corniculatus*) and gray dogwood (*Cornus racemosa*). Please refer to the site photos in Appendix 3 for various depictions of W-1 and the adjacent uplands.

In general, there was gradual shift in topography and plant community composition along the boundary of W-1. Since W-1 is located in a slight depression, hydrology in W-1 is likely sustained by surface water runoff from the surrounding landscape. The wetland appears to have problematic hydrology with a seasonal hydroperiod; however, other physical on-site evidence of wetland hydrology was present including one primary indicator and two secondary indicators. The primary indicators included oxidized rhizospheres present on living roots, while the secondary indicators included geomorphic position and a positive FAC-Neutral test. Problem hydrology was noted on the wetland data form since a water table and saturation were absent at the time of the site visit.

According to the NRCS Soil Survey of Milwaukee County (Figure 3), Blount silt loam (B1A) is the dominant mapped soil type within W-1 and the immediate adjacent upland. The NRCS hydric soil list classifies Blount silt loam as a somewhat poorly drained soil with hydric inclusions. Two wetland data points were examined within W-1 (DP-2 & DP-14 in Appendix 4) which met the F3 (Depleted matrix) NRCS Hydric Soil Indicator. In addition, one upland data point (DP-1 in Appendix 4) was examined but it did not meet any wetland criteria.

Wetland 2 – Shallow Marsh / Fresh (wet) Meadow

As shown on Figure 2 in Appendix 1, W-2 is the largest of the three wetlands and is 4.75-acres within the Study Area. It is shown as being an Emergent wet meadow (E1K) on Figure 5 which is consistent with the shallow marsh and fresh (wet) meadow plant communities observed by RASN. The mapped WWI wetland is fairly consistent with the size and location of W-2, except that it does not include one of the two ditches as observed and delineated by RASN. This wetland is directly connected with a ditched waterway about 8 to 10 feet wide that flows south along the far western end of the Study Area. This waterway originates from Mud Lake to the northwest of the site and ultimately connects with the Root River. The wetland is dominated by primarily by giant reed grass and narrow-leaved cattail and is bordered by the same low quality upland meadow that surrounds W-1. Please refer to the site photos in Appendix 3 for various depictions of W-2 and the adjacent uplands.

In general, there was gradual to moderate shift in topography and plant community composition along most of the boundary of W-2 except in the location of the two ditches where topography was steep. Since W-2 is located in a large depression, hydrology is likely sustained by surface water runoff from the surrounding upland landscape with some direct input from the two ditches. In addition, it likely receives some baseflow hydrology from the adjacent waterway. Other physical on-site evidence of wetland hydrology included secondary indicators such as crayfish burrows, geomorphic position and a positive FAC-Neutral test.

According to the NRCS Soil Survey of Milwaukee County (Figure 3), Blount silt loam (BIA) is the dominant mapped soil type within W-1 and the immediate adjacent upland, while Lawson silt loam (Lo) is also present along the waterway. All soil profiles within W-2 were observed in the mapped Blount silt loam soil unit. The NRCS hydric soils list classifies Blount silt loam as a somewhat poorly drained soil with hydric inclusions. Four wetland data points were examined within W-2 (DP-4, DP-6, DP-7, and DP-9 in Appendix 4) and all but one met the F3 (Depleted matrix) NRCS Hydric Soil Indicator. Only a 6-inch profile was examined at DP-7 due to potential contaminated soils from the adjacent Superfund site. In addition, three upland data points (DP-3, DP-5, and DP-8 in Appendix 4) were examined but did not meet any hydric soil indicators.

Wetland 3 –Fresh (wet) Meadow

As shown on Figure 2 in Appendix 1, W-3 is a small, depressional wetland 0.06 acres in size. It is not shown as being a WWI mapped wetland on Figure 5. This wetland is low in quality, and dominated by primarily by giant reed grass. The immediate adjacent is an upland meadow with primarily scattered black locust (*Robimia pseudoacacia*) trees and weedy species especially Kentucky blue grass, Queen Anne's lace, Canada goldenrod, and English plantain (*Plantago lanceolata*). In addition, there were large patches of giant reed grass growing upslope in many of the uplands which may be attributed to stormwater runoff from the adjacent parking lot. Please refer to the site photos in Appendix 3 for various depictions of W-3 and the adjacent uplands.

In general, there was gradual shift in topography and plant community composition along the boundary of W-3. Since W-3 is located in a slight depression, hydrology in W-3 is likely sustained by surface water runoff from the surrounding upland landscape. The portion of W-3 within the Study Area appears to have problematic hydrology with a seasonal hydroperiod; however, physical on-site evidence of wetland hydrology were present including geomorphic position and a positive FAC-Neutral test.

According to the NRCS Soil Survey of Milwaukee County (Figure 3), Blount silt loam (BIA) is the dominant mapped soil type within W-3. The NRCS hydric soil list classifies Blount silt loam as a somewhat poorly drained soil with hydric inclusions. One wetland data point was examined within W-3 (DP-11 in Appendix 4) which met the F6 (Depleted matrix) NRCS Hydric Soil Indicator. One upland data point (DP-12 in Appendix 4) was examined in the immediate adjacent upland while two others (DP-10 and DP-13) were examined in giant reed grass dominated upland areas, but none met all three wetland criteria.

CONCLUSION

Based on the wetland assessment completed by RASN, three (3) wetlands were identified within the Study Area (Figure 2). The total acreage of wetland within the Study Area is 5.07 acres. One waterway flows southerly along the far western property boundary. The waterway is fed by Mud Lake to the north and ultimately connects to the Root River which is roughly 2.5 miles southeast of the site. Based on aerial photographs, W-2 is connected to the waterway and thus the wetland is expected to fall under both US Army Corps of Engineers (Corps) and Wisconsin Department of Natural Resources (WDNR) jurisdictions. There was no direct connection of W-1 and W-3 to a waterway as observed by RASN. The final jurisdictional determinations of all of the wetlands rests with the Corps and WDNR.

RASN ecologists are required by the WDNR to provide their professional judgment on wetland susceptibility per revised NR 151 guidance (Guidance #3800-2015-02) (Appendix 5). In general, RASN believes W-1 would best fit into the moderately susceptible category, and W-2 and W-3 would fall into the least susceptible category.

The wetland boundary staked in the field by R.A. Smith National, Inc. is a professional finding based on accepted USACE and WDNR methodology at the time the wetlands were delineated. This wetland delineation field work and report is not intended to meet the requirements of an SEWRPC Environmental Corridor, WDNR Endangered Species Review, a navigability determination, or the location of either the Ordinary High Water Mark or floodplain.

Wetlands and waterways that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act (CWA) and the jurisdictional regulatory authority lies with the USACE. Additionally, the WDNR has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapters 30 and 281 Wisconsin State Statutes, and Wisconsin Administrative Codes NR 103, 299, 350, and 353. In addition, the USACE and WDNR have jurisdictional authority to determine which features are exempt including stormwater ponds and conveyance features. If the client proposes to modify an existing stormwater feature, an Artificial Determination Exemption would need to be submitted. See the form on the WDNR Wetland Identification website (fee involved) <http://dnr.wi.gov/topic/wetlands/identification.html>. Furthermore, municipalities, townships and counties may have local zoning authority over certain areas or types of wetland and waterways. The determination that a wetland or waterway is subject to regulatory jurisdiction is made independently by the agencies.

Any activity in the delineated wetland may require U.S. Army Corps of Engineers permits and State of Wisconsin Department of Natural Resources Water Quality Certification, and local government permits. If the Client proceeds to change, modify or utilize the property in question without obtaining authorization from the appropriate regulatory agency, it will be done at the Client's own risk and R.A. Smith National, Inc shall not be responsible or liable for any resulting damages.

REFERENCES

- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Lichvar, R.M. 2013. *The National Wetland Plant List: 2013 wetland ratings*. Phytoneuron 2013-49: 1-241
- Munsell Color Corporation. 2010. *Munsell Soil Color Charts*.
- Midwest Regional Climate Center. 2015. *Climate Data for Milwaukee County, Wisconsin*. <http://agacis.rccacis.org/55025/>.
- National Geographic Society. 2015. *USGS Topographic Map*. ArcGIS Online.
- Natural Resource Conservation Service. 2014. *National Hydric Soils List*. National_Hydric_Soils_List_2014.xls.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. *Web Soil Survey*. <http://websoilsurvey.nrcs.usda.gov>.
- USACE. 2015. *Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources*. St. Paul District Regulatory, St. Paul, Minnesota.
- USACE. 2012. “*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*,” ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE. 2010. “*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*,” ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), *National Hydric Soil List*.
- USDA, NRCS. 2010. *Field Indicators of Hydric Soils in the United States*, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.
- Wisconsin Department of Natural Resources. 2015. *Surface Water Data Viewer*. <http://dnrmaps.wi.gov/sl/?Viewer=SWDV>.
- Wisconsin Department of Natural Resources, Wisconsin Coastal Management Program. 1995. *Basic Guide to Wisconsin Wetlands and Their Boundaries*. Madison, WI

Appendices

Appendix 1: Figures

Appendix 2: WETS Table Analysis, NRCS WETS Table & Daily Precipitation Table

Appendix 3: Site Photographs

Appendix 4: Wetland Determination Data Forms – Midwest Region

Appendix 5: NR 151 Wetland Susceptibility Table

Appendix 1: Figures

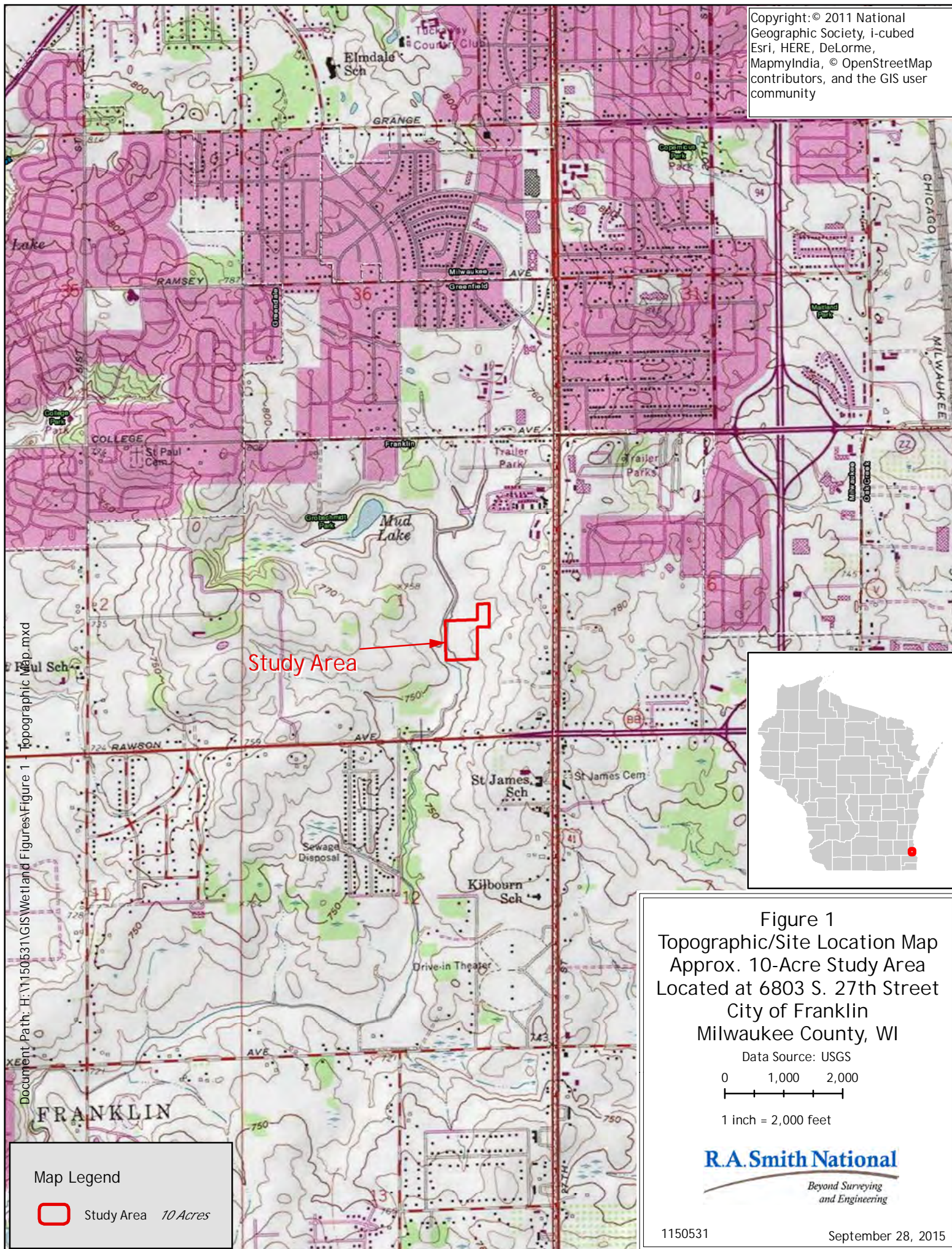
Figure 1: USGS Map/Site Location Map

Figure 2: Wetland Boundary Map

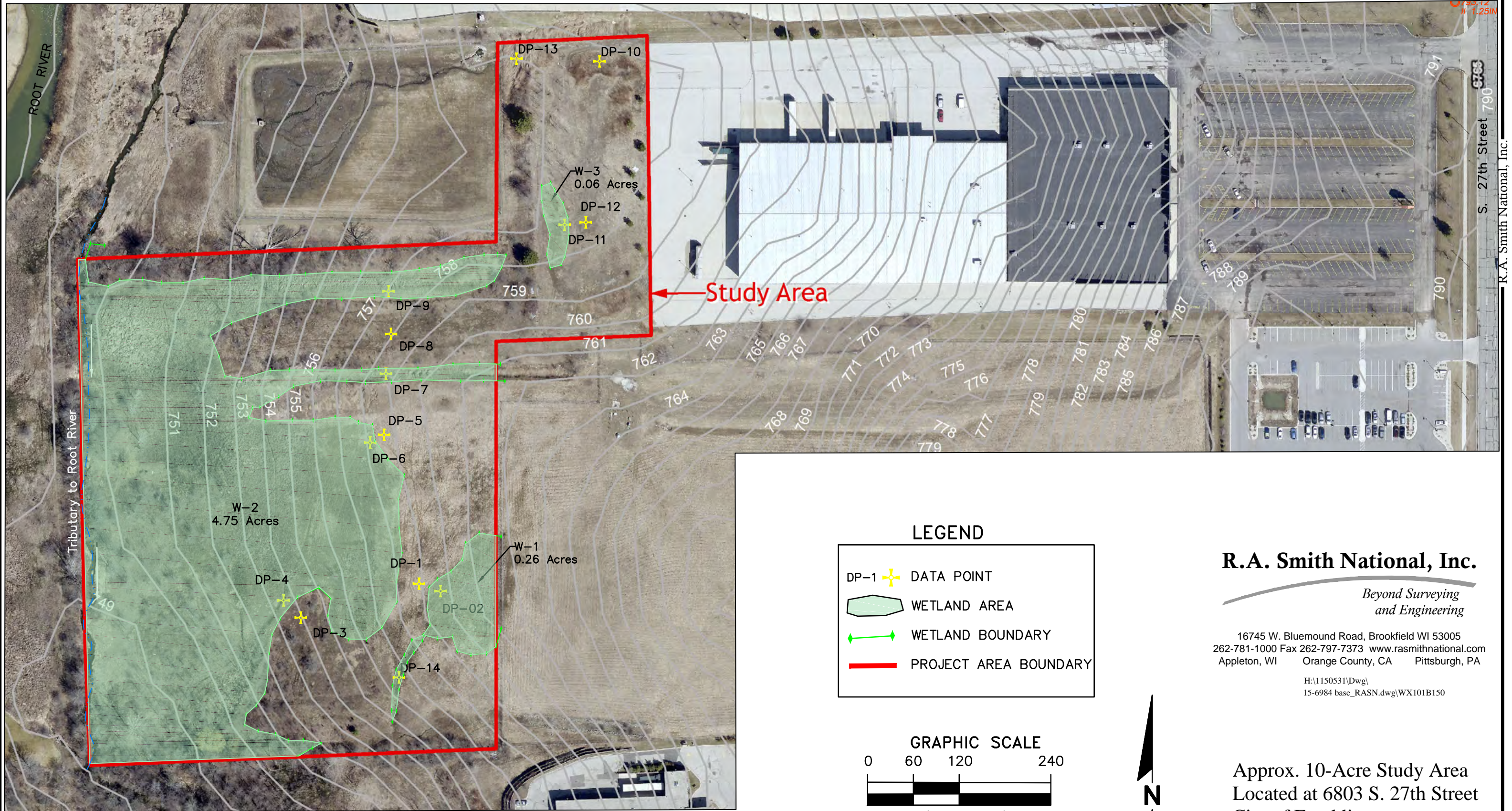
Figure 3: Surface Water Data Viewer Map

Figures 4A-G: Aerial Photographs (1970, 1980, 1990, 2000, 2005, 2010 & 2013)

Figure 5: 90-day Departure from Mean Precipitation Map



H:\1150531\15-6984 base_RASN.dwg, 10/26/2015 11:32:18 AM, njp



Topography from
Milwaukee County Land
Information Office

Survey done by:

JSD Professional Services, Inc.
• Engineers • Surveyors • Planners
161 HORIZON DRIVE, SUITE 101
VERONA, WISCONSIN 53593
PHONE: (608)848-5060

LEGEND

DP-1 DATA POINT

WETLAND AREA

WETLAND BOUNDARY

PROJECT AREA BOUNDARY

GRAPHIC SCALE

0 60 120 240

(IN FEET)

1 inch = 120 ft.



R.A. Smith National, Inc.
*Beyond Surveying
and Engineering*

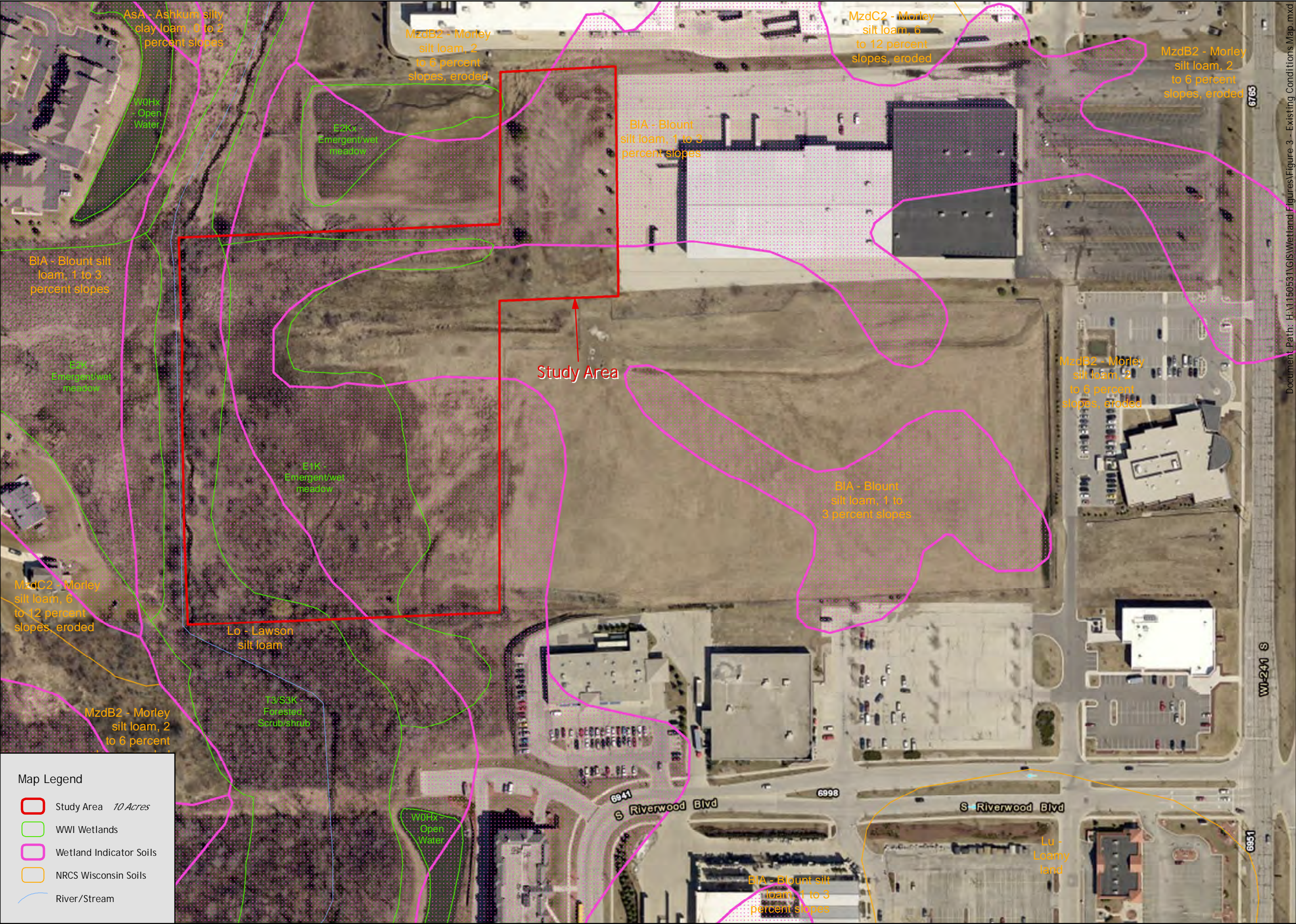
16745 W. Bluemound Road, Brookfield WI 53005
262-781-1000 Fax 262-797-7373 www.rasmithnational.com
Appleton, WI Orange County, CA Pittsburgh, PA
H:\1150531\Dwg\15-6984 base_RASN.dwg\WX101B150

Approx. 10-Acre Study Area
Located at 6803 S. 27th Street
City of Franklin
Milwaukee County, WI

FIGURE NO. 2

SHEET 1 OF 1

WETLAND BOUNDARY MAP



Map Legend

- Study Area 10 Acres
- WWI Wetlands
- Wetland Indicator Soils
- NRCS Wisconsin Soils
- River/Stream

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

R.A. Smith National
Beyond Surveying and Engineering

0 75 150
1 inch = 150 feet

September 28, 2015
1150531

Approx. 10-Acre Study Area
Located at 6803 S. 27th Street
City of Franklin
Milwaukee County, WI

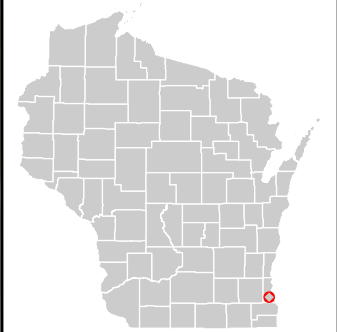


Figure 3
WDNR Surface Water
Data Viewer
Map

Document Path: H:\1150531\GIS\Wetland Figures\Figure 3 - Existing Conditions Map.mxd



Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

Data Source: SEWRPC, Milwaukee County GIS
R.A. Smith National
Beyond Surveying and Engineering

0 75 150
1 inch = 150 feet
September 28, 2015
1150531

Approx. 10-Acre Study Area
Located at 6803 S. 27th Street
City of Franklin
Milwaukee County, WI

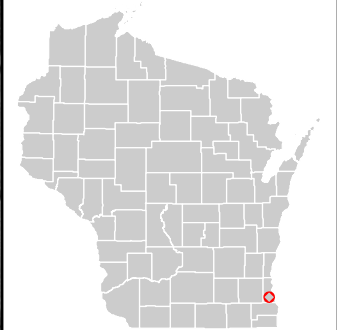



Figure 4A
1970 Aerial Photo Map



Map Legend

 Study Area 10 Acres

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

Data Source: SEWRPC, Milwaukee County GIS

R.A. Smith National
Beyond Surveying and Engineering

0 75 150
1 inch = 150 feet

September 28, 2015
1150531

Approx. 10-Acre Study Area
Located at 6803 S. 27th Street
City of Franklin
Milwaukee County, WI

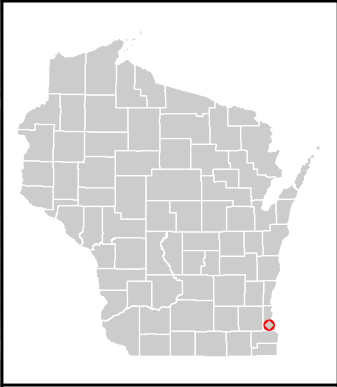
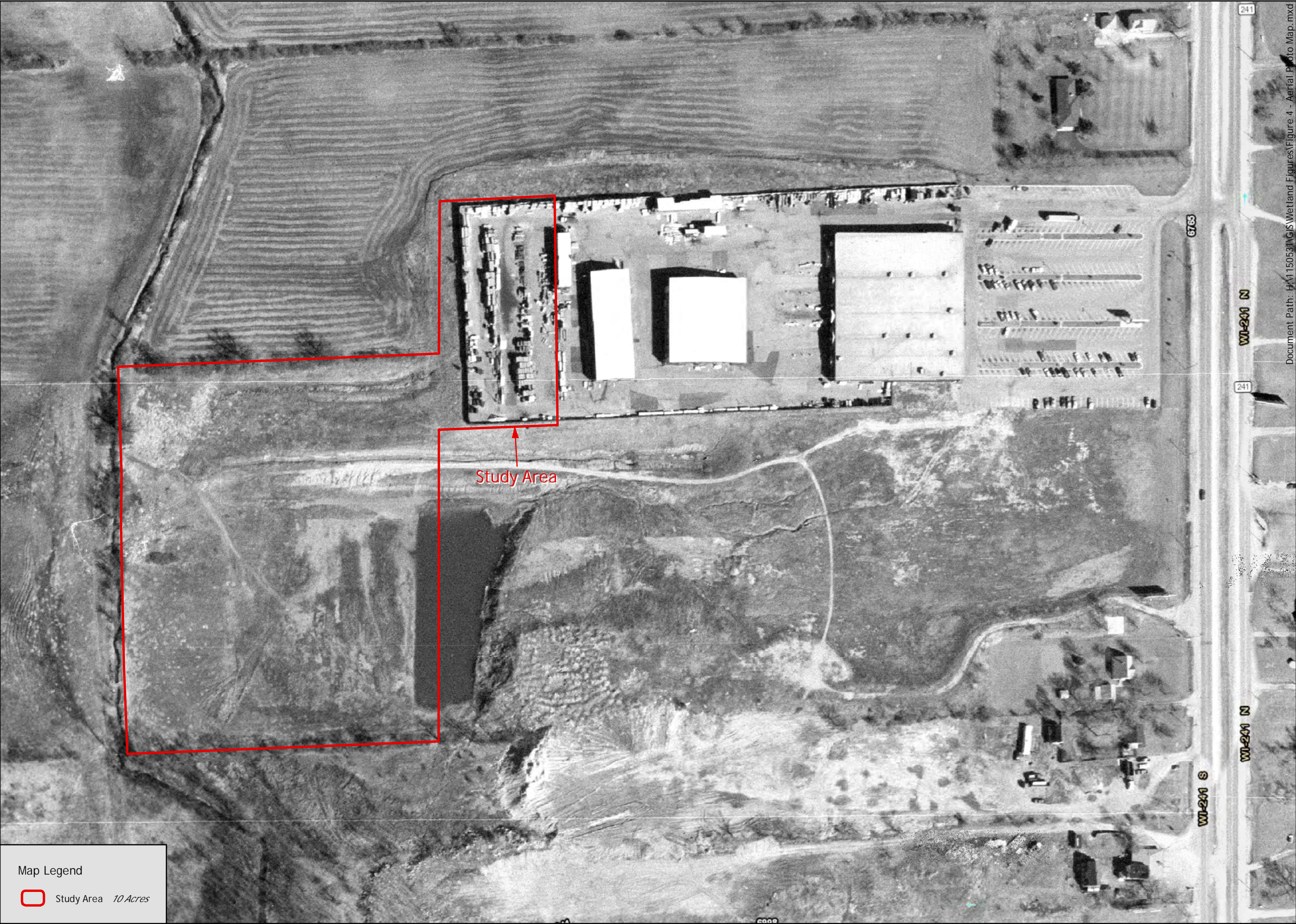


Figure 4B
1980 Aerial Photo Map



Map Legend

Study Area 10 Acres

Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors

Data Source: SEWRPC, Milwaukee County GIS

R.A. Smith National
Beyond Surveying and Engineering

0 75 150
1 inch = 150 feet
September 28, 2015
1150531

Approx. 10-Acre Study Area
Located at 6803 S. 27th Street
City of Franklin
Milwaukee County, WI

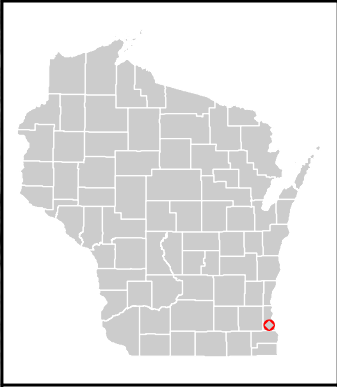


Figure 4C
1990 Aerial Photo Map

Document Path: H:\1150531\GIS\Wetland Figures\Figure 4 - Aerial Photo Map.mxd