BROOKS WILLIAMSON

AND ASSOCIATES, INC.

ENVIRONMENTAL/WETLAND CONSULTING

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March 25, 2023

Ms. Tamra Haurani
7598 Southview Ct.
Columbus, OH 43235

-Via Email-

RE: Wetland Delineation –
Lot 65, Sunset Cove Subdivision, Parcel# 4715-31-401-021,
Hamburg Township, Livingston County

Dear Ms. Haurani,

Brooks Williamson and Associates, Inc. (BWA), in cooperation with Marx Wetlands, LLC (MW), completed a wetland delineation on Lot 65 of Sunset Cove Subdivision in Hamburg Township, Livingston County. The purpose of this work was to determine the location of wetlands on the property that are subject to Part 303, Wetland Protection (Part 303), of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended. The property was also inspected for additional regulated natural resources including lakes, ponds or streams that may be subject to Part 301, Inland Lakes and Streams (Part 301), of NREPA, and/or similar natural resource ordinances of the Charter Township of Hamburg.

Wetland Definition and Methodology

Under Part 303, "wetland" means a land or water feature, commonly referred to as a bog, swamp, or marsh, inundated or saturated by water at a frequency and duration sufficient to support, and that under normal circumstances does support, hydric soils and a predominance of wetland vegetation or aquatic life. A land or water feature is not a wetland unless it meets any of the following:

(i) Is a water of the United States as that term is used in section 502(7) of the federal water pollution control act, 33 USC 1362.

(ii) Is contiguous to the Great Lakes, Lake St. Clair, an inland lake or pond, or a stream. As used in this subparagraph, "pond" does not include a farm or stock pond constructed consistent with the exemption under section 30305(2)(g).

(iii) Is more than 5 acres in size.

(iv) Has the documented presence of an endangered or threatened species under Part 365 of

the endangered species act of 1973, Public Law 93-205.

(v) Is a rare and imperiled wetland.

On March 22, 2023, wetlands were identified and delineated pursuant to statutory language and rules of Part 303 of NREPA. As required in Part 303, specific methodology was followed as set forth in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual including the Midwest Regional Supplement. The wetlands were identified where 1) there was a predominance of wetland-rated vegetation, 2) the presence of hydric soils, and 3) indicators of hydrology. The approximate boundaries of the delineated wetlands were sketched on an aerial photograph while in the field. Sample points were established within the wetland to record observed evidence of wetland vegetation, hydric soils, and hydrology.

Wetland Delineation

A single wetland area (flags A10-A30) was identified within the review area. The approximate boundary lines for the wetland are depicted on the map shown in Figure 1. The plant species recorded within the wetland are listed in the tables below.

WETLAND A - WETLAND PLANT SPECIES

SCIENTIFIC NAME	COMMON NAME	WETLAND RATING
Acer saccharinum	Silver maple	FACW
Ulmus americana	American elm	FACW
Lindera benzoin	Spicebush	FACW
Hamamelis virginiana	Witch hazel	FACU
Fraxinus pennsylvanica	green ash	FACW
Symplocarpus foetidus	Skunk cabbage	OBL
Carex intumescens	Bladder sedge	FACW
Onoclea sensibilis	Sensitive fern	FACW
Phalaris arundinacea	Reed canary grass	FACW
Vitis riparia	riverbank grape	FACW

WETLAND A - UPLAND PLANT SPECIES

SCIENTIFIC NAME	COMMON NAME	WETLAND RATING
Acer rubrum	Red maple	FAC
Tilia americana	basswood	FACU
Morus alba	White mulberry	FAC
Poa compressa	Canadian blue grass	FACU
Poa pratensis	Kentucky blue grass	FAC
Verbascum thapsus	Wooly mullein	UPL
Symphyotrichum pilosum	White oldfield aster	FACU
Parthenocissus quiquefolia	Virginia creeper	FACU

Wetland A (flags A1-A17) is a seasonally flooded palustrine forested and scrub-shrub complex that is the eastern end of a large, forested wetland complex found to the west. The dominate wetland plant species observed within the Wetland A included: silver maple (*Acer saccharinum*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylcanica*), northern spicebush (*Lindera benzoin*), and skunk cabbage (*Symplocarpus foetidus*). Hydric soil indicators observed included low chromas and Loamy Mucky Mineral (F1). The primary wetland hydrology indicators observed within Wetland A were Water Marks (B1), Sparsely Vegetated Concave Surface (B8), and Water-Stained Leaves (B9). The secondary wetland hydrology indicators are Saturation visible on Aerial Imagery (C9), Geomorphic Position (D2), and FAC-Neutral Test (D5). The wetland data sheets for the Wetland A are in Appendix A.

The remainder of the property is classified as upland and is labeled as "upland" in Figure 1. The upland within the property is found along the north property and the eastern 45% of the parcel. The dominate vegetation observed within the upland included: Red maple (*Acer rubrum*), American basswood (*Tilia americana), White mulberry* (*Morus alba*), Canada blue grass (*Poa compressa*), and Kentucky blue grass (*Poa pretensis*). No hydric soil indicators were observed within the soil sample pit. There were no primary or secondary indicators of hydrology identified within the upland sample point. The wetland data sheets for upland are in Appendix B.

Lake and Stream Regulation by the State of Michigan

Under Part 301 an inland lake or stream means either of the following:

> (i) An artificial or natural lake, pond, or impoundment that is a water of the United States as that term is used in section 502(7) of the federal water pollution control act, 33 USC 1362.
>
> (ii) A natural or artificial lake, pond, or impoundment; a river, stream, or creek which may or may not be serving as a drain as defined by the drain code of 1956, 1956 PA 40, MCL 280.1 to 280.630; or any other body of water that has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water, including the St. Mary's, St. Clair, and Detroit Rivers.

The March 22, 2023, site inspection revealed there are no streams or lakes within the limits of the property. The wetland on-site is within 500 feet of Baseline Lake to the south. Baseline Lake meets the definition of a lake under Part 301 and the wetland is within 500-feet, so the wetland is regulated by EGLE.

Wetland Regulation by the State of Michigan

In Michigan, wetlands are regulated by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) under Part 303 if the wetland fits the criteria listed in the wetland definition and methodology section of this report.

Based on our field investigation and review, Wetland A is **regulated** by EGLE because it is part of a larger wetland complex greater than 5 acres extending to the west of the site. Therefore, Wetland A is "contiguous" as defined under Part 303.

Regulation by Hamburg Township, Livingston County

Research revealed that Hamburg Township does not have a formal wetland ordinance nor is an ordinance listed on the EGLE local wetland ordinance website. The Township does have a wetland determination process that is part of the site plan approval. The process appears to parallel and rely on the State/EGLE permit process and requires the applicant to provide a copy of the EGLE application for the site plan review.

The Hamburg Township Zoning Ordinance also requires a Natural Features Setback (NFS) of fifty (50) feet. Any work/activity proposed within the NFS requires a permit/authorization prior to the activity being undertaken.

Confirmation by Regulatory Agencies

Numerous natural environmental factors and human induced changes may cause changes in the

extent of wetland on a parcel over a period of time. The aquatic natural resources identified on the subject property represent what we believe EGLE and the Township would consider to be wetland given the condition of the site at the time of inspection and recent regulatory policies and attitudes.

In BWA's and MW's opinion, any regulated activities conducted within Wetland A will require a permit from EGLE and the Township. Note that EGLE and the Township have the final determination of the presence of wetlands and surface waters and their respective jurisdictional status. If questions arise, a jurisdictional confirmation should be requested.

We hope this provides better insight into the wetland conditions associated with your property. If you have any questions or concerns, please feel free to call our office.

Sincerely,

Brooks Williamson
Brooks Williamson and Associates, Inc.
(248) 624-9100
(248) 420-3280 cell

Enclosures

(23-025)

APPENDIX A – Wetland Data Sheets for Wetland A

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Baseline Lk- Baseview Blvd/Maple Vista (Parcel 4715-31-401) City/County: Hamburg Township/Livingston County Sampling Date: 03/22/2023
Applicant/Owner: Brooks Williamson and Associates State: Michigan Sampling Point: WSP.A
Investigator(s): B.Guevara; Marx Wetlands LLC Section, Township, Range: T1N, R5E, Section 31
Landform (hillslope, terrace, etc): Depression Local relief (concave, convex, none): concave
Slope(%): 0-1 Lat: 42.43053087 Long: -83.89383366 Datum: WGS 1984
Soil Map Unit Name: Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil (Gd) NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes	X	No	**Is the Sampled Area within a Wetland?**	Yes X No
Wetland Hydrology Present?	Yes	X	No		

Remarks:
Wetland A

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum* / Silver maple	35	Yes	FACW
2. *Ulmus americana* / American elm	15	Yes	FACW
3. *Fraxinus pennsylvanica* / Green ash	10	No	FACW
4.			
5.			
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Lindera benzoin* / Northern spicebush	30	Yes	FACW
2. *Hamamelis virginiana* / American witch-hazel	5	No	FACU
3.			
4.			
5.			
	35	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Symplocarpus foetidus* / Skunk-cabbage	55	Yes	OBL
2. *Carex intumescens* / Greater bladder sedge	20	No	FACW
3. *Onoclea sensibilis* / Sensitive fern	20	No	FACW
4. *Phalaris arundinacea* / Reed canarygrass, Reed canary gras	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Vitis riparia* / River-bank grape	20	Yes	FACW
2.			
	20	= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	160	x 2 =	320
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	220 (A)		395 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:
X 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index ≤3.0¹
___ 4 - Morphological Adaptations¹ (Provide supporting
___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

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SOIL Sampling Point: WSP.A

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
0-12	10YR 2/1	100					Muck Lm Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- X Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X 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): _____

Wetland Hydrology Present? Yes X No ____

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

Remarks:

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APPENDIX B – Data Sheets for Upland

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Baseline Lk- Baseview Blvd/Maple (Parcel 4715-31-401-021) City/County: Hamburg Township/Livingston County Sampling Date: 03/22/2023
Applicant/Owner: Brooks Williamson and Associates State: Michigan Sampling Point: USP.A
Investigator(s): B.Guevara; Marx Wetlands LLC Section, Township, Range: S31, T1N, R5E
Landform (hillslope, terrace, etc): hillside Local relief (concave, convex, none): convex
Slope(%): 5-8 Lat: 42.4303115 Long: -83.69387858 Datum: WGS 1984
Soil Map Unit Name: Gilford sandy loam, 0 to 2 percent slopes, gravelly subsoil (Gd) NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes		No	X
Hydric Soil Present?	Yes		No	X
Wetland Hydrology Present?	Yes		No	X
Is the Sampled Area within a Wetland?	Yes		No	X

Remarks:

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum* / Red maple	10	Yes	FAC
2. *Tilia americana* / American basswood	10	Yes	FACU
3.			
4.			
5.			
	20	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Morus alba* / Mulberry, White mulberry	20	Yes	FAC
2.			
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. *Poa compressa* / Canada blue grass, Canadian blue grass	35	Yes	FACU
2. *Poa pratensis* / Kentucky blue grass	35	Yes	FAC
3. *Verbascum thapsus* / Woolly mullein	20	No	UPL
4. *Symphyotrichum pilosum* / White oldfield american-aster	15	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	105	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. *Parthenocissus quinquefolia* / Virginia creeper	10	Yes	FACU
2.			
	10	= 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: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	65	x 3 =	195
FACU species	70	x 4 =	280
UPL species	20	x 5 =	100
Column Totals:	155 (A)		575 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:
___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index ≤3.0¹
___ 4 - Morphological Adaptations¹ (Provide supporting
___ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

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

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SOIL Sampling Point: USP.A

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
0-12	10YR 4/3	100					Crse Sndy Lm	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

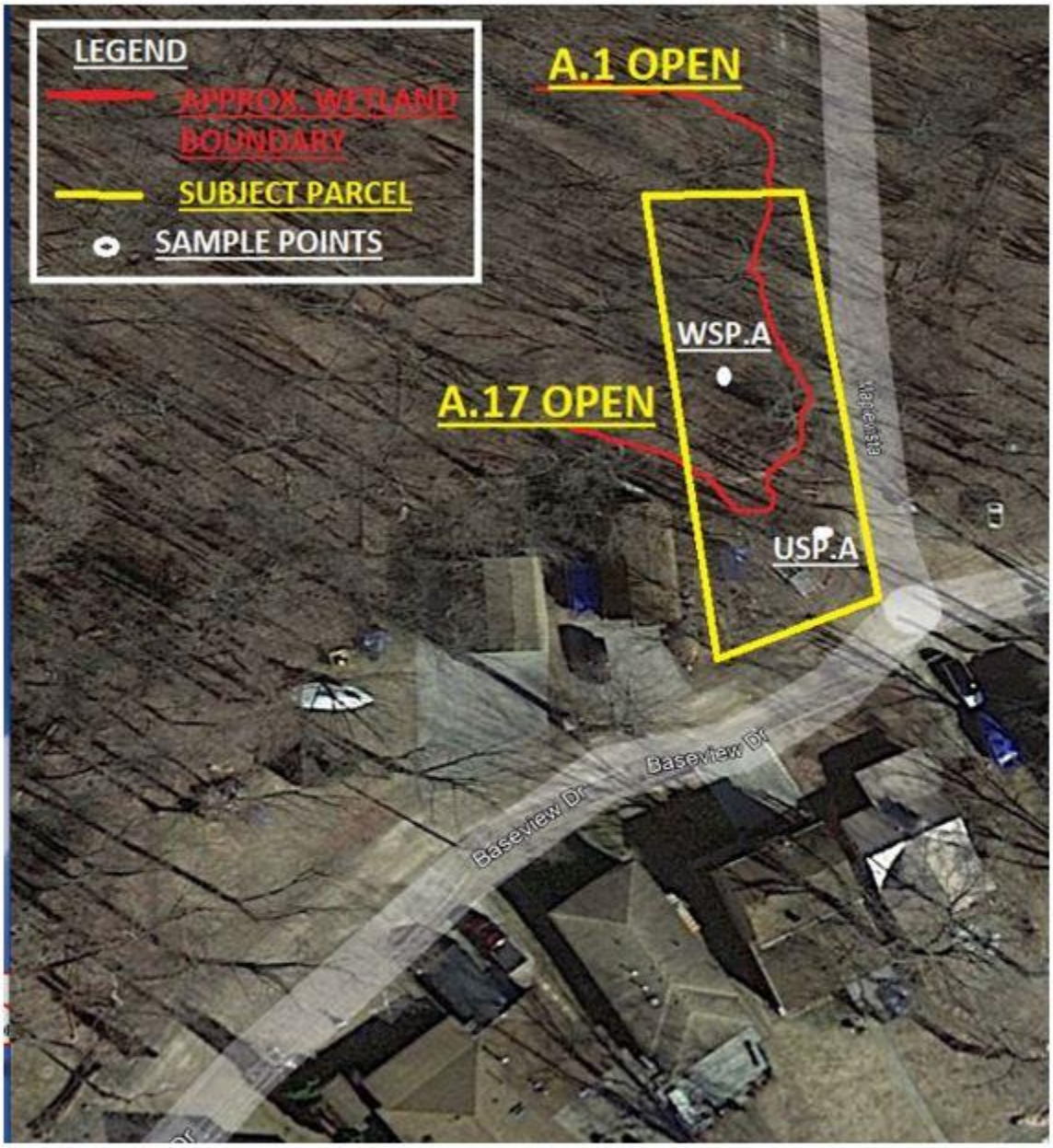

FIGURE 1 – WETLAND MAP

(23-025)