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June 29, 2021

Administrator, DOSD
Attn: Greg Fedner, P.E.
Section Manager, Plan Review Section
1250 Fairwood Avenue
Columbus, OH 43206

Subject: KIPP Columbus West Campus Expansion: Type III Variance from Stormwater Drainage Manual

Dear Mr. Fedner,

On behalf of the KIPP Foundation, EMH&T is submitting an application for a Type III variance from the City of Columbus Stormwater Drainage Manual for the proposed expansion of the KIPP Columbus Campus.

The proposed development site includes Stream Corridor Protection Zones (SCPZ) along one unnamed perennial tributary and three (3) unnamed ephemeral tributaries. The proposed development will result in direct, unpermitted impacts to 845 linear feet of two ephemeral tributaries and 0.99 acre of associated SCPZ. The mitigation plan developed for and included as part of this variance application includes onsite stream restoration activities and SCPZ enhancement.

The following information is provided in support of the application:

- Project Name: KIPP Columbus Primary and Elementary Schools – West Campus Expansion
- Address, PID, Site Disturbance and Total Site Area:
Address: 2900 Inspire Dr., Columbus, OH 43224
PIDs: See table attached.
Site Disturbance: 30 acres
Total Site Area: 40 acres (West Campus Expansion)
- Primary (Owner) Contact:
KIPP Foundation
Attn: Hanna D. Powell, Executive Director, KIPP Columbus
2900 Inspire Dr., Columbus, OH 43224
614-263-6150 x3201; hpowell@kippcolumbus.org

Additional information pertaining to the requested variance is included in the enclosed application document. Please contact me with any questions at (614) 775-4523, or by email at harding@emht.com.

Sincerely,

A handwritten signature in blue ink that reads "Heather L. Dardinger".

Heather L. Dardinger
Senior Environmental Scientist

Enclosures: 1

Copies: Hanna Powell, KIPP
Sandy Doyle-Ahern, EMH&T
Ann Aubry, City of Columbus DPU
Rob Priestas, City of Columbus DOSD

Parcel Ownership

Owner	PID
KIPP Columbus Foundation	190-004665-00
KIPP Columbus Foundation	190-004666-00
KIPP Columbus Foundation	190-004667-00
KIPP Columbus Foundation	190-004669-00
KIPP Columbus Foundation	190-004670-00
KIPP Columbus Foundation	010-148129-00
KIPP Columbus Foundation	190-004806-00
KIPP Columbus Foundation	190-004807-00
KIPP Columbus Foundation	190-004808-00
KIPP Columbus Foundation	190-004820-00
KIPP Columbus Foundation	190-004819-00
KIPP Columbus Foundation	190-004815-00
KIPP Columbus Foundation	190-004809-00
KIPP Columbus Foundation	190-004814-00
KIPP Columbus Foundation	190-004810-00
KIPP Columbus Foundation	190-004813-00
KIPP Columbus Foundation	190-004816-00
KIPP Columbus Foundation	190-004817-00
KIPP Columbus Foundation	190-004811-00
KIPP Columbus Foundation	190-004812-00
KIPP Columbus Foundation	190-004800-00
KIPP Columbus Foundation	190-000003-00
Bridgewalk Birdie LLC	010-005506-00



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**KIPP COLUMBUS PRIMARY AND ELEMENTARY SCHOOLS
WEST CAMPUS EXPANSION**

City of Columbus SWDM Type III Variance Application

KIPP Foundation

June 29, 2021

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1.0 INTRODUCTION

The following report provides information pertaining to a requested variance from the City of Columbus Stormwater Drainage Manual (May 2021) (the Manual) for the proposed KIPP Columbus West Campus Expansion project. The KIPP Foundation (KIPP) plans to construct this expansion of their existing 93-acre campus located northwest of Agler Road and Sunbury Road in northeast Columbus.

1.1 Project Location

The site is located within the Northeast Area Commission, near Columbus' eastern border with the City of Gahanna. The proposed expansion site encompasses ± 40 acres located on portions of 23 parcels situated north of Agler Road and west of Golf Green Drive and the existing KIPP campus (refer to Figure 1). The site mainly consists of vacant, wooded land, with open, maintained lawn areas around former residential lots in the center of the site and adjacent to Agler Road. An unnamed perennial tributary of Alum Creek flows through the northern portion of the site from west to east.

1.2 Project Purpose

The expansion will occupy ± 30 acres of the 40-acre expansion site. It will provide for two new school buildings and recreation areas, future assembly and community buildings, and associated roadways and parking lots. The new school buildings will house the KIPP Columbus Primary (K-1) and Elementary (2-5) schools, while the existing campus facilities will serve as the KIPP Columbus Middle School, High School, and Early Learning Center. The proposed expansion will nearly double the campus capacity, allowing KIPP to meet its growing enrollment waitlist.

1.3 Delineation of Waters of the U.S.

A delineation of the project site was completed and submitted to the U.S. Army Corps of Engineers (USACE) in order to identify the location, extent and quality of stream and wetland features within the project area (Appendix A). The USACE issued an Approved Jurisdictional Determination for the site on April 21, 2021 (Appendix B). Within the expansion area, one perennial stream, three ephemeral streams, six isolated wetlands, one ephemeral swale and one stormwater ditch were identified. The wetlands are all located outside the limits of the SCPZ. Photographs and an aerial map depicting these features are provided in the delineation report (Appendix A).

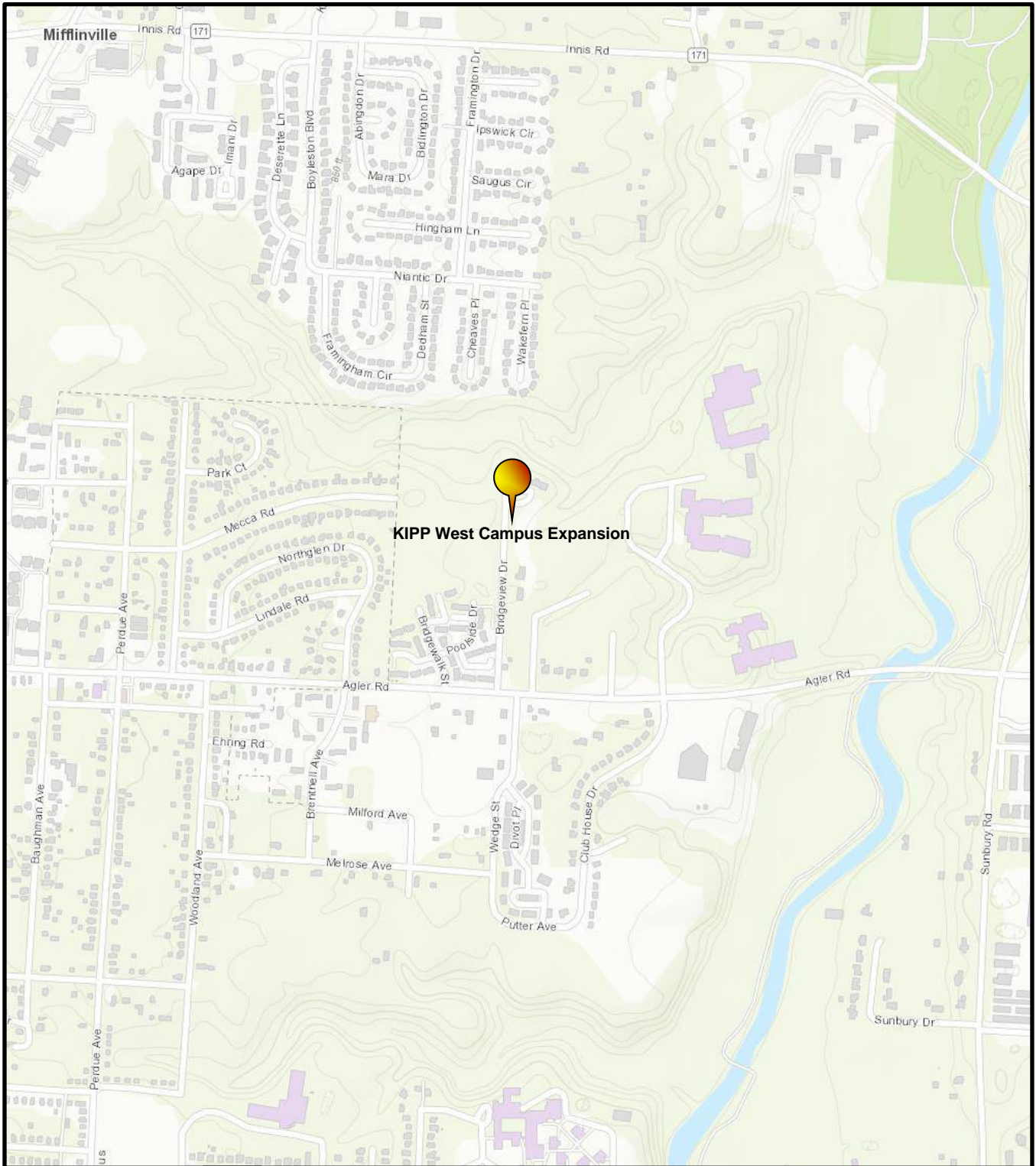
Stream 1, an unnamed tributary of Alum Creek, flows for approximately 1,972 linear feet along the northern boundary of the project site. As defined by the Manual, the Stream Corridor Protection Zone (SCPZ) along Stream 1 is 147 feet wide. In addition, there are three small, ephemeral tributaries (Streams 2, 3 and 4) located within the project site. Stream 4 is located north of Stream 1, outside the expansion work area. Streams 2 and 3 flow through the expansion area in a northeasterly direction for approximately 666 linear feet and 502 linear feet, respectively. These streams each have a 50-foot wide SCPZ.

1.4 Summary of Impacts

As shown on Exhibit 1, two roadway crossings will result in impacts to a 143-linear foot portion of the Stream 2 channel, a 79-linear foot portion of the Stream 3 channel, and 0.27 acre of associated SCPZ. These crossings are a permitted use in the SCPZ, and do not require a variance from the Manual.

The expansion project will also result in direct impacts to an additional 422 linear feet of Stream 2 and 423 linear feet of Stream 3, along with 0.99 acre of associated SCPZ. These impacts are necessary to allow for development of the proposed eastern Primary School building, assembly building, recreational/playground space, and associated parking. These impacts are not considered permitted uses per the Manual.

As such, KIPP is seeking a Type III variance for impacts to 845 linear feet of ephemeral channel and 0.99 acre of SCPZ along Streams 2 and 3 for the purpose of completing the proposed expansion. An Isolated Wetland Permit and Ephemeral Stream General Permit from the Ohio EPA will also be requested for impacts to 0.86 acre of isolated wetland and 1,067 linear feet of ephemeral stream.



KIPP West Campus Expansion



2.0 TYPE III VARIANCE (STREAM PROTECTION)

The SCPZ consists of the stream channel and the adjacent riparian area. Its purpose is to allow the natural, lateral movement of the stream, provide sufficient area for flood conveyance, protect water quality and prevent structures from being impacted by natural streambank erosion. A SCPZ is present along an unnamed perennial tributary and three unnamed ephemeral tributaries at the KIPP Campus expansion site. The Preferred Plan will encroach upon two of the ephemeral streams and their SCPZs.

KIPP is requesting a variance from Section 1.3.2 and 1.3.3 of the Manual for the proposed expansion, specifically a variance allowing for SCPZ and stream channel impacts in order to construct one of the proposed school buildings and complete associated earthwork.

2.1 Proposed SCPZ Impacts

Under the Preferred Alternative, discussed below, the proposed area of non-permitted impact within the SCPZ is 0.99 acre, which includes 845 linear feet of direct channel impacts to Streams 2 and 3 (refer to Exhibit 1). Streams 2 and 3 are small, ephemeral tributaries with drainage areas of less than 0.1 square mile. As such, they each have a SCPZ width of 50 feet, which is the minimum provided per the Manual. As further discussed below, the proposed impacts to the channel and the SCPZ will allow for construction of the preferred expansion building layout.

2.2 Existing Conditions

The property is bordered by Agler Road to the south, the existing KIPP campus to the east and residential developments to the north and west. The majority of the project area is forested and undeveloped, with some open, maintained lawn areas in the center of the site and along Agler Road. The site is located within the Bliss Run-Alum Creek subwatershed (HUC: 05060001-16-02). Stream 1 flows eastward through the northern portion of the property toward Alum Creek. Three additional ephemeral streams are located on the site. The onsite streams are summarized in Table 1, and described further below.

TABLE 1
Summary of Onsite Streams

Stream	Channel (lf)	SCPZ (ac)		Watershed (ac)	QHEI	HHEI
		Width (ft)	Area (ac)			
Stream 1	1,972	147	5.95	640	69	--
Stream 2	666	50	0.65*	19	--	33
Stream 3	502	50	0.61	22	--	18
Stream 4	117	50	0.05*	20	--	n/a
Total	3,257	--	7.26	--	--	--

* Excludes the portions of SCPZ that overlap the Stream 1 SCPZ.

Within the project site, there are 1,972 linear feet of Stream 1, which is an unnamed, undesignated, perennial tributary of Alum Creek. A Qualitative Habitat Evaluation Index (QHEI) assessment was completed for Stream 1 within the project area. The stream received a QHEI score of 69, which is indicative of 'good' habitat quality. Stream 1 was assigned a provisional aquatic life designation of Warmwater Habitat (WWH).

Streams 2 and 3 are unnamed, ephemeral streams that flow through the project site in a northeasterly direction for approximately 666 linear feet and 502 linear feet, respectively. The streams are located within a sparsely forested area dominated by young, immature trees with an invasive honeysuckle understory.

A Headwater Habitat Evaluation Index (HHEI) assessment was performed on these streams. The HHEI metric is applicable to streams with a watershed area of less than one square mile and maximum pool depths less than 40 centimeters, both of which apply to Streams 2 and 3. The streams received HHEI scores of 33 and 18, respectively, indicative of Class I to Class II Primary Headwater Habitat. The HHEI dataforms are provided in Appendix A.

As ephemeral streams, Streams 2 and 3 have little or no aquatic life potential and have little or no potential to achieve higher stream functions. Based upon the field observations and the HHEI assessment, Streams 2 and 3 exhibit minimal stream functions. These channels primarily serve to convey overland stormwater flow from the surrounding land. They have no aquatic life potential, and have flowing water only for very short time periods following significant rainfall events.

One additional ephemeral stream, Stream 4, is located on the project site. Stream 4 flows south for 117 linear feet from the northern site boundary to Stream 1. An HHEI was not completed for Stream 4, as it will not be impacted by the project.

2.3 Site Development Alternatives

2.3.1 Proposed Conditions / Preferred Alternative

Under the Preferred Alternative (Alternative A, Exhibit 1), a 30-acre campus expansion will be built on approximately 40 acres of land located west of the existing KIPP campus. A drive will be constructed off Agler Road to access the proposed expansion, with connections to Golf Green Drive and Inspire Drive to the east. The expansion will consist of two new school buildings, playground space, a future assembly building, a future community building, and associated drives and parking. Stormwater management will be provided via a basin to be located on the eastern campus. The new school buildings will house the KIPP Columbus Primary (K-1) and Elementary (2-5) schools.

The Preferred Alternative will result in **845 linear feet of ephemeral channel impacts and 0.99 acre of SCPZ impacts**. Specifically, the following non-permitted impacts to streams and associated SCPZ are proposed:

- 422 linear feet of direct channel impacts to Stream 2;
- 0.49 acre of SCPZ impacts to Stream 2;
- 423 linear feet of direct channel impacts to Stream 3; and
- 0.50 acre of SCPZ impacts to Stream 3.

The impacts to the Stream 2 and Stream 3 channels and SCPZ are necessary for construction of the proposed Primary School building, recreational/playground space, parking, and associated grading/earthwork. The proposed layout maximizes the developable use of the site and achieves the desired expansion program consisting of a new 88,600-square foot Primary School building, a

new 151,500-square foot Elementary School building, playground area, future $\pm 42,790$ -square foot assembly building, future $\pm 42,790$ -square foot community building, and the required associated parking. The proposed impacts will result in the loss of low quality, ephemeral stream channel and will preserve the higher quality Stream 1 channel and SCPZ.

2.3.2 Minimal Impact Alternative

In the Minimal Impact Alternative (Alternative B, Exhibit 2), the direct channel and SCPZ impacts to Stream 3 have been eliminated by reducing the size of the Primary School building and associated parking by approximately half. Under this alternative, non-permitted impacts will be limited to Stream 2 and will include:

- 422 linear feet of direct channel impacts to Stream 2; and
- 0.49 acre of SCPZ impacts to Stream 2.

The reduction of the Primary School building under the Minimal Impact Alternative will result in the loss of approximately 44,300 square feet of building space. This alternative does not achieve the necessary buildable space for the campus expansion and significantly reduces the development's viability. Reduction of the size of the Primary School would restrict the size of the kindergarten and first grade cohorts that can be supported by KIPP, putting the size of those cohorts out of balance with the later grades served on the KIPP Learning Campus.

Moreover, avoiding impacts will complicate the grading for the expansion and increase the overall project cost. If the Stream 3 SCPZ is to be avoided, the pad graded for the adjacent developed areas will require retaining walls in order to achieve the required grade differential between the developed pad and the undisturbed SCPZ.

The avoided SCPZ that would be left under the Minimal Impact Alternative would also have an impact on the safety of the campus. The wooded area and stream corridor would be difficult to patrol by campus security and may provide cover for criminal mischief. The trees, dense underbrush and steep terrain along the stream channel, immediately adjacent to campus facilities, are also undesirable for the safety of students and staff traversing the campus.

2.3.3 Full Compliance / No Impact Alternative

The Full Compliance/No Impact Alternative (Alternative C) is shown on Exhibit 3. In order to avoid all non-permitted stream channel and SCPZ impacts on the site, the Primary School building and associated parking must be reduced in size, as in the Minimal Alternative, and the playground area must be shifted to the east. As a consequence, the future assembly building must be eliminated. This alternative would include a street crossing resulting in impacts to a portion of the Stream 2 channel and SCPZ. However, this is a permitted use in the SCPZ, and does not require a variance from the Manual.

The modification to the Primary School building and loss of the future assembly building under the No-Impact Alternative will result in an overall loss of 87,090 square feet of building space. As described under the Minimal Alternative, the reduction in the Primary School building would significantly reduce and disproportion the K-1 cohorts on the KIPP Learning Campus. Additionally,

under the No-Impact Alternative, the Elementary School building would will be located at significant distance (approximately 400 feet) from, and lack a direct connection to, the playground area. This layout is unacceptable for the proposed use and does not meet the goals of the expansion. The No Impact Alternative reduces and compromises the expansion to the extent that it is no longer viable.

As described under the Minimal Impact Alternative, retaining walls will be required along the pads adjacent to the SCPZ in order to achieve the required grade differential. The avoided SCPZ areas will also have a significant negative impact on the safety, security and visual aesthetics of the campus expansion.

2.3.4 Comparison of Project Alternatives

As summarized in Table 2, the Preferred Alternative will result in the following non-permitted impacts: 422 linear feet of Stream 2 channel, 0.49 acre of Stream 2 SCPZ, 423 linear feet of Stream 3 channel and 0.50 acre of Stream 3 SCPZ. The Minimal Impact Plan will reduce these impacts by approximately half by avoiding the non-permitted impacts to Stream 3.

TABLE 2
Comparison of Project Alternatives

Alternative	Permitted Use		Non-Permitted Impact		Remaining	
	Channel (lf)	SCPZ (ac)	Channel (lf)	SCPZ (ac)	Channel (lf)	SCPZ (ac)
<i>Existing Condition</i>					3,257	7.26
Preferred Plan	222	0.27	845	0.99	2,190	6.00
Minimal Plan	143	0.16	422	0.49	2,692	6.61
No Impact Plan	143	0.16	0	0	3,114	7.10

The layout of the development in the Preferred Alternative maximizes the developable acreage on the project site, while still preserving the highest quality, perennial stream channel and associated SCPZ along Stream 1. Reducing the proposed impacts under the Minimal Impact and No Impact Alternatives would not provide sufficient building space and would significantly compromise the expansion plan, particularly as it relates to serving the primary grades. Both the Minimal and No Impact alternatives reduce the size of the new Primary School building by 50 percent. The No Impact alternative additionally eliminates the future assembly building and locates the playground at significant distance from the Elementary School building, rendering the project infeasible.

2.4 Impacts to Stormwater Detention and Water Quality

Of the three alternatives, the Preferred Plan has the greatest impervious area, thereby slightly increasing the volume of stormwater runoff as compared to the Minimal or No Impact Alternatives. However, the stormwater management facilities for all three alternatives (to be located on the eastern campus) would be designed to comply with the stormwater management and water quality requirements of both the City of Columbus and Ohio EPA. Thus, each alternative would have similar impacts on stormwater detention and water quality.

2.5 Statement of Hardship

The proposed non-permitted channel and SCPZ impacts under the Preferred Plan Alternative are driven by the need to maximize the developable space on the property to achieve the required

expansion program. Based on enrollment needs, KIPP is seeking to double its campus capacity, requiring a minimum of 240,100 square feet of new building space, new playground space, as well as opportunities for implementation of future associated buildings. As detailed above, implementation of the Minimal Impact Alternative would significantly impact the viability of the project. The proposed minimization would result in a loss of half the Primary School building, increase development costs, and have significant impacts to the safety and aesthetics of the development. Avoidance of all stream and SCPZ impacts would further impact the project, resulting in the elimination of the future assembly building and inefficiencies in the overall layout, rendering the project unviable. Thus, full compliance with the Manual will result in a significant hardship to KIPP and the educational community it serves. Thus, KIPP respectfully requests approval of the variance for the Preferred Plan Alternative.

3.0 MITIGATION

As described in the Manual, adequate mitigation must be provided for impacts to the SCPZ by creating equivalent mitigation also within a SCPZ. Additionally, for direct stream impacts, the Manual states that “the applicant must demonstrate that the predicted post-construction QHEI/HHEI will meet or exceed the existing QHEI/HHEI...If a stream is proposed to be enclosed into a storm sewer or otherwise eliminated, then an equivalent impaired stream length elsewhere must be remediated to demonstrate a substantial improvement of its QHEI/HHEI score to a maximum practicable extent”

The Manual states, “Generally, mitigation SCPZ will be considered equivalent if it performs the same function as the disturbed SPCZ.” It is the City’s preference that mitigation occur on the same site as the SCPZ encroachment, or as close as possible if onsite mitigation is infeasible. The Manual specifies that mitigation should consist of equivalent SCPZ created at the following ratios: 1:1 onsite, 1:1.5 on an adjacent site, and 1:2 in the same HUC-12 watershed.

Under the Preferred Alternative (Exhibit 1), the proposed impacts requiring mitigation include 845 linear feet of ephemeral stream and 0.99 acre of SCPZ. A total of 6.46 acres along Stream 1, including 1,972 linear feet of channel and the 5.95-acre SCPZ, will be preserved within a conservation easement. To offset the proposed impacts, KIPP is proposing to complete onsite mitigation, creating new stream habitat and enhancing SCPZ in the eastern portion of the existing KIPP campus. This onsite mitigation will include the following (refer to Exhibit 4).

1. Establishment of 975 linear feet of new stream habitat between the existing stormwater wetland basin east of the KIPP high school and Alum Creek;
2. Enhancement of 0.99 acre of SCPZ along the new stream channel; and
3. Preservation of approximately 0.99 acres of SCPZ associated with the mitigation within a conservation easement.

3.1 Stream Channel Establishment

3.1.1 Proposed Mitigation Plan

The proposed stream mitigation project will establish 975 linear feet of new ephemeral stream, and reestablish approximately 0.99 acre of forested riparian habitat within its associated SCPZ. The new stream channel will be established between the existing stormwater wetland basin, which is located east of the KIPP high school, and Alum Creek. The stormwater wetland currently outlets via a level spreader and overland flow. The proposed mitigation will provide a small stream channel from the outlet, as shown on Exhibit 4.

The new channel will be constructed with a low-flow pilot channel with some deeper pools. Coarse substrate, i.e., gravel and cobble, will be installed within the channel. Floodplain benches will be constructed on either side of the channel, beyond which the stream banks will be graded at a gradual 4:1 slope. Based on the tributary area of 49.5 acres, the total SCPZ width will be approximately 56 feet, which will be planted with native trees and shrubs, as listed on Exhibit 4. The vegetated benches and riparian buffer will provide stability and improved ecological function

to the stream. The established stream channel and 56-foot wide SCPZ will be protected in perpetuity via a conservation easement to be granted to the City of Columbus.

3.1.2 Expected Habitat Conditions

The proposed stream is expected to have an ephemeral to intermittent flow regime, similar to that of Stream 3 on the property. The stream will be designed to have some deeper pools of up to 8 inches, and a bankfull width of approximately four feet. Coarse substrate (mixed gravel and cobble) will be installed to provide in-stream structure. Based on these parameters, the stream is expected to obtain a post-construction HHEI score of at least 56, which is indicative of Class II PHW habitat. As noted in the post-construction HHEI (Appendix C) and shown below in Table 2, this represents a significant improvement over the habitat provided by the impacted streams, particularly the pool habitat quality.

**TABLE 3
Expected HHEI and Comparison to Impacted Streams**

Metric	Expected for New Stream	Stream 2	Stream 3
Substrate	16	8	13
Maximum Pool Depth	25	5	5
Bankfull Width	15	5	15
Total HHEI Score	56	18	33

3.1.3 Comparison of Proposed Impacts and Mitigation

As described in Section 2.2, Streams 2 and 3, which will be impacted by the proposed project, received HHEI scores of 33 and 18. These scores indicate that Streams 2 and 3 are Class I and Class II Primary Headwater (PHW) streams, which have limited potential to support aquatic life or higher stream functions as they do not exhibit perennial flow. The channels primarily serve to convey overland stormwater flow from the surrounding forest to Stream 1 and Alum Creek.

As described in Section 3.1.2, the stream to be established is expected to receive a post-construction HHEI score of at least 56, indicative of Class II PHW habitat. This post-construction HHEI score represents a lift of at least +23 points over the existing conditions of Stream 3 (the higher quality of the streams to be impacted). The new stream will serve to transport water from the stormwater wetland. The stream channel will dissipate energy during high-water flows to reduce erosion, enhance groundwater recharge, and further improve water quality entering Alum Creek. The 0.99 acre of forested SCPZ to be established along the stream will provide wildlife habitat and additional water quality filtering benefits.

Overall, the proposed stream channel improvements will provide approximately 975 linear feet of new ephemeral stream, providing an HHEI score of at least 56, which will exceed Class II PHW standards. This mitigation will offset non-permitted impacts to 845 linear feet of low quality, ephemeral stream (HHEI of 18-33). The mitigation will occur on the same site as the project impacts, providing significant benefits to local water quality and habitat in the Bliss Run-Alum Creek watershed.

3.2 Proposed SCPZ Mitigation Ratio

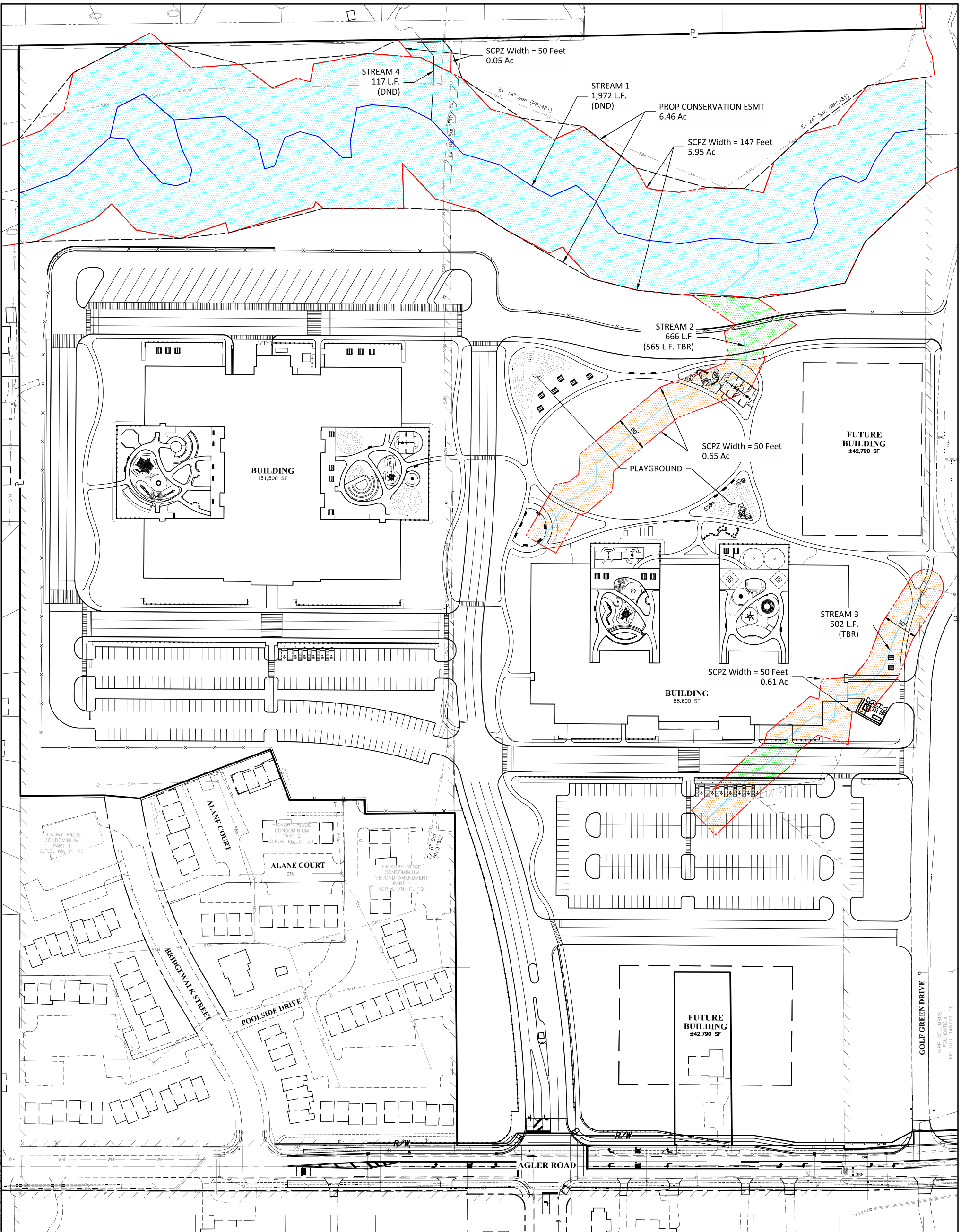
The proposed mitigation project will provide for the enhancement of approximately 0.99 acre of SCPZ along the new stream to be established. Based upon the proposed non-permitted SCPZ impacts of 0.99 acres, this provides mitigation at a **ratio of 1 to 1**, meeting the 1:1 onsite ratio provided by the Manual. This mitigation is more than equivalent, as the mitigation SCPZ will provide much higher functions and value to water quality than the SCPZ to be impacted along Streams 2 and 3.

4.0 CONCLUSIONS

KIPP respectfully requests approval of the Type III variance for the Preferred Project Alternative for the KIPP Columbus West Campus Expansion project. The proposed non-permitted impacts to 845 linear feet of ephemeral channel and 0.99 acres of SCPZ have been carefully considered, and ultimately determined to be necessary to meet the project's requirements. Reducing or eliminating these impacts would have a significant impact on the project's viability, as described herein.

The mitigation proposed for the Preferred Alternative will be achieved on the project site and includes the establishment of 975 linear feet of new ephemeral stream channel and approximately 0.99 acre of native riparian tree and shrub planting within the associated SCPZ. The mitigation activities will result in a significant ecological lift as compared to the current condition of the Stream 2 and 3 channels to be impacted. The SCPZ mitigation will result in a mitigation ratio of 1 to 1. The proposed mitigation is more than equivalent as the areas to be restored/enhanced will perform significantly higher functions than the area to be impacted.

EXHIBITS



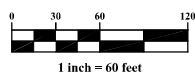
- LEGEND**
- Stream Corridor Protection Zone (5.95 Ac)
 - Stream Corridor Protection Zone Removal (0.99 Ac)
 - Stream Corridor Protection Zone Permitted Use (0.27 Ac)
 - Perennial Stream
 - Ephemeral Stream

STREAM AND SCPZ IMPACTS

STREAM	EXISTING		PERMITTED USE IMPACT		NON-PERMITTED IMPACT		TOTAL IMPACT	
	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)
2	666	0.65*	143	0.16	422	0.49	565	0.65
3	502	0.61	79	0.11	423	0.50	502	0.61
Total	1,168	1.26	222	0.27	845	0.99	1,067	1.26

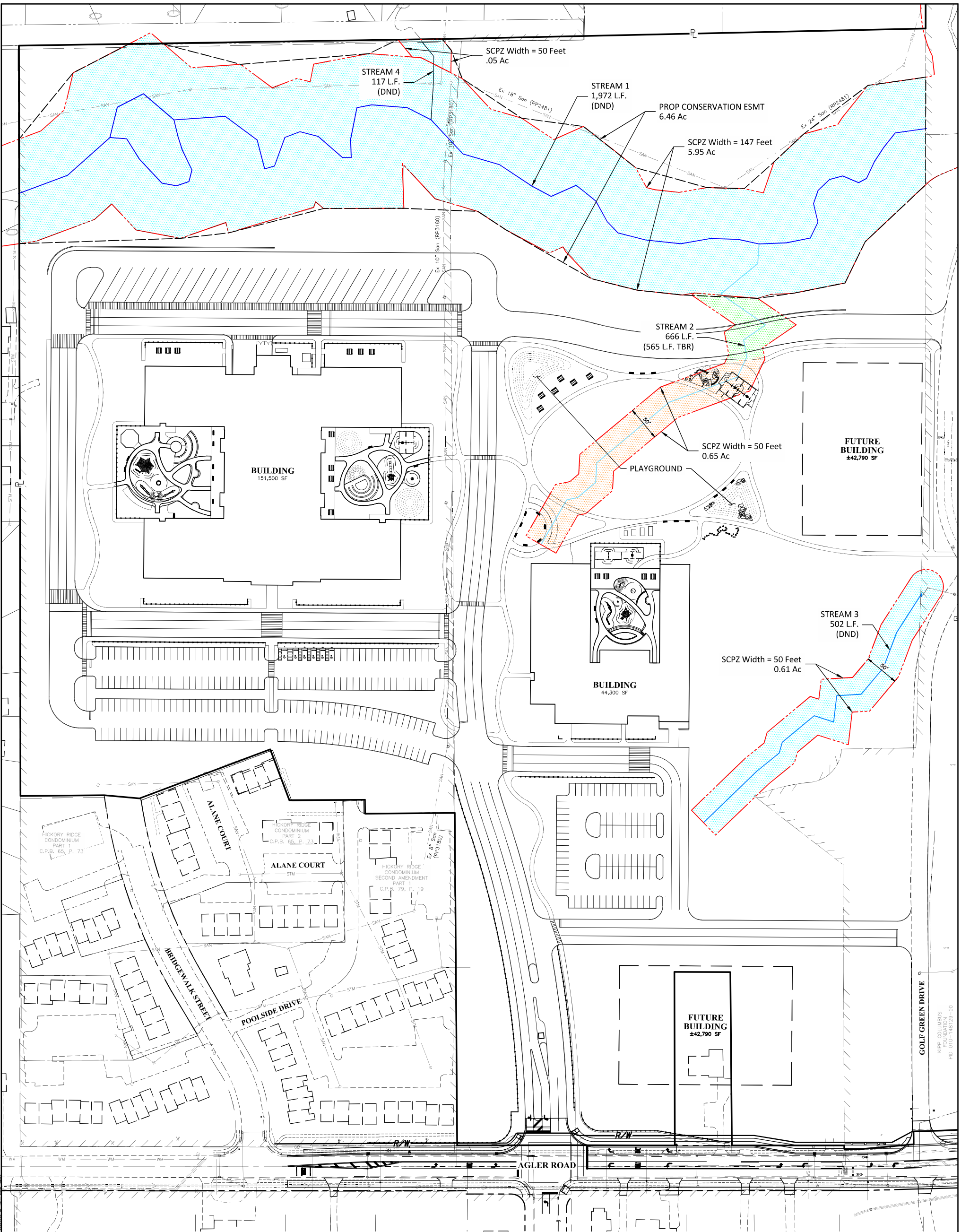
* Excludes the portion of the Stream 2 SCPZ that overlaps the Stream 1 SCPZ.

GRAPHIC SCALE



KIPP Exhibit 1 - Preferred Impact (Alt. A)

<p>EMHT Evans, Henschel, Hamilton & Tiller, Inc. Engineers • Surveyors • Planners • Scientists 5500 New Albany Road, Columbus, OH 43054 Phone: 614.775.4500 Toll Free: 888.775.2648 emht.com</p>	Date: June 29, 2021	
	Scale: 1" = 60'	
	Job No: 2020-1263	
	Sheet: 1 of 1	
REVISIONS		
MARK	DATE	DESCRIPTION



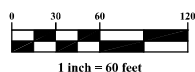
- LEGEND**
- Stream Corridor Protection Zone (6.56 Ac)
 - Stream Corridor Protection Zone Removal (0.49 Ac)
 - Stream Corridor Protection Zone Permitted Use (0.16 Ac)
 - Perennial Stream
 - Ephemeral Stream

STREAM AND SCPZ IMPACTS

STREAM	EXISTING		PERMITTED USE IMPACT		NON-PERMITTED IMPACT		TOTAL IMPACT	
	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)
2	666	0.65*	143	0.16	422	0.49	565	0.65
3	502	0.61	0	0	0	0	0	0
Total	1,168	1.26	143	0.16	422	0.49	565	0.65

* Excludes the portion of the Stream 2 SCPZ that overlaps the Stream 1 SCPZ.

GRAPHIC SCALE



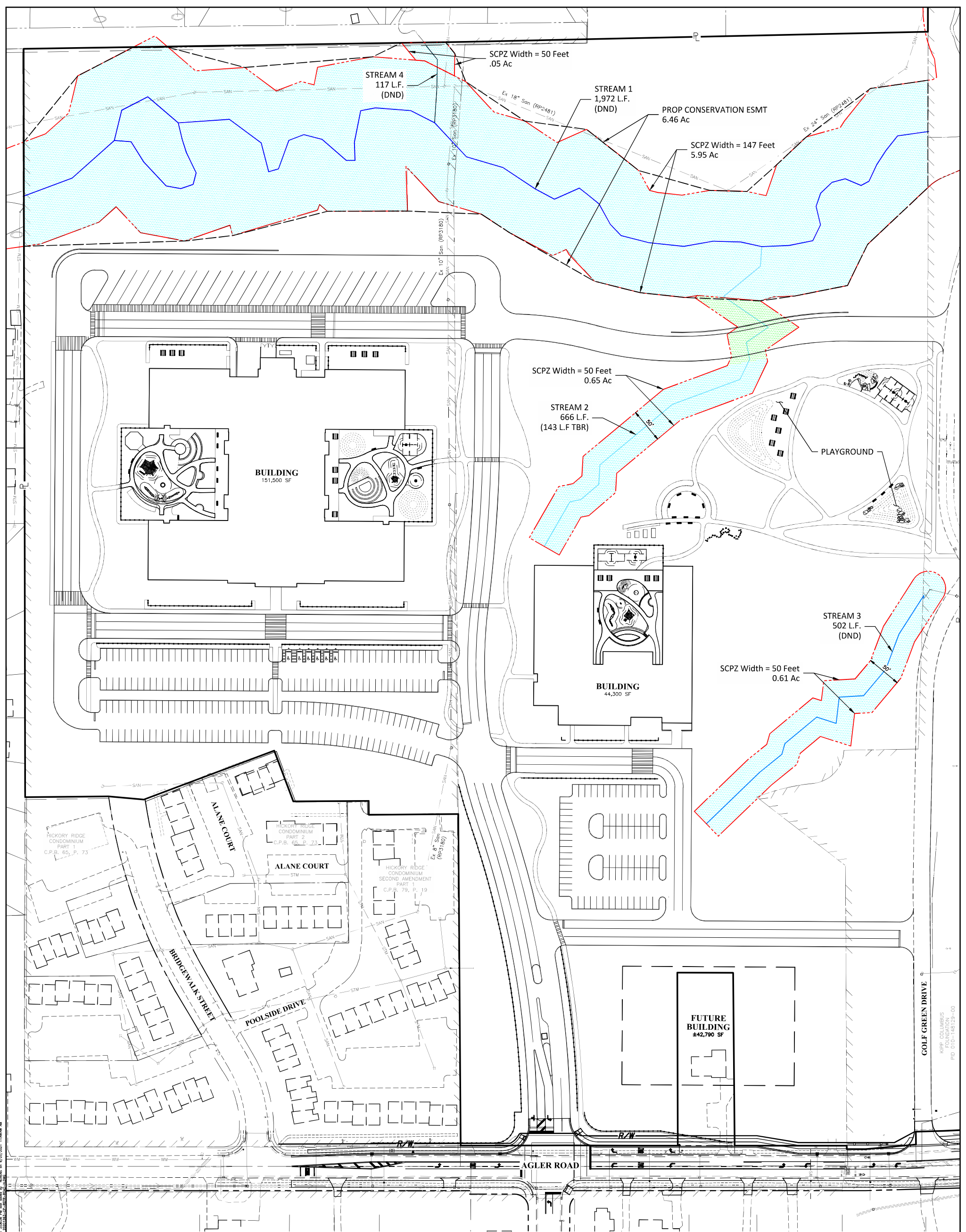
KIPP Exhibit 2 - Minimal Impact (Alt. B)

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 Sheet: 1 of 1

REVISIONS

MARK	DATE	DESCRIPTION

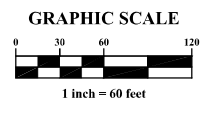


- LEGEND**
- Stream Corridor Protection Zone (7.05 Ac)
 - Stream Corridor Protection Zone Permitted Use (0.16 Ac)
 - Perennial Stream
 - Ephemeral Stream

STREAM AND SCPZ IMPACTS

STREAM	EXISTING		PERMITTED USE IMPACT		NON-PERMITTED IMPACT		TOTAL IMPACT	
	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)	LENGTH (LF)	SCPZ (AC)
2	666	0.65*	143	0.16	0	0	143	0.16
3	502	0.61	0	0	0	0	0	0
Total	1,168	1.26	143	0.16	0	0	143	0.16

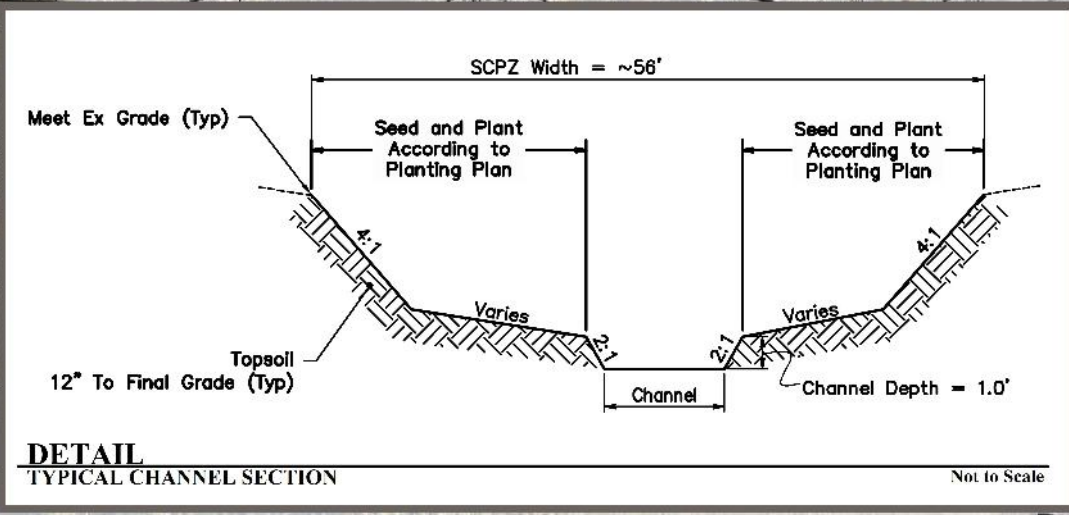
* Excludes the portion of the Stream 2 SCPZ that overlaps the Stream 1 SCPZ.



KIPP Exhibit 3 - No Impact (Alt. C)

<p>EMHT Evers, Machwart, Hambleton & Tilton, Inc. Engineers + Surveyors + Planners + Scientists 5500 New Albany Road, Columbus, OH 43054 Phone: 614.775.4300 Toll Free: 888.775.2648 emht.com</p>	Date: June 25, 2021	
	Scale: 1" = 60'	
	Job No: 2020-1263	
	Sheet: 1 of 1	
REVISIONS		
MARK	DATE	DESCRIPTION

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 User: jsmith



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 EX HIGH SCHOOL

CONSERVATION EASEMENT (1.23AC)

PROP 56' SCPZ / (0.99AC)

TREE PLANTINGS WITHIN SCPZ

PROPOSED STREAM (975LF)

PLANT LIST	
COMMON NAME	SCIENTIFIC NAME
Trees	
Sugar Maple	<i>Acer saccharum</i>
American Sycamore	<i>Platanus occidentalis</i>
Eastern Cottonwood	<i>Populus deltoides</i>
Swamp White Oak	<i>Quercus bicolor</i>
Bur Oak	<i>Quercus macrocarpa</i>
Pin Oak	<i>Quercus palustris</i>
Red Oak	<i>Quercus rubra</i>
Shrubs	
Buttonbush	<i>Cephalanthus occidentalis</i>
Gray Dogwood	<i>Cornus racemosa</i>
Red-Osier Dogwood	<i>Cornus sericea</i>
Peachleaf Willow	<i>Salix amygdaloides</i>
Black Willow	<i>Salix nigra</i>
Elderberry	<i>Sambucus canadensis</i>
Southern Arrow-Wood	<i>Viburnum dentatum</i>
Nanny-Berry	<i>Viburnum lentago</i>
Possumhaw Viburnum	<i>Viburnum nudum</i>

PLANTING TABLE						
MATERIAL	DENSITY	MIN OC SPACING	MIN CALIPER	MIN MATERIAL HEIGHT	SCHEDULE	WARRANTY
No. 15 Trees	100 Per Acre	10 Feet	1-inch	5 Feet	Mar 1 - May 15	100%
No. 5 Shrubs	150 Per Acre	10 Feet	N/A	24 Inches		100%



APPENDIX A:

Delineation of Waters of the U.S.



Engineers, Surveyors, Planners, Scientists

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20210139

**KIPP NORTH PROPERTY
LOCATED NORTH OF AGLER ROAD
AND ON THE WEST SIDE OF GOLF GREEN DRIVE,
CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO**

Delineation of Waters of the United States

KIPP Columbus Foundation

March 11, 2021

emht.com



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EXHIBITS

Exhibit 1:	Location Map
Exhibit 2:	USGS Topographic Map
Exhibit 3:	Soil Survey of Franklin County
Exhibit 4:	Flood Insurance Rate Map
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Exhibit 6:	Delineation Map

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APPENDICES

APPENDIX A:	Investigative Methodology
APPENDIX B:	USACE Wetland and Upland Dataforms
APPENDIX C:	ORAM Dataforms



1.0 INTRODUCTION

A routine delineation of Waters of the United States, including streams and wetlands, has been conducted and a report prepared by EMH&T for an approximately 39.8-acre property (KIPP North), located north of Agler Road and west of Golf Green Drive, in the City of Columbus, Franklin County, Ohio (Exhibit 1). This study was performed at the request of and is for the exclusive use of KIPP Columbus Foundation with an extension of reliance to Vorys, Sater, Seymour and Pease LLP. **KIPP Columbus Foundation requests an Approved Jurisdictional Determination (AJD) for the one (1) perennial stream, six (6) potentially non-jurisdictional isolated wetlands, three (3) potentially non-jurisdictional ephemeral streams, one (1) non-jurisdictional ephemeral swale, and one (1) non-jurisdictional ditch within the boundaries of the KIPP North Property.**

The study area mainly consists of vacant wooded land. A gravel access road and residential lots are located in the central and southern portions of the study area. The study area is surrounded by residential houses/buildings and a school. The approximate center coordinates of the site are 40.029343°, - 82.943489°.

The site is located in the Headwaters of Bliss Run-Alum Creek subbasin (HUC:05060001-16-02) within the Upper Scioto Watershed. The study area is regulated by the U.S. Army Corps of Engineers (USACE) Huntington District.

A Waters of the U.S. Delineation Report was submitted to the USACE on April 10, 2020 for the KIPP North Property. An Approved Jurisdictional Determination (LRH-2020-448-SCR) was granted by the USACE for the KIPP North Property, dated July 13, 2020. This delineation is a re-submittal of the original delineation report due to the addition of approximately 1.5 acres of land to the KIPP North Property. The updated KIPP North Property delineation report includes approximately 38.9 acres of land and has updated information on the surface water features based on the Navigable Waters Protection Rules (NWPR): Definition of “Waters of the United States”. In this final rule, the agencies interpret the term “Waters of the United States” to encompass: Traditional navigable waters’ perennial and intermittent tributaries that contribute surface water flow to such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters. Therefore, for the remainder of this report, the KIPP North Property will be the 39.8-acre site.

2.0 LITERATURE REVIEW

A review was made of available topographic maps, soils maps, and wetland inventory maps. This information helped determine topography and soil types present in the study area. It also identified any previously mapped wetlands and whether any portions of the study area were located within mapped floodways.

2.1 Topographic Features

As shown on Exhibit 2, the site is between the elevations of 780 to 830 feet (National Geodetic Vertical Datum) according to the USGS 7.5' Series *Northeast Columbus, Ohio* quadrangle (USGS, 1983). One (1) stream feature is mapped on the northern portion of the site. No open water ponds, marsh symbols, or other streams are mapped for the site.

2.2 Mapped Soils

According to the *Web Soil Survey for Franklin County, Ohio* (USDA, 2019) as shown on Exhibit 3, the site contains six (6) soil types. These soils are listed in Table 1 along with their hydric status.

TABLE 1. Hydric Status of Onsite Soils

Mapped Soil Unit	Hydric Status	Hydric Inclusions	Location of Hydric Inclusions
Alexandria silt loam, 6 to 12 percent slopes, eroded (AdC2)	Non-hydric with hydric inclusions	Pewamo (5%)	Depressions
Alexandria silt loam, 18 to 25 percent slopes, eroded (AdE2)	Non-Hydric	--	--
Bennington silt loam, 2 to 6 percent slopes (BeB)	Non-hydric with hydric inclusions	Pewamo (3%), Condit (3%)	Depressions
Bennington Urban land complex, 0 to 6 percent slopes (BfB)	Non-hydric with hydric inclusions	Typic ednoaquents (6%)	Moraines
Cardington silt loam, 2 to 6 percent slopes (Crd1B1)	Non-hydric with hydric inclusions	Pewamo (3%), Condit (4%)	Depressions
Shoals silt loam, occasionally flooded (Sh)	Non-hydric with hydric inclusions	Sloan (5%)	Depressions

A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA-NRCS, 2019). As shown on the Web Soil Survey for Franklin County, Ohio (Exhibit 3), Alexandria silt loam, 6 to 12 percent slopes, eroded (AdC2) is a non-hydric soil with inclusions of Pewamo in depressions. Bennington silt loam, 2 to 6 percent slopes (BeB) and Cardington silt loam, 2 to 6 percent slopes (Crd1B1) are non-hydric soils with inclusions of Pewamo and Condit in depressions. Bennington Urban land complex, 0 to 6 percent slopes (BfB) is a non-hydric soil with inclusions of typic ednoaquents in moraines. Shoals silt loam, occasionally flooded (Sh) is non-hydric soil with inclusions of Sloan in depressions. Alexandria silt loam, 18 to 25 percent slopes, eroded (AdE2) is non-hydric soil.

2.3 Hydrologic Conditions

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) was reviewed for the site (FEMA, 2018). As shown on Exhibit 4, the site lies within Zone X (unshaded), which is an area determined to be outside the 500-year floodplain.

The United States Fish and Wildlife Service’s (USFWS) National Wetland Inventory (NWI) map for Franklin County, Ohio was reviewed for the site (USFWS, 2019). As shown on Exhibit 5, one (1) stream feature is mapped on the northern portion of the site.

3.0 DELINEATION INVESTIGATION RESULTS

EMH&T field scientists conducted a field investigation on March 3, 2021 to identify the location, extent, and quality of wetland and stream features on the site. One (1) perennial stream, six (6) potentially non-jurisdictional isolated wetlands, three (3) potentially non-jurisdictional ephemeral streams, one (1) non-jurisdictional ephemeral swale, and one (1) non-jurisdictional ditch were identified for confirmation by the USACE. The identified surface water features are summarized in the following sections. The boundaries identified by EMH&T are potential, as only the USACE has the final authority to determine whether a wetland or water is jurisdictional. The investigative methodology employed is summarized in Appendix A. Photographs of these surface water features are included in the Photographs section.

3.1 Potential Jurisdictional Features

As shown on Exhibit 6, one (1) potentially jurisdictional stream (Stream 1) was identified within the study area. Table 2 lists the extent of the surface water features identified and Table 3 summarizes the jurisdictional classification of each surface water feature. The USACE wetland and upland data forms are provided in Appendix B.

3.2 Potential Non-Jurisdictional/Isolated Features

Six (6) potentially non-jurisdictional wetlands (isolated) were observed within the study area. The wetlands (Wetland A through Wetland F) do not receive hydrology from any jurisdictional surface water features. In EMH&T's opinion, the wetlands have no jurisdictional surface water connection and would therefore, be considered isolated.

Three (3) potentially non-jurisdictional ephemeral streams (Streams 2, 3, and 4) were observed within the study area. Ephemeral is defined in the Navigable Water Protection Rule (NWPR) as "surface water flowing or pooling only in direct response to precipitation." Stream 2 is an unnamed feature that begins in an eroded channel along a mowed grassy area. The stream extends into the wooded area but lacks the biological, hydrological, and physical characteristics of an intermittent stream. In EMH&T's opinion, Stream 2 is an ephemeral stream. During the field investigation on March 3, 2021, the surface water observed in Stream 2 appears to be from snowmelt.

Stream 3 flows through a wooded area then enters a culvert beneath the eastern adjacent KIPP School, indicating that it does not contribute surface water to a navigable water. The surface water observed in Stream 3 appears to be from snowmelt.

Stream 4 originates from a culvert that services stormwater from the northern adjacent residential development. The surface water observed in this feature appears to be from precipitation that drains into the stormwater catch basins within the residential development and then outlets into Stream 4.

In EMH&T's opinion, Stream 2, 3, and 4 would not be considered jurisdictional streams by the USACE since they are not perennial or intermittent tributaries. The State of Ohio considers ephemeral streams waters of the state, and regulates the impact of ephemeral streams under Sections 6111.021 and 6111.03(J)(1) of the Ohio Revised Code.

The Non-Jurisdictional Stormwater Ditch originates from a PVC plastic culvert pipe from the western adjacent apartment complex. The ditch has no ordinary high water mark (OHWM) and was constructed in the uplands to convey/store stormwater runoff. In EMH&T's opinion, the stormwater ditch would not be considered jurisdictional by the USACE.

The Non-Jurisdictional Ephemeral Swale originates from a PVC plastic pipe beneath a gravel road (Bridgeview Drive). This feature has no bed/bank or OHWM. This swale was saturated during the field investigation, but lacked any pools or surface water flow. Given the recent snowmelt, it is evident that this swale does not receive a significant amount of flow even during times of significant snowmelt. In EMH&T's opinion, the swale would not be considered jurisdictional by the USACE since it is not a perennial or intermittent tributary.

TABLE 2
Extent of Onsite Surface Water Features

Feature ID	Classification/Flow Regime	Wetland (ac)	Stream (lf)
Wetland A	Forested/Emergent	0.35	--
Wetland B	Forested/Emergent	0.06	--
Wetland C	Forested/Emergent	0.32	--
Wetland D	Forested	0.01	--
Wetland E	Forested/Emergent	0.11	--
Wetland F	Forested	0.006	--
Stream 1	Perennial	--	1,972
Stream 2	Ephemeral	--	666
Stream 3	Ephemeral	--	502
Stream 4	Ephemeral	--	117
Stormwater Ditch	Ephemeral	--	351
Ephemeral Swale	Ephemeral	--	134
Total	--	0.856	3,742

TABLE 3
Jurisdictional Classification of Onsite Surface Water Features

Feature ID	TNW	Perennial Tributary	Intermittent Tributary	Ephemeral Tributary	Adjacent Wetland	Isolated Wetland	Non-Jurisdictional Ditch/Swale
Wetland A	--	--	--	--	--	X	--
Wetland B	--	--	--	--	--	X	--
Wetland C	--	--	--	--	--	X	--
Wetland D	--	--	--	--	--	X	--
Wetland E	--	--	--	--	--	X	--
Wetland F	--	--	--	--	--	X	--
Stream 1	--	X	--	--	--	--	--
Stream 2	--	--	--	X	--	--	--
Stream 3	--	--	--	X	--	--	--
Stream 4	--	--	--	X	--	--	--
Stormwater Ditch	---	--	--	--	--	--	X
Swale	--	--	--	--	--	--	X

- TNW: Traditional Navigable Water
- Perennial Tributary: River, stream, or similar surface water channel contributing flow to a TNW continuously year round.
- Intermittent Tributary: River, stream, or similar surface water channel contributing flow to a TNW during certain times of the year, and more than in direct response to precipitation.
- Jurisdictional Impoundment: Standing body of open water contributing surface flow to a water of the U.S., or inundated by flooding from a water of the U.S. in a typical year.
- Adjacent Wetland: Wetlands abutting a water of the U.S., inundated by flooding from a water of the U.S. in a typical year, or separated from a water of the U.S. only by a berm, bank, dike, culvert or similar feature such that the wetland has a direct hydrologic surface connection to a water of the U.S.

4.0 WETLAND HABITAT ASSESSMENT

The Ohio Rapid Assessment Method (ORAM) Version 5 was developed by the Ohio EPA for use in determining wetland quality (OEPA, 2001). The ORAM seeks to determine whether wetlands are rated as Category 1, 2, or 3 based on the State of Ohio Wetland Water Quality Standards adopted in 1998. Category 1 wetlands exhibit limited quality, function, or value. Category 2 wetlands exhibit moderate quality, function, or value; this includes wetlands that have been degraded but have reasonable potential for restoration (Modified Category 2). Category 3 wetlands are wetlands of superior quality, function, or value. The ORAM asks a series of questions regarding wetland functions and characteristics and scores each wetland based on the answers provided. As shown in Table 4, each of the onsite wetlands scored in the Category 1 or 2 Gray Zone to Category 2 range. ORAM scores are potential until confirmed by the Ohio EPA. ORAM dataforms are located in Appendix C.

TABLE 4
Wetland Habitat Assessment Summary

Feature ID	Type	Area (ac)	ORAM Score	Wetland Category
Wetland A	Forested/Emergent	0.35	35.5	Modified 2
Wetland B	Forested/Emergent	0.06	32.5	1 or 2 gray zone
Wetland C	Forested/Emergent	0.32	44	Modified 2
Wetland D	Forested	0.01	28.5	1
Wetland E	Forested/Emergent	0.11	44	Modified 2
Wetland F	Forested	0.006	27	1

5.0 REGULATORY JURISDICTION

Impacts to WOTUS, including jurisdictional streams and wetlands, are regulated by the USACE and the U.S. Environmental Protection Agency (EPA) through Section 404 of the Clean Water Act (33 U.S.C. 1344). Prior to federal authorization for impacts to streams or wetlands, certification must also be obtained from the Ohio EPA as defined in Section 401 of the Clean Water Act (33 U.S.C. 1341). Accordingly, no filling may occur in the potentially jurisdictional wetlands described in this document without appropriate permits and authorization from the USACE and Ohio EPA.

The Ohio EPA regulates discharges of fill to isolated wetlands in the State of Ohio as provided in Sections 6111.021 through 6111.029 of the Ohio Revised Code. Accordingly, no filling may occur in isolated wetlands without an appropriate Isolated Wetland Permit from the state.

6.0 CONCLUSIONS

A routine delineation of Waters of the United States, including streams and wetlands, has been conducted and a report prepared by EMH&T for an approximately 39.8-acre property (KIPP North), located north of Agler Road and west of Golf Green Drive, in the City of Columbus, Franklin County, Ohio. This study was performed at the request of and is for the exclusive use of KIPP Columbus Foundation with an extension of reliance to Vorys, Sater, Seymour and Pease LLP.

The results of the delineation identified one (1) perennial stream, six (6) potentially non-jurisdictional isolated wetlands, three (3) potentially non-jurisdictional ephemeral streams, and one (1) non-jurisdictional ephemeral swale, and one (1) non-jurisdictional ditch within the boundaries of the KIPP North Property. The boundaries and jurisdictional status of the features are potential until verified by the USACE.

7.0 REFERENCES

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APPENDIX A:

Investigative Methodology

INVESTIGATIVE METHODOLOGY

Wetlands

According to the Federal Register (1980; 1982), wetlands are defined as *Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.* Potential wetlands located on non-agricultural lands are identified using the 1987 Wetland Delineation Manual (Environmental Laboratory, 1987) for confirmation by the U.S. Army Corps of Engineers (USACE).

Under normal site conditions, all three (3) indicators of jurisdictional wetlands including the presence of hydrophytic macrophytes, hydric soils and certain hydrologic indicators must be identified to meet the criteria for a jurisdictional wetland (Environmental Laboratory, 1987). As such, identification of potential wetlands requires characterization of plant community types, identification of hydric soils, and hydrologic indicators for each community type.

For all potential wetland areas, dominant species in the tree, sapling, shrub, woody vine, and herb layers are determined, in accordance with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, Version 2.0* (USACE, 2010). Recorded vegetative data consists of herbs with the greatest percentage of aerial cover within 5' of the plot center. Within a 15' radius of the plot center, saplings and shrubs with the greatest height are recorded. Within a 30' radius of the plot center, trees with the largest relative basal area and woody vines with the greatest number of stems are recorded. Species within each of these layers are listed on data forms in order of dominance.

Dominance is determined for each stratum individually. Dominant species include those that comprise 50 percent of the total dominance measure for a stratum, plus any additional species comprising 20 percent or more of the total dominance measure of a stratum. Hydrophytic vegetation is determined to be present when more than 50 percent of the dominants in a sample area are listed as facultative (FAC), facultative wetland (FACW) or obligate wetland (OBL) plants according to Lichvar (2016).

Where possible, soil data are collected by digging a test pit to a maximum depth of 20" to determine the presence of hydric soil. Soil matrix and mottle colors are identified using a Munsell Soil Color Chart (Macbeth, Revised 1994). Evidence of any hydric soil characteristics and evidence of the presence of wetland hydrology are also recorded.

The boundaries of areas that meet all three (3) wetland criteria are identified and measured in the field. Points at which dominant vegetation species changes from wetland to upland, where soils change from hydric to non-hydric, or where indicators of wetland hydrology are no longer observed are noted. The characteristics of each community type are recorded on dataforms and sample points are chosen to represent both an identified potential wetland and its surrounding upland community. All potential wetlands delineated in the field are marked with flagging and mapped using a Trimble GeoXH GPS unit. The dominant vegetation, soils, and indicators of wetland hydrology are described on delineation forms. Wetland communities are classified according to the classification scheme of Cowardin et al. (1979).

Wetlands are further classified using the Ohio Rapid Assessment Method (ORAM) Version 5 (OEPA, 2001). The ORAM seeks to determine whether wetlands are rated as Category 1, 2, or 3 based on the State of Ohio Wetland Water Quality Standards. Category 1 wetlands exhibit limited quality, function, or value. Category 2 wetlands exhibit moderate quality, function, or value; this includes wetlands that have been degraded but have reasonable potential for restoration (Modified Category 2). Category 3 wetlands are wetlands of superior quality, function, or value.

Streams

The centerline of the streams are mapped for their entire length found on-site using a Trimble® GPS unit. Ordinary High Water Marks (OHWM), which define the outermost regulatory boundaries of streams and open waters, are flagged and mapped using the GPs unit.

Streams are classified as ephemeral, intermittent, or perennial based on site observations, and are assigned a regulatory classification according to the most recent USACE guidance. Streams are also assessed using the Ohio EPA's Qualitative Habitat Evaluation Index (QHEI) and/or Headwater Habitat Evaluation Metric (HHEI). Assessment locations are placed in representative reaches of the streams within the assessment area.

The QHEI is used for streams with drainage areas greater than one square mile and pools with maximum water depths greater than 15.75 in (40 cm) (Ohio EPA 2006). QHEI scoring is based on substrate types, in-stream cover, channel morphology, riparian quality and bank erosion, pool/glide and riffle/run quality, and gradient. These metrics reflect stream habitat features that are correlated with the potential to attain the aquatic life use designation for Ohio streams.

Streams that do not meet these requirements are assessed using the HHEI (Ohio EPA, 2012). HHEI scoring is based on three (3) parameters that are associated with habitat quality in small headwater streams: substrate type, maximum pool depth and bankfull width. Using the HHEI scoring system, streams may be categorized as Ephemeral Aquatic Streams (modified/natural channel), Small Drainage Warm Water Streams (modified/natural channel), and Spring Water Streams. Spring Water Streams represent high quality, cold water streams, Small Drainage Warm Water Streams represent warm water streams, and Ephemeral Aquatic Streams (seasonally dry) with limited ecological function.

Open Water Habitat

The boundaries of open water systems (ponds and lakes) are delineated either using recent aerial photography or by flagging boundaries in the field and locating them using a GPS unit.

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Ohio Environmental Protection Agency. 2018. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (Version 4.0)*. Ohio Environmental Protection Agency, Division of Surface Water, Columbus, Ohio. Available online: https://www.epa.state.oh.us/Portals/35/rules/PHWHManual_2018_Ver_4%2010-22-18.pdf

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APPENDIX B:

USACE Wetland and Upland Dataforms

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: Maynard State: OH Sampling Point: Wetland A
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave
 Slope (%): 3 Lat: 40.027759 Long: -82.942941 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. <u>Salix nigra</u>	25	Yes	OBL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
2. <u>Fraxinus pennsylvanica</u>	20	Yes	FACW																																	
3. <u>Acer negundo</u>	10	No	FAC																																	
4. _____																																				
5. _____																																				
	55 =Total Cover																																			
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																																				
1. <u>Cornus sp.</u>	30	Yes	FACW	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td></td> <td style="text-align: right;">Multiply by:</td> <td></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>25</u></td> <td>x 1 =</td> <td align="center"><u>25</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>60</u></td> <td>x 2 =</td> <td align="center"><u>120</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>85</u></td> <td>x 3 =</td> <td align="center"><u>255</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>10</u></td> <td>x 4 =</td> <td align="center"><u>40</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>2</u></td> <td>x 5 =</td> <td align="center"><u>10</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>182</u> (A)</td> <td></td> <td align="center"><u>450</u> (B)</td> </tr> <tr> <td>Prevalence Index = B/A =</td> <td></td> <td></td> <td align="center"><u>2.47</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>25</u>	x 1 =	<u>25</u>	FACW species	<u>60</u>	x 2 =	<u>120</u>	FAC species	<u>85</u>	x 3 =	<u>255</u>	FACU species	<u>10</u>	x 4 =	<u>40</u>	UPL species	<u>2</u>	x 5 =	<u>10</u>	Column Totals:	<u>182</u> (A)		<u>450</u> (B)	Prevalence Index = B/A =			<u>2.47</u>
Total % Cover of:		Multiply by:																																		
OBL species	<u>25</u>	x 1 =	<u>25</u>																																	
FACW species	<u>60</u>	x 2 =	<u>120</u>																																	
FAC species	<u>85</u>	x 3 =	<u>255</u>																																	
FACU species	<u>10</u>	x 4 =	<u>40</u>																																	
UPL species	<u>2</u>	x 5 =	<u>10</u>																																	
Column Totals:	<u>182</u> (A)		<u>450</u> (B)																																	
Prevalence Index = B/A =			<u>2.47</u>																																	
2. <u>Acer negundo</u>	15	Yes	FAC																																	
3. <u>Rosa multiflora</u>	10	No	FACU																																	
4. _____																																				
5. _____																																				
	55 =Total Cover																																			
Herb Stratum (Plot size: <u>5'</u>)																																				
1. <u>Elymus sp.</u>	30	Yes	FAC	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. <u>Daucus carota</u>	2	No	UPL																																	
3. <u>Lysimachia nummularia</u>	10	No	FACW																																	
4. <u>Poa sp.</u>	30	Yes	FAC																																	
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
	72 =Total Cover																																			
Woody Vine Stratum (Plot size: <u>15'</u>)																																				
1. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																
2. _____																																				
	=Total Cover																																			

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

SOIL

Sampling Point: Wetland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 2/2	100						Clay
3-9	10YR 3/2	95	10YR 4/6	5	C	M		Prominent redox concentrations
9-12	10YR 4/2	80	10YR 4/6	20	C	M		Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)
- Dark Surface (S7)
- 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____ N/A
 Depth (inches): _____

Hydric Soil Present? Yes 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)
- 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 on 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 Depth (inches): 2
 Water Table Present? Yes No Depth (inches): 2
 Saturation Present? Yes No Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: Maynard State: OH Sampling Point: Upland A
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Covex
 Slope (%): 8 Lat: 40.027759 Long: -82.942941 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus pennsylvanica</u>	<u>35</u>	<u>Yes</u>	<u>FACW</u>	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>35</u> =Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lonicera sp.</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>70</u> =Total Cover			
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	_____ =Total Cover			
Woody Vine Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Vitis sp.</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
2. _____				
	<u>15</u> =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: 33.3% (A/B)

Prevalence Index worksheet:
 Total % Cover of: Multiply by:
 OBL species 0 x 1 = 0
 FACW species 35 x 2 = 70
 FAC species 0 x 3 = 0
 FACU species 85 x 4 = 340
 UPL species 0 x 5 = 0
 Column Totals: 120 (A) 410 (B)
 Prevalence Index = B/A = 3.42

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

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

SOIL

Sampling Point: Upland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100						Clay
6-12	10YR 3/3	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)
- Dark Surface (S7)
- 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____ N/A
 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 on 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: KIPP State: OH Sampling Point: Wetland B
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave
 Slope (%): 7 Lat: 40.030183 Long: -82.944290 Datum: _____
 Soil Map Unit Name: Cardington silt loam, 2 to 6 percent slopes NWI classification: No
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. <u>Acer saccharinum</u>	<u>30</u>	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.7%</u> (A/B)																																
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	No	FACW																																	
3. <u>Ulmus americana</u>	<u>15</u>	Yes	FACW																																	
4. _____																																				
5. _____																																				
	<u>50</u>	=Total Cover																																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																																				
1. <u>Fraxinus pennsylvanica</u>	<u>30</u>	Yes	FACW	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td align="right">Total % Cover of:</td> <td></td> <td align="right">Multiply by:</td> <td></td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>185</u></td> <td>x 2 =</td> <td align="center"><u>370</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>30</u></td> <td>x 3 =</td> <td align="center"><u>90</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>15</u></td> <td>x 4 =</td> <td align="center"><u>60</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td>x 5 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>230</u> (A)</td> <td></td> <td align="center"><u>520</u> (B)</td> </tr> <tr> <td>Prevalence Index = B/A =</td> <td></td> <td></td> <td align="center"><u>2.26</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>185</u>	x 2 =	<u>370</u>	FAC species	<u>30</u>	x 3 =	<u>90</u>	FACU species	<u>15</u>	x 4 =	<u>60</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>230</u> (A)		<u>520</u> (B)	Prevalence Index = B/A =			<u>2.26</u>
Total % Cover of:		Multiply by:																																		
OBL species	<u>0</u>	x 1 =	<u>0</u>																																	
FACW species	<u>185</u>	x 2 =	<u>370</u>																																	
FAC species	<u>30</u>	x 3 =	<u>90</u>																																	
FACU species	<u>15</u>	x 4 =	<u>60</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>230</u> (A)		<u>520</u> (B)																																	
Prevalence Index = B/A =			<u>2.26</u>																																	
2. <u>Acer saccharinum</u>	<u>15</u>	Yes	FACW																																	
3. <u>Rosa multiflora</u>	<u>15</u>	Yes	FACU																																	
4. <u>Ligustrum sp.</u>	<u>10</u>	No	FAC																																	
5. <u>Lonicera sp.</u>	<u>5</u>	No	FAC																																	
	<u>75</u>	=Total Cover																																		
Herb Stratum (Plot size: <u>5'</u>)																																				
1. <u>Cinna arundinacea</u>	<u>75</u>	Yes	FACW	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. <u>Polygonum sp.</u>	<u>15</u>	No	FACW																																	
3. <u>Aster sp.</u>	<u>10</u>	No	FAC																																	
4. _____																																				
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
	<u>100</u>	=Total Cover																																		
Woody Vine Stratum (Plot size: <u>15'</u>)																																				
1. <u>Toxicodendron radicans</u>	<u>5</u>	Yes	FAC	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																
2. _____																																				
	<u>5</u>	=Total Cover																																		

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

SOIL

Sampling Point: Wetland B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/2	90	10YR 4/6	10	C	M		Clay
3-6	10YR 4/2	90	10YR 4/6	10	C	M		Prominent redox concentrations
6-12	10YR 4/2	85	10YR 4/6	15	C	M		Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)
- Dark Surface (S7)
- 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____ N/A
 Depth (inches): _____

Hydric Soil Present? Yes 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)
- 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 on 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 Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 7
 Saturation Present? Yes No Depth (inches): 7
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: Kipp State: OH Sampling Point: Upland B
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Covex
 Slope (%): _____ Lat: 40.030126 Long: -82.944500 Datum: _____
 Soil Map Unit Name: Cardington silt loam, 2 to 6 percent slopes NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ulmus americana</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Acer saccharinum</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
3. _____				
4. _____				
5. _____				
	<u>70</u>	<u>=Total Cover</u>		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lonicera sp.</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>30</u>	<u>=Total Cover</u>		
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
		<u>=Total Cover</u>		
Woody Vine Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Vitis sp.</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
2. _____				
	<u>15</u>	<u>=Total Cover</u>		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>70</u>	x 2 = <u>140</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>115</u> (A)	<u>305</u> (B)
Prevalence Index = B/A = <u>2.65</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: Upland B

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100						Clay
6-12	10YR 3/3	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)				

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

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

Remarks:

HYDROLOGY

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

Field Observations:				Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches): <u> </u>	

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: KIPP State: OH Sampling Point: Wetland C
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave
 Slope (%): 3 Lat: 40.028936 Long: -82.944410 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer saccharinum</u>	30	Yes	FACW	
2. <u>Ulmus americana</u>	25	Yes	FACW	
3. <u>Acer negundo</u>	15	Yes	FACW	
4. _____				
5. _____				
	70	=Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>Fraxinus pennsylvanica</u>	30	Yes	FACW	
2. <u>Rosa multiflora</u>	15	Yes	FACU	
3. <u>Privet sp.</u>	10	No	FACW	
4. _____				
5. _____				
	55	=Total Cover		
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Cinna arundinacea</u>	25	Yes	OBL	
2. <u>Carex sp.</u>	15	Yes	FACW	
3. <u>Polygonum sp.</u>	10	No	FACW	
4. <u>Symphotrichum lateriflorum</u>	5	No	FACW	
5. <u>Scirpus sp.</u>	5	No	FACW	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	60	=Total Cover		
Woody Vine Stratum (Plot size: <u>15'</u>)				
1. _____				
2. _____				
	=Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>25</u>	x 1 = <u>25</u>
FACW species <u>145</u>	x 2 = <u>290</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>185</u> (A)	<u>375</u> (B)
Prevalence Index = B/A = <u>2.03</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: Wetland C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 2/2	95	10YR 4/6	5	C	M	Loamy/Clayey	
3-6	10YR 2/2	90	10YR 4/6	10	C	M	Loamy/Clayey	
6-12	10YR 3/1	90	10YR 4/6	10	C	M	Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)
- Dark Surface (S7)
- 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____ N/A
 Depth (inches): _____

Hydric Soil Present? Yes 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)
- 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 on 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 Depth (inches): 1
 Water Table Present? Yes No Depth (inches): 1
 Saturation Present? Yes No Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

SOIL

Sampling Point: Upland C

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100						Clay
6-12	10YR 3/3	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

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

HYDROLOGY

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

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: KIPP State: OH Sampling Point: Wetland D
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave
 Slope (%): 4 Lat: 40.028703 Long: -82.94672 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. <u>Populus deltoides</u>	25	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																																
2. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW																																	
3. <u>Acer saccharinum</u>	15	Yes	FACW																																	
4. _____																																				
5. _____																																				
	50	=Total Cover																																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																																				
1. <u>Fraxinus pennsylvanica</u>	15	Yes	FACW	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td align="center"><u>0</u></td> <td>x 1 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td align="center"><u>55</u></td> <td>x 2 =</td> <td align="center"><u>110</u></td> </tr> <tr> <td>FAC species</td> <td align="center"><u>38</u></td> <td>x 3 =</td> <td align="center"><u>114</u></td> </tr> <tr> <td>FACU species</td> <td align="center"><u>0</u></td> <td>x 4 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>UPL species</td> <td align="center"><u>0</u></td> <td>x 5 =</td> <td align="center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td align="center"><u>93</u> (A)</td> <td></td> <td align="center"><u>224</u> (B)</td> </tr> <tr> <td></td> <td></td> <td>Prevalence Index = B/A =</td> <td align="center"><u>2.41</u></td> </tr> </table>	Total % Cover of:		Multiply by:		OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>55</u>	x 2 =	<u>110</u>	FAC species	<u>38</u>	x 3 =	<u>114</u>	FACU species	<u>0</u>	x 4 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>93</u> (A)		<u>224</u> (B)			Prevalence Index = B/A =	<u>2.41</u>
Total % Cover of:		Multiply by:																																		
OBL species	<u>0</u>	x 1 =	<u>0</u>																																	
FACW species	<u>55</u>	x 2 =	<u>110</u>																																	
FAC species	<u>38</u>	x 3 =	<u>114</u>																																	
FACU species	<u>0</u>	x 4 =	<u>0</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>93</u> (A)		<u>224</u> (B)																																	
		Prevalence Index = B/A =	<u>2.41</u>																																	
2. <u>Lonicera sp.</u>	5	Yes	FAC																																	
3. <u>Ligustrum sp.</u>	3	No	FAC																																	
4. _____																																				
5. _____																																				
	23	=Total Cover																																		
Herb Stratum (Plot size: <u>5'</u>)																																				
1. <u>Carex sp.</u>	15	Yes	FACW	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
	15	=Total Cover																																		
Woody Vine Stratum (Plot size: <u>15'</u>)																																				
1. <u>Vitis sp.</u>	5	Yes	FAC	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																
2. _____																																				
	5	=Total Cover																																		

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

SOIL

Sampling Point: Wetland D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 4/3	75	10YR 5/6	25	C	M	Mucky Loam/Clay	
3-6	10YR 4/2	70	10YR 5/6	30	C	M	Mucky Loam/Clay	Prominent redox concentrations
6-12	10YR 4/2	70	10YR 5/6	30	C	M	Mucky Loam/Clay	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)
- Dark Surface (S7)
- 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____ N/A
 Depth (inches): _____

Hydric Soil Present? Yes 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)
- 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 on 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 Depth (inches): 1
 Water Table Present? Yes No Depth (inches): 1
 Saturation Present? Yes No Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: Kipp State: OH Sampling Point: Upland D
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Covex
 Slope (%): 3 Lat: 40.029317 Long: -82.945297 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
1. <u>Populus deltoides</u>	45	Yes	FAC																	
2. _____																				
3. _____																				
4. _____																				
5. _____																				
	45 =Total Cover																			
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>55</u></td> <td>x 4 = <u>220</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>355</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.55</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>55</u>	x 4 = <u>220</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>355</u> (B)	Prevalence Index = B/A = <u>3.55</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>45</u>	x 3 = <u>135</u>																			
FACU species <u>55</u>	x 4 = <u>220</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>355</u> (B)																			
Prevalence Index = B/A = <u>3.55</u>																				
1. <u>Lonicera sp.</u>	45	Yes	FACU																	
2. <u>Rosa multiflora</u>	5	No	FACU																	
3. _____																				
4. _____																				
5. _____																				
	50 =Total Cover																			
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
	_____ =Total Cover																			
Woody Vine Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>																
1. <u>Vitis sp.</u>	5	Yes	FACU																	
2. _____																				
	5 =Total Cover																			

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

SOIL

Sampling Point: Upland D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100						Clay
6-12	10YR 3/3	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Dark Surface (S7)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12)</p> <p><input type="checkbox"/> Red Parent Material (F21)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (F22)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

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

HYDROLOGY

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: KIPP State: OH Sampling Point: Wetland E
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave
 Slope (%): 3 Lat: 40.029647 Long: -82.945459 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ulmus americana</u>	<u>20</u>	Yes	FACW	
2. <u>Acer saccharinum</u>	<u>5</u>	Yes	FACW	
3. _____				
4. _____				
5. _____				
	<u>25</u>	=Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	Yes	FACW	
2. <u>Ligustrum sp.</u>	<u>10</u>	Yes	FAC	
3. <u>Rosa multiflora</u>	<u>5</u>	No	FACU	
4. _____				
5. _____				
	<u>35</u>	=Total Cover		
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Cinna sp.</u>	<u>30</u>	Yes	FACW	
2. <u>Polygonum sp.</u>	<u>25</u>	Yes	FACW	
3. <u>Aster sp.</u>	<u>20</u>	Yes	FAC	
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
	<u>75</u>	=Total Cover		
Woody Vine Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lonicera japonica</u>	<u>10</u>	Yes	FACU	
2. <u>Vitis sp.</u>	<u>10</u>	Yes	FAC	
	<u>20</u>	=Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>100</u>	x 2 = <u>200</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>155</u> (A)	<u>380</u> (B)
Prevalence Index = B/A = <u>2.45</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: Wetland E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/1	90	10YR 5/6	10	C	M		Clay
3-9	10YR 4/2	85	10YR 6/6	15	C	M		
9-12	10YR 5/1	75	10YR 6/6	25	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)
- Dark Surface (S7)
- 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____ N/A
 Depth (inches): _____

Hydric Soil Present? Yes 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)
- 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 on 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 Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 1
 Saturation Present? Yes No Depth (inches): 1
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: Kipp State: OH Sampling Point: Upland E
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Covex
 Slope (%): _____ Lat: 40.029317 Long: -82.945297 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Ulmus americana</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	
2. <u>Acer saccharinum</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	
3. _____				
4. _____				
5. _____				
	<u>70</u>	<u>=Total Cover</u>		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Lonicera sp.</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>30</u>	<u>=Total Cover</u>		
Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
Woody Vine Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Vitis sp.</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	
2. _____				
	<u>15</u>	<u>=Total Cover</u>		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>70</u>	x 2 = <u>140</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>30</u>	x 4 = <u>120</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>115</u> (A)	<u>305</u> (B)
Prevalence Index = B/A = <u>2.65</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: Upland E

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100						Clay
6-12	10YR 3/3	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

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

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

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

Remarks:

HYDROLOGY

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

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

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: KIPP State: OH Sampling Point: Wetland F
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave
 Slope (%): 4 Lat: 40.028737 Long: -82.946068 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology No significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>30</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Acer negundo</u>	<u>15</u>	Yes	FACW																	
3. <u>Acer saccharinum</u>	<u>25</u>	Yes	FACW																	
4. _____																				
5. _____																				
	<u>70</u>	=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)																				
1. <u>Fraxinus pennsylvanica</u>	<u>5</u>	Yes	FACW	Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: right;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>34</u></td> <td>x 3 = <u>102</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>99</u> (A)</td> <td><u>232</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.34</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>34</u>	x 3 = <u>102</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>99</u> (A)	<u>232</u> (B)	Prevalence Index = B/A = <u>2.34</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>65</u>	x 2 = <u>130</u>																			
FAC species <u>34</u>	x 3 = <u>102</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>99</u> (A)	<u>232</u> (B)																			
Prevalence Index = B/A = <u>2.34</u>																				
2. <u>Ligustrum sp.</u>	<u>4</u>	Yes	FAC																	
3. _____																				
4. _____																				
5. _____																				
	<u>9</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5'</u>)																				
1. <u>Carex sp.</u>	<u>20</u>	Yes	FACW	Hydrophytic Vegetation Indicators: _____ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ _____ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
	<u>20</u>	=Total Cover																		
Woody Vine Stratum (Plot size: <u>15'</u>)																				
1. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____																				

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

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
 See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
 Requirement Control Symbol EXEMPT:
 (Authority: AR 335-15, paragraph 5-2a)

Project/Site: Kipp North City/County: Franklin County Sampling Date: 3/5/2020
 Applicant/Owner: Kipp State: OH Sampling Point: Upland F
 Investigator(s): Bryan Lombard Section, Township, Range: T1N R17W
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Covex
 Slope (%): 3 Lat: 40.029317 Long: -82.945297 Datum: _____
 Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes NWI classification: No

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

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Populus deltoides</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
	<u>45</u>	<u>=Total Cover</u>		
Sapling/Shrub Stratum (Plot size: <u>15'</u>)				
1. <u>Lonicera sp.</u>	<u>45</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Rosa multiflora</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
	<u>50</u>	<u>=Total Cover</u>		
Herb Stratum (Plot size: <u>5'</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
		<u>=Total Cover</u>		
Woody Vine Stratum (Plot size: <u>15'</u>)				
1. <u>Vitis sp.</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	
2. _____				
	<u>5</u>	<u>=Total Cover</u>		

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: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>45</u>	x 3 = <u>135</u>
FACU species <u>55</u>	x 4 = <u>220</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u> (A)	<u>355</u> (B)
Prevalence Index = B/A = <u>3.55</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

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

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No X

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

SOIL

Sampling Point: Upland F

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/2	100						Clay
6-12	10YR 3/3	100						

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)
- Dark Surface (S7)
- 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 Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____ N/A
 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 on 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? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

APPENDIX C:

ORAM Dataforms

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name: Bryan Lombard	
Date: 3/18/2020	
Affiliation: EMH&T	
Address: 5500 New Albany Road, Columbus, OH, 43054	
Phone Number: 614.775.4517	
e-mail address: blombard@emht.com	
Name of Wetland: Wetland B	
Vegetation Communit(ies): Forested/Emergent	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Exhibit 1	
Lat/Long or UTM Coordinate	40.030183 / -82.944290
USGS Quad Name	Northeast Columbus
County	Franklin
Township	Columbus
Section and Subsection	T1N R17W
Hydrologic Unit Code	050600011602
Site Visit	3/5/2020
National Wetland Inventory Map	No
Ohio Wetland Inventory Map	No
Soil Survey	Cardington silt loam, 2 to 6 percent slopes
Delineation report/map	Exhibit 6

Name of Wetland: Wetland B	
Wetland Size (acres, hectares):	0.06
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Exhibit 6	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 32.5	Category: 1 or 2 gray zone

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	<input checked="" type="radio"/> NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="radio"/> NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	<input checked="" type="radio"/> NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	<input checked="" type="radio"/> NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	<input checked="" type="radio"/> NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	<input checked="" type="radio"/> NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	<input checked="" type="radio"/> NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="radio"/> NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans var. glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica var. capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis spp.</i>	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum spp.</i>		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Kipp North - Wetland B	Rater(s): Bryan Lombard	Date: 3/5/2020
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

8	8
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - LOW. Old field (>10 years), shrub land, young second growth forest. (5)
 - MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
 - HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	16
max 30 pts.	subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/Intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<ul style="list-style-type: none"> <input type="checkbox"/> ditch <input checked="" type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input checked="" type="checkbox"/> stormwater input 	<ul style="list-style-type: none"> <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

10.5	26.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<ul style="list-style-type: none"> <input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants 	<ul style="list-style-type: none"> <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input checked="" type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

26.5
subtotal this page

Site: Kipp North - Wetland B	Rater(s): Bryan Lombard	Date: 3/5/2020
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26.5

subtotal first page

0	26.5
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max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- Bog (10)
- Fen (10)
- Old growth forest (10)
- Mature forested wetland (5)
- Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- Lake Erie coastal/tributary wetland-restricted hydrology (5)
- Lake Plain Sand Prairies (Oak Openings) (10)
- Relict Wet Prairies (10)
- Known occurrence state/federal threatened or endangered species (10)
- Significant migratory songbird/water fowl habitat or usage (10)
- Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6	32.5
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max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- 1 Emergent
- Shrub
- 1 Forest
- Mudflats
- Open water
- Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- High (5)
- Moderately high(4)
- Moderate (3)
- Moderately low (2)
- Low (1)
- None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- Extensive >75% cover (-5)
- Moderate 25-75% cover (-3)
- Sparse 5-25% cover (-1)
- Nearly absent <5% cover (0)
- Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 2 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

32.5

1 or 2 gray zone

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	0	0
	Metric 2. Buffers and surrounding land use	8	8
	Metric 3. Hydrology	8	16
	Metric 4. Habitat	10.5	26.5
	Metric 5. Special Wetland Communities	0	26.5
	Metric 6. Plant communities, interspersions, microtopography	6	32.5
	TOTAL SCORE	32.5	Category based on score breakpoints 1 or 2 gray zone

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
<p>Did you answer "Yes" to any of the following questions:</p> <p>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10</p>	<p>YES <input type="radio"/> NO <input checked="" type="radio"/></p> <p>Wetland is categorized as a Category 3 wetland</p>	<p>Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM</p>
<p>Did you answer "Yes" to any of the following questions:</p> <p>Narrative Rating Nos. 1, 8b, 9b, 9e, 11</p>	<p>YES <input type="radio"/> NO <input checked="" type="radio"/></p> <p>Wetland should be evaluated for possible Category 3 status</p>	<p>Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.</p>
<p>Did you answer "Yes" to</p> <p>Narrative Rating No. 5</p>	<p>YES <input type="radio"/> NO <input checked="" type="radio"/></p> <p>Wetland is categorized as a Category 1 wetland</p>	<p>Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM</p>
<p>Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?</p>	<p>YES <input type="radio"/> NO <input checked="" type="radio"/></p> <p>Wetland is assigned to the appropriate category based on the scoring range</p>	<p>If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.</p>
<p>Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?</p>	<p>YES <input type="radio"/> NO <input checked="" type="radio"/></p> <p>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria</p>	<p>Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).</p>
<p>Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?</p>	<p>YES <input type="radio"/> NO <input checked="" type="radio"/></p> <p>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form</p>	<p>A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.</p>

Final Category
 Choose one Category Category 2 Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name: Bryan Lombard	
Date: 3/5/2020	
Affiliation: EMH&T	
Address: 5500 New Albany Road, Columbus, OH, 43054	
Phone Number: 614.775.4517	
e-mail address: blombard@emht.com	
Name of Wetland: Wetland C	
Vegetation Communit(ies): Forested/Emergent	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Exhibit 1	
Lat/Long or UTM Coordinate	40.028828/ -82.944577
USGS Quad Name	Northeast Columbus
County	Franklin
Township	Columbus
Section and Subsection	T1N R17W
Hydrologic Unit Code	050600011602
Site Visit	3/5/2020
National Wetland Inventory Map	No
Ohio Wetland Inventory Map	No
Soil Survey	Bennington silt loam, 2 to 6 percent slopes
Delineation report/map	Exhibit 6

Name of Wetland: Wetland C	
Wetland Size (acres, hectares):	0.32
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Exhibit 6	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 44	Category: Modified 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	<input checked="" type="radio"/> NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="radio"/> NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	<input checked="" type="radio"/> NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	<input checked="" type="radio"/> NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	<input checked="" type="radio"/> NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	<input checked="" type="radio"/> NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	<input checked="" type="radio"/> NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="radio"/> NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans var. glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica var. capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis spp.</i>	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum spp.</i>		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Kipp North - Wetland C	Rater(s): Bryan Lombard	Date: 3/5/2020
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

8	10
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - LOW. Old field (>10 years), shrub land, young second growth forest. (5)
 - MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
 - HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

13	23
max 30 pts.	subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/Intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input checked="" type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input type="checkbox"/> other _____

13	36
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

36
subtotal this page

Site: Kipp North - Wetland C	Rater(s): Bryan Lombard	Date: 3/5/2020
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36

subtotal first page

0	36
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- Bog (10)
- Fen (10)
- Old growth forest (10)
- Mature forested wetland (5)
- Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- Lake Erie coastal/tributary wetland-restricted hydrology (5)
- Lake Plain Sand Prairies (Oak Openings) (10)
- Relict Wet Prairies (10)
- Known occurrence state/federal threatened or endangered species (10)
- Significant migratory songbird/water fowl habitat or usage (10)
- Category 1 Wetland. See Question 1 Qualitative Rating (-10)

8	44
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- 1 Emergent
- Shrub
- 2 Forest
- Mudflats
- Open water
- Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- High (5)
- Moderately high(4)
- Moderate (3)
- Moderately low (2)
- Low (1)
- None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- Extensive >75% cover (-5)
- Moderate 25-75% cover (-3)
- Sparse 5-25% cover (-1)
- Nearly absent <5% cover (0)
- Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 2 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

44

Modified Category 2

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	2	2
	Metric 2. Buffers and surrounding land use	8	10
	Metric 3. Hydrology	13	23
	Metric 4. Habitat	13	36
	Metric 5. Special Wetland Communities	0	36
	Metric 6. Plant communities, interspersions, microtopography	8	44
	TOTAL SCORE	44	Category based on score breakpoints Modified Category 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
<p>Did you answer "Yes" to any of the following questions:</p> <p>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10</p>	<p>YES</p> <p>Wetland is categorized as a Category 3 wetland</p>	<input checked="" type="radio"/> NO	<p>Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM</p>
<p>Did you answer "Yes" to any of the following questions:</p> <p>Narrative Rating Nos. 1, 8b, 9b, 9e, 11</p>	<p>YES</p> <p>Wetland should be evaluated for possible Category 3 status</p>	<input checked="" type="radio"/> NO	<p>Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.</p>
<p>Did you answer "Yes" to</p> <p>Narrative Rating No. 5</p>	<p>YES</p> <p>Wetland is categorized as a Category 1 wetland</p>	<input checked="" type="radio"/> NO	<p>Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM</p>
<p>Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?</p>	<input checked="" type="radio"/> YES	<input type="radio"/> NO	<p>If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.</p>
<p>Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?</p>	<p>YES</p> <p>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria</p>	<input checked="" type="radio"/> NO	<p>Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).</p>
<p>Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?</p>	<p>YES</p> <p>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form</p>	<input checked="" type="radio"/> NO	<p>A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.</p>

Final Category
 Choose one Category 1 Category 2 Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

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Address: 5500 New Albany Road, Columbus, OH, 43054	
Phone Number: 614.775.4517	
e-mail address: blombard@emht.com	
Name of Wetland: Wetland D	
Vegetation Communit(ies): Forested	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Exhibit 1	
Lat/Long or UTM Coordinate	40.028703/ -82.94672
USGS Quad Name	Northeast Columbus
County	Franklin
Township	Columbus
Section and Subsection	T1N R17W
Hydrologic Unit Code	050600011602
Site Visit	3/5/2020
National Wetland Inventory Map	No
Ohio Wetland Inventory Map	No
Soil Survey	Bennington silt loam, 2 to 6 percent slopes
Delineation report/map	Exhibit 6

Name of Wetland: Wetland D	
Wetland Size (acres, hectares):	0.01
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Exhibit 6	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 28.5	Category: 1

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	<input checked="" type="radio"/> NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="radio"/> NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	<input checked="" type="radio"/> NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	<input checked="" type="radio"/> NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	<input checked="" type="radio"/> NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	<input checked="" type="radio"/> NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	<input checked="" type="radio"/> NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="radio"/> NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Kipp North - Wetland D	Rater(s): Bryan Lombard	Date: 3/5/2020
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

12	12
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - LOW. Old field (>10 years), shrub land, young second growth forest. (5)
 - MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
 - HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7	19
max 30 pts.	subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/Intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

6.5	25.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)

Disturbance to the area shown in 1980s aerial photos. Old trail road observed in field.

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

25.5
subtotal this page

Site: Kipp North - Wetland D	Rater(s): Bryan Lombard	Date: 3/5/2020
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25.5

subtotal first page

0	25.5
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max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- Bog (10)
- Fen (10)
- Old growth forest (10)
- Mature forested wetland (5)
- Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- Lake Erie coastal/tributary wetland-restricted hydrology (5)
- Lake Plain Sand Prairies (Oak Openings) (10)
- Relict Wet Prairies (10)
- Known occurrence state/federal threatened or endangered species (10)
- Significant migratory songbird/water fowl habitat or usage (10)
- Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3	28.5
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max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- Emergent
- Shrub
- 1 Forest
- Mudflats
- Open water
- Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- High (5)
- Moderately high(4)
- Moderate (3)
- Moderately low (2)
- Low (1)
- None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- Extensive >75% cover (-5)
- Moderate 25-75% cover (-3)
- Sparse 5-25% cover (-1)
- Nearly absent <5% cover (0)
- Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

28.5

Category 1

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input checked="" type="radio"/> NO	If yes, Category 1.
	Question 6. Bogs	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 7. Fens	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input checked="" type="radio"/> NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES <input checked="" type="radio"/> NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	YES <input checked="" type="radio"/> NO	If yes, Category 3	
Question 11. Relict Wet Prairies	YES <input checked="" type="radio"/> NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	0	0
	Metric 2. Buffers and surrounding land use	12	12
	Metric 3. Hydrology	7	19
	Metric 4. Habitat	6.5	25.5
	Metric 5. Special Wetland Communities	0	25.5
	Metric 6. Plant communities, interspersions, microtopography	3	28.5
	TOTAL SCORE	28.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
<p>Did you answer "Yes" to any of the following questions:</p> <p>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10</p>	<p>YES</p> <p>Wetland is categorized as a Category 3 wetland</p>	<p>NO</p> <p>Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM</p>
<p>Did you answer "Yes" to any of the following questions:</p> <p>Narrative Rating Nos. 1, 8b, 9b, 9e, 11</p>	<p>YES</p> <p>Wetland should be evaluated for possible Category 3 status</p>	<p>NO</p> <p>Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.</p>
<p>Did you answer "Yes" to</p> <p>Narrative Rating No. 5</p>	<p>YES</p> <p>Wetland is categorized as a Category 1 wetland</p>	<p>NO</p> <p>Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM</p>
<p>Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?</p>	<p>YES</p> <p>Wetland is assigned to the appropriate category based on the scoring range</p>	<p>NO</p> <p>If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.</p>
<p>Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?</p>	<p>YES</p> <p>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria</p>	<p>NO</p> <p>Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).</p>
<p>Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?</p>	<p>YES</p> <p>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form</p>	<p>NO</p> <p>Wetland is assigned to category as determined by the ORAM.</p> <p>A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.</p>

Final Category

Choose one	Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

Name: Bryan Lombard	
Date: 3/5/2020	
Affiliation: EMH&T	
Address: 5500 New Albany Road, Columbus, OH, 43054	
Phone Number: 614.775.4517	
e-mail address: blombard@emht.com	
Name of Wetland: Wetland E	
Vegetation Communit(ies): Forested, Emergent	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See Exhibit 1	
Lat/Long or UTM Coordinate	40.029647 / -82.945459
USGS Quad Name	Northeast Columbus
County	Franklin
Township	Columbus
Section and Subsection	T1N R17W
Hydrologic Unit Code	050600011602
Site Visit	3/5/2020
National Wetland Inventory Map	No
Ohio Wetland Inventory Map	No
Soil Survey	Bennington silt loam, 2 to 6 percent slopes
Delineation report/map	Exhibit 6

Name of Wetland: Wetland E	
Wetland Size (acres, hectares):	0.11
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Exhibit 6	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 44	Category: Modified 2

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the “scoring boundaries” of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the “jurisdictional boundaries.” For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland’s jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland.* In determining a wetland’s scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.		X
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.		X
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	<input checked="" type="radio"/> NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="radio"/> NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	<input checked="" type="radio"/> NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	<input checked="" type="radio"/> NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	<input checked="" type="radio"/> NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	<input checked="" type="radio"/> NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	<input checked="" type="radio"/> NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="radio"/> NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

End of Narrative Rating. Begin Quantitative Rating on next page.

Site: Kipp North - Wetland E	Rater(s): Bryan Lombard	Date: 3/5/2020
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
- >50 acres (>20.2ha) (6 pts)
 - 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - 10 to <25 acres (4 to <10.1ha) (4 pts)
 - 3 to <10 acres (1.2 to <4ha) (3 pts)
 - 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - <0.1 acres (0.04ha) (0 pts)

12	13
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- WIDE.** Buffers average 50m (164ft) or more around wetland perimeter (7)
 - MEDIUM.** Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - NARROW.** Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - VERY NARROW.** Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- VERY LOW.** 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - LOW.** Old field (>10 years), shrub land, young second growth forest. (5)
 - MODERATELY HIGH.** Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
 - HIGH.** Urban, industrial, open pasture, row cropping, mining, construction. (1)

12	25
max 30 pts.	subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply.
- High pH groundwater (5)
 - Other groundwater (3)
 - Precipitation (1)
 - Seasonal/Intermittent surface water (3)
 - Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- 100 year floodplain (1)
 - Between stream/lake and other human use (1)
 - Part of wetland/upland (e.g. forest), complex (1)
 - Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- >0.7 (27.6in) (3)
 - 0.4 to 0.7m (15.7 to 27.6in) (2)
 - <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- Semi- to permanently inundated/saturated (4)
 - Regularly inundated/saturated (3)
 - Seasonally inundated (2)
 - Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- None or none apparent (12)
 - Recovered (7)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input type="checkbox"/> other _____

12	37
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

- 4a. Substrate disturbance. Score one or double check and average.
- None or none apparent (4)
 - Recovered (3)
 - Recovering (2)
 - Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- Excellent (7)
 - Very good (6)
 - Good (5)
 - Moderately good (4)
 - Fair (3)
 - Poor to fair (2)
 - Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- None or none apparent (9)
 - Recovered (6)
 - Recovering (3)
 - Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

37
subtotal this page

Site: Kipp North - Wetland E	Rater(s): Bryan Lombard	Date: 3/5/2020
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37

subtotal first page

0	37
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- Bog (10)
- Fen (10)
- Old growth forest (10)
- Mature forested wetland (5)
- Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- Lake Erie coastal/tributary wetland-restricted hydrology (5)
- Lake Plain Sand Prairies (Oak Openings) (10)
- Relict Wet Prairies (10)
- Known occurrence state/federal threatened or endangered species (10)
- Significant migratory songbird/water fowl habitat or usage (10)
- Category 1 Wetland. See Question 1 Qualitative Rating (-10)

7	44
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- 1 Emergent
- Shrub
- 1 Forest
- Mudflats
- Open water
- Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- High (5)
- Moderately high(4)
- Moderate (3)
- Moderately low (2)
- Low (1)
- None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- Extensive >75% cover (-5)
- Moderate 25-75% cover (-3)
- Sparse 5-25% cover (-1)
- Nearly absent <5% cover (0)
- Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0 Vegetated hummocks/tussucks
- 2 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

44

Modified Category 2

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	1	1
	Metric 2. Buffers and surrounding land use	12	13
	Metric 3. Hydrology	12	25
	Metric 4. Habitat	12	37
	Metric 5. Special Wetland Communities	0	37
	Metric 6. Plant communities, interspersions, microtopography	7	44
	TOTAL SCORE	44	Category based on score breakpoints Modified Category 2

Complete Wetland Categorization Worksheet.

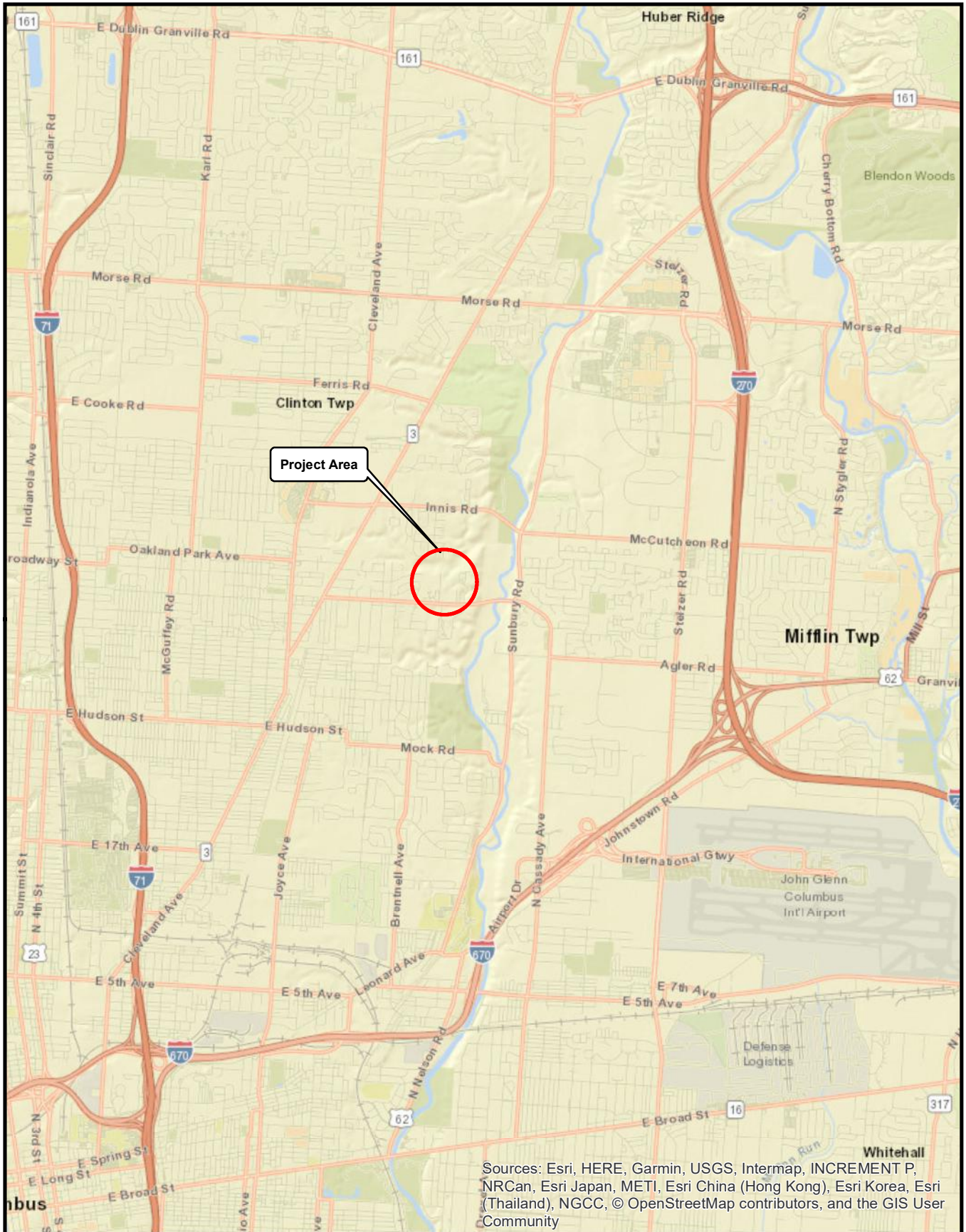
Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

	Final Category	
Choose one	Category 1	<input checked="" type="radio"/> Category 2
	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

EXHIBITS



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



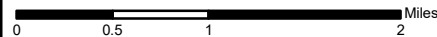
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 Toll Free: 888.775.3648

emht.com

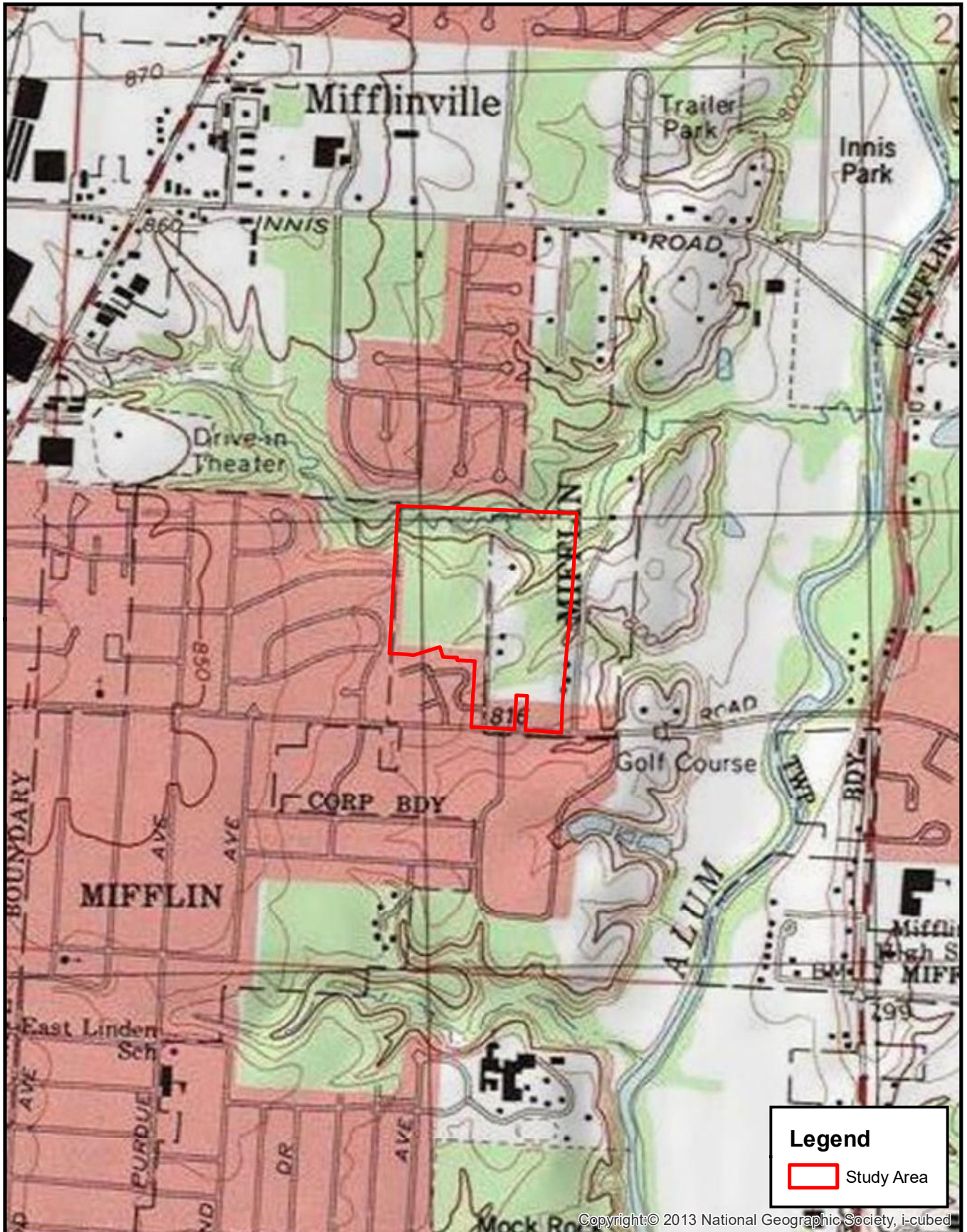
CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

**KIPP North
Location Map
Exhibit 1**

SCALE: 1" = 1 Mile



Path: \\cmhdata01\project01\20210139\GIS\Exhibit 2 - USGS Map.mxd



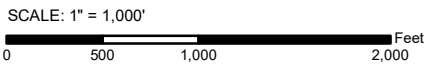
Copyright: © 2013 National Geographic Society, i-cubed



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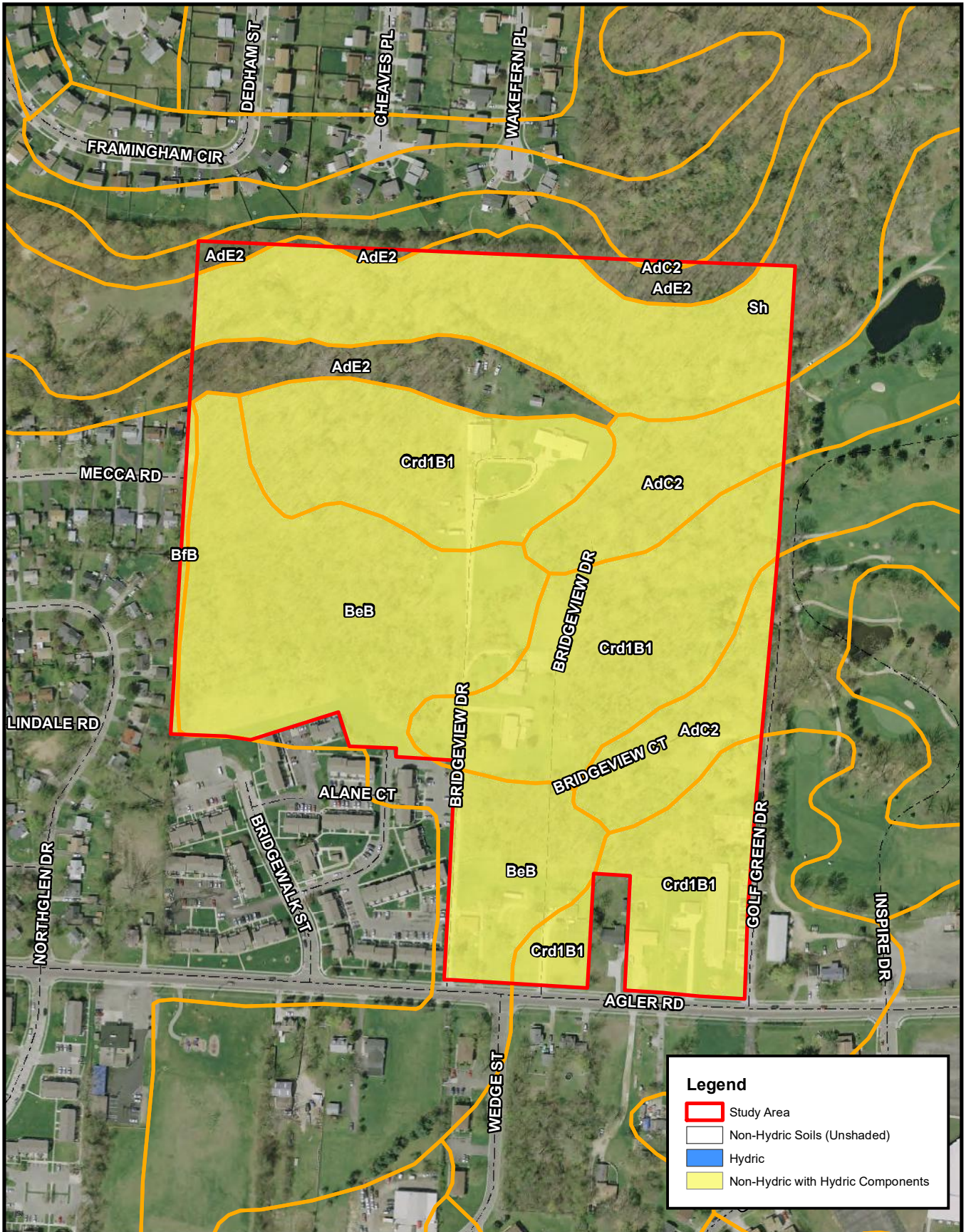
KIPP North
USGS Topographic Map
Exhibit 2



Source: USGS Northeast Columbus Quad Map (Pub. 1983)



Path: \\cmhdata01\project01\20210139\GIS\Exhibit 3 - Soils Map.mxd

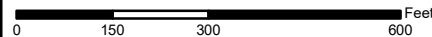


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CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

**KIPP North
Soil Survey Map
Exhibit 3**

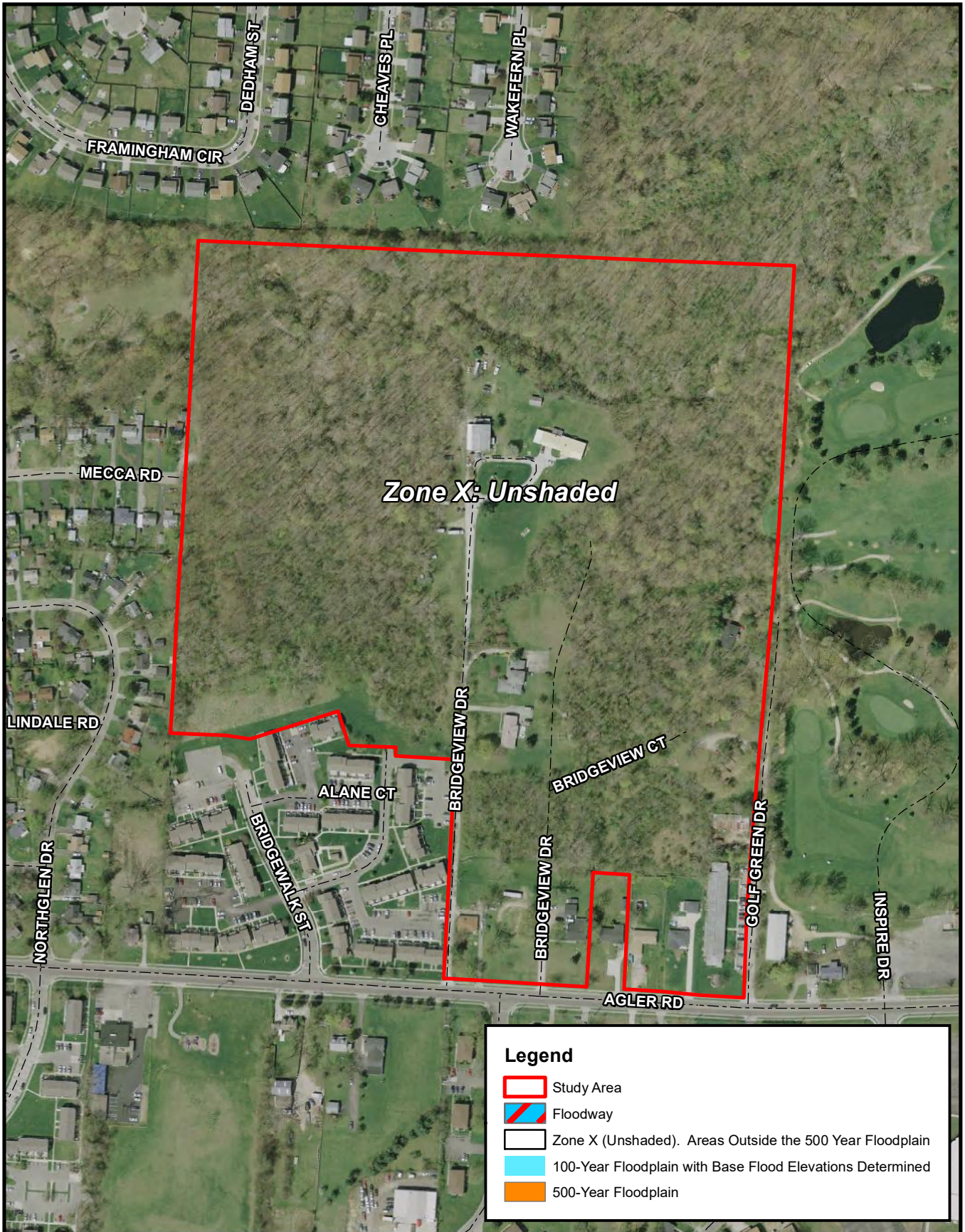
SCALE: 1" = 300'








Source: Soils: NRCS, 2019
Aerial: OSIP, 2013



Path: \\cmhdata01\project01\20210139\GIS\Exhibit 4 - FIRM Map.mxd



Legend

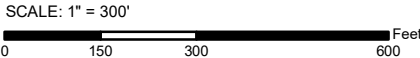
-  Study Area
-  Floodway
-  Zone X (Unshaded). Areas Outside the 500 Year Floodplain
-  100-Year Floodplain with Base Flood Elevations Determined
-  500-Year Floodplain



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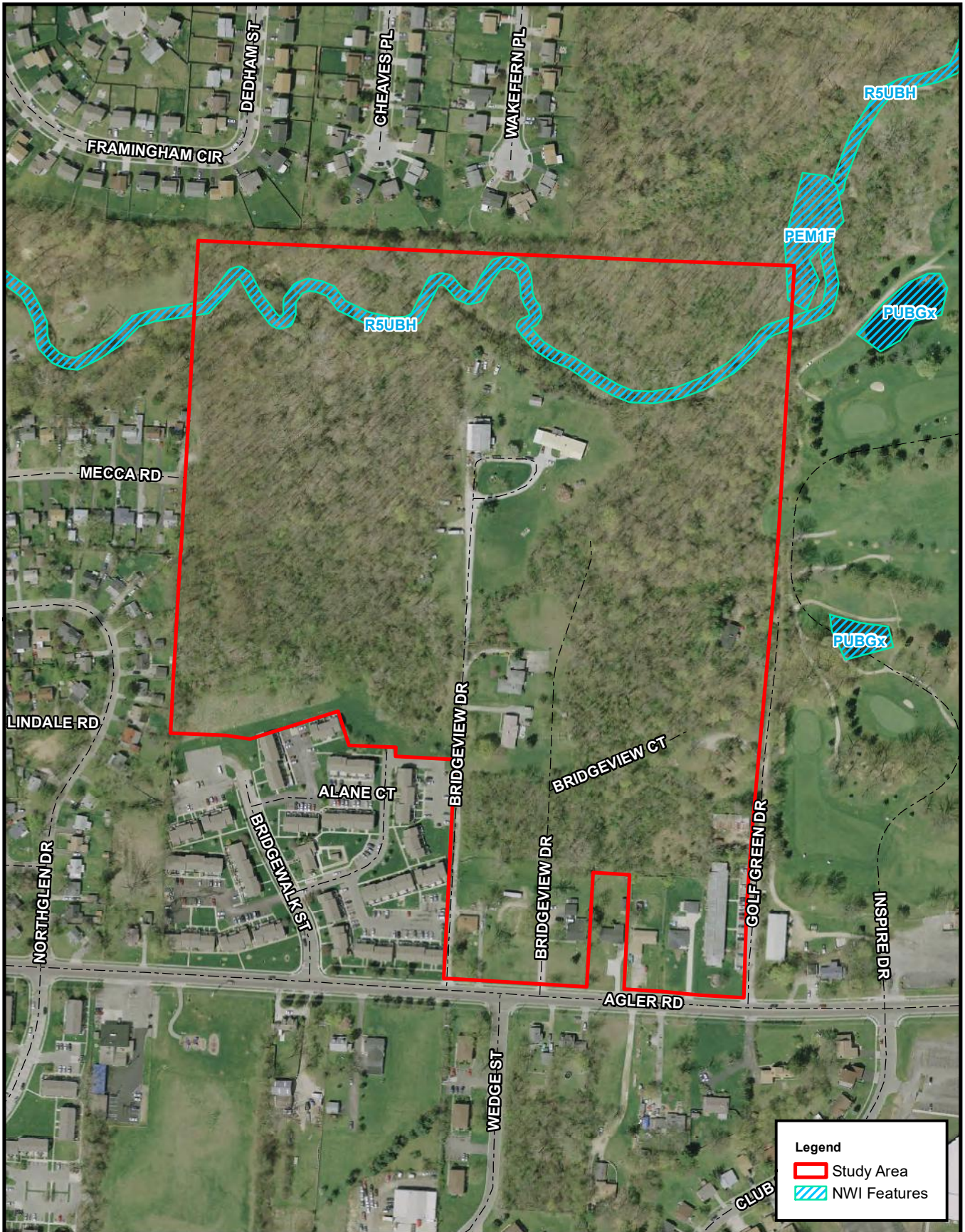
CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

**KIPP North
 Flood Insurance Rate Map
 Exhibit 4**



Source: 100 Year Floodplain - FEMA, 2018
 Aerial: OSIP, 2013

Path: \\cmhdata01\project01\20210139\GIS\Exhibit 5 - NWI Map.mxd



Legend

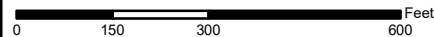
- Study Area
- NWI Features

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CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

**KIPP North
National Wetland Inventory
Exhibit 5**

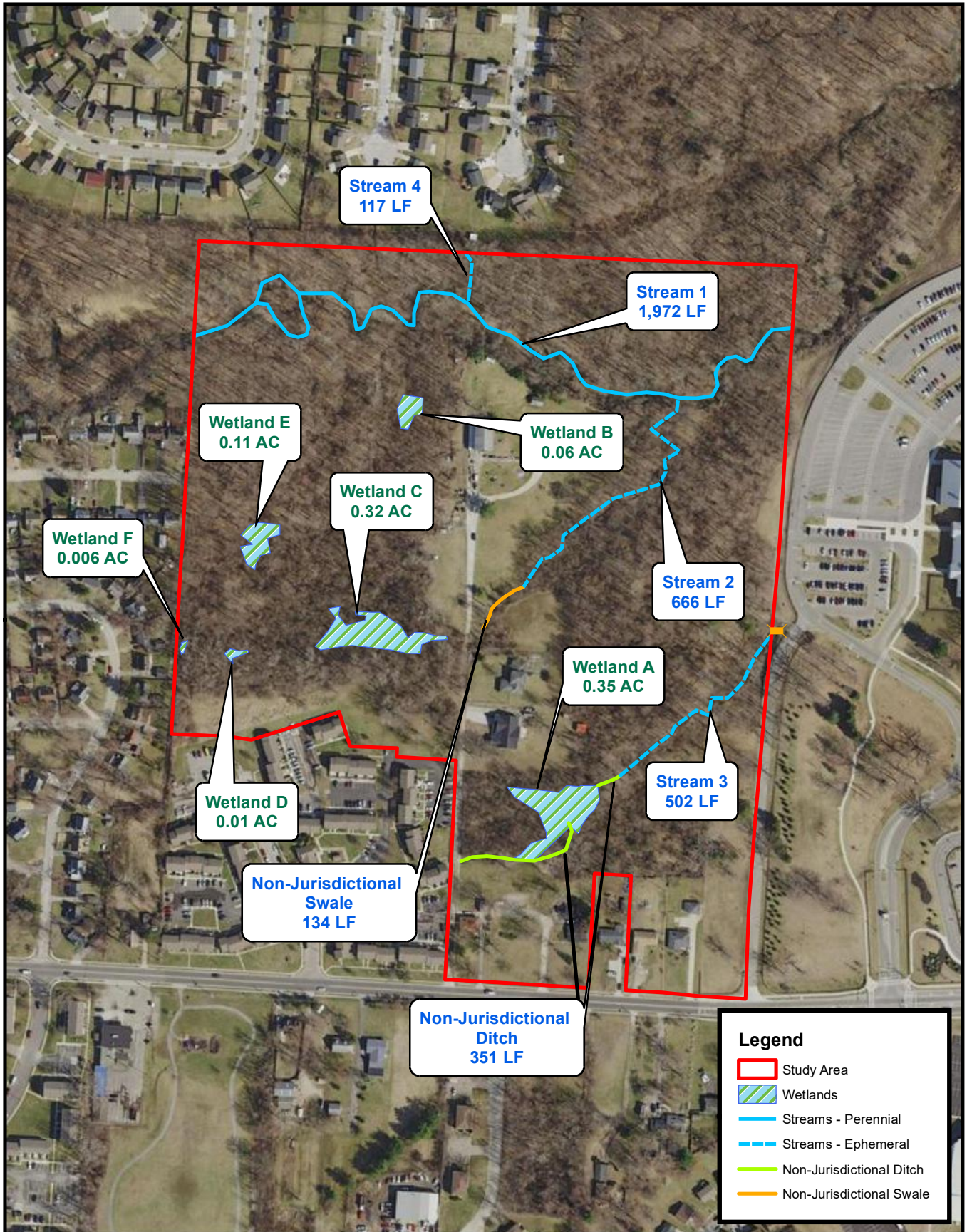
SCALE: 1" = 300'



Source: National Wetland Inventory (NWI) - FWS, 2018;
Aerial - OSIP, 2013



Path: \\cmhdata01\project01\20210139\GIS\Exhibit 6 - Delineation Map.mxd

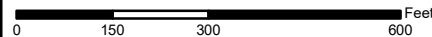


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CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

**KIPP North
Delineation Map
Exhibit 6**

SCALE: 1" = 300'



Source: Aerial - Franklin County, 2019

PHOTOGRAPHS



Photograph No. 1

View of Wetland A facing north (EMH&T, 3/05/20)



Photograph No. 1

View of Wetland A facing south (EMH&T, 3/05/20)



Photograph No. 3

View of Wetland A facing east (EMH&T, 3/05/20)



Photograph No. 4

View of Wetland A facing west (EMH&T, 3/05/20)



Photograph No. 5

View of Wetland B facing north (EMH&T, 3/05/20)



Photograph No. 6

View of Wetland B facing south (EMH&T, 3/05/20)



Photograph No. 7

View of Wetland B facing east (EMH&T, 3/05/20)



Photograph No. 8

View of Wetland B facing west (EMH&T, 3/05/20)



Photograph No. 9

View of Wetland C facing north (EMH&T, 3/05/20)



Photograph No. 10

View of Wetland C facing south (EMH&T, 3/05/20)



Photograph No. 11

View of Wetland C facing east (EMH&T, 3/05/20)



Photograph No. 12

View of Wetland C facing west (EMH&T, 3/05/20)



Photograph No. 13

View of Wetland D facing north (EMH&T, 3/05/20)



Photograph No. 14

View of Wetland D facing south (EMH&T, 3/05/20)



Photograph No. 15

View of Wetland D facing east (EMH&T, 3/05/20)



Photograph No. 16

View of Wetland D facing west (EMH&T, 3/05/20)



Photograph No. 17

View of Wetland E facing north (EMH&T, 3/05/20)



Photograph No. 18

View of Wetland E facing south (EMH&T, 3/05/20)



Photograph No. 19

View of Wetland E facing east (EMH&T, 3/05/20)



Photograph No. 20

View of Wetland E facing west (EMH&T, 3/05/20)



Photograph No. 21

View of Wetland F facing north (EMH&T, 3/05/20)



Photograph No. 22

View of Wetland F facing south (EMH&T, 3/05/20)



Photograph No. 23

View of Wetland F facing east (EMH&T, 3/05/20)



Photograph No. 24

View of Wetland F facing west (EMH&T, 3/05/20)



Photograph No. 25

View of Stream 1 facing downstream (EMH&T, 3/05/20)



Photograph No. 26

View of Stream 1 facing upstream (EMH&T, 3/05/20)



Photograph No. 27

View of Stream 1 substrate (EMH&T, 3/05/20)



Photograph No. 28

View of Stream 2 facing downstream (EMH&T, 3/03/21)



Photograph No. 29

View of Stream 2 facing upstream (EMH&T, 3/05/20)



Photograph No. 30

View of Stream 2 substrate (EMH&T, 3/03/21)



Photograph No. 31

View of Non-Jurisdictional Stormwater Ditch looking towards outlet pipe at Bridgeview Drive (EMH&T, 3/03/21)



Photograph No. 32

View of Non-Jurisdictional Stormwater Ditch looking into the woods (EMH&T, 3/05/20)



Photograph No. 33

View of Stream 3 facing downstream (EMH&T, 3/05/20)



Photograph No. 34

View of Stream 3 entering culvert (EMH&T, 3/05/20)



Photograph No. 35

View of Stream 3 facing upstream (beginning) (EMH&T, 3/05/20)



Photograph No. 36

View of Stream 3 substrate (EMH&T, 3/05/20)



Photograph No. 37

View of Stream 4 facing downstream (EMH&T, 3/05/20)



Photograph No. 38

View of Stream 4 substrate (EMH&T, 3/05/20)



Photograph No. 39

View of Stream 4 facing north (EMH&T, 3/05/20)



Photograph No. 40

View of Non-Jurisdictional Swale facing northeast (EMH&T, 3/03/21)



Photograph No. 41

View of Non-Jurisdictional Swale facing east (EMH&T, 3/03/21)



Photograph No. 42

View of Non-Jurisdictional Swale facing south (EMH&T, 3/03/21)

APPENDIX B:

USACE Approved Jurisdictional Determination



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HUNTINGTON DISTRICT, CORPS OF ENGINEERS
502 EIGHTH STREET
HUNTINGTON, WEST VIRGINIA 25701-2070

April 21, 2021

Regulatory Division
North Branch
LRH-2020-448-SCR

APPROVED JURISDICTIONAL DETERMINATION

KIPP Columbus Foundation
Victor J. Ferguson
Secretary
c/o
Vorys, Sater, Seymour and Pease LLP
52 East Gay Street
Columbus, Ohio 43215

Dear Mr. Ferguson:

I refer to the report titled *Kipp North Property Request for Approved Jurisdictional Determination Report*, dated March 11, 2021 and submitted on your behalf by EMH&T. You have requested an approved JD for the aquatic resources located on the approximate 40-acre site. The property is located north of Agler Road and on the west side of Golf Green Drive in the City of Columbus, Franklin County, Ohio (40.0293, -82.9434). Your JD request has been assigned the following file number: LRH-2020-448-SCR. Please reference this number on all future correspondence related to this JD request.

The United States Army Corps of Engineers' (Corps) authority to regulate waters of the United States is based on the definitions and limits of jurisdiction contained in 33 CFR 328, including the amendments to 33 FFR 328.3 (85 Federal Register 22250), and 33 CFR 329. Section 404 of the Clean Water Act (Section 404) requires a Department of the Army (DA) permit be obtained prior to discharging dredged and/or fill material into waters of the United States, including wetlands. Section 10 of the Rivers and Harbors Act of 1899 (Section 10) requires a DA permit be obtained for any work in, on, over or under a navigable water.

The Navigable Waters Protection Rule, which became effective on June 22, 2020, was followed in this verification of Section 404 jurisdiction for the features located within the AJD boundary. Based upon a review of the submitted report and additional information available to us, this office has determined the approved JD boundary contains 1,972 linear feet of one (1) jurisdictional perennial stream (Stream 1) 33 CFR 328.3(a)(2) water. Additionally, the approved JD boundary contains 1,285 linear feet of three (3) non-jurisdictional ephemeral streams (Streams 2-4) excluded per 33 CFR 328.3 (b)(3), 0.856 acre of six (6) non-jurisdictional wetlands (Wetlands A-F) excluded per 33 CFR 328.3 (b)(1), 351 linear feet of one (1) stormwater ditch (Stormwater Ditch 1) and 134 linear feet of one (1) swale (Swale 1) both

excluded per 328.3 (b)(5).

Stream 1 is subject to regulation under Section 404 and if your proposed project is unable to avoid the discharge of dredged and/or fill material into Stream 1, you must obtain an authorization from this office. Therefore, Streams 2-4, Wetlands (A-F), Stormwater Ditch 1, and Swale 1 are not considered jurisdictional waters of the United States. However, you should contact the Ohio Environmental Protection Agency, Division of Surface Water, at (614) 664-2001 to determine state permit requirements. The aforementioned aquatic resources are depicted on the enclosed map titled "Delineation Map Exhibit 6" and listed in the enclosed AJD Table.

This jurisdictional verification is valid for a period of five (5) years from the date of this letter unless new information warrants revision of the delineation prior to the expiration date. This letter contains an approved JD for the subject site within the approved JD boundary. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the Great Lakes and Ohio River Division Office at the following address:

Appeal Review Officer
United States Army Corps of Engineers
Great Lakes and Ohio River Division
550 Main Street, Room 10524
Cincinnati, Ohio 45202-3222
Phone: (513) 684-2699
Fax: (513) 684-2460

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by. It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

This determination has been conducted to identify the limits of the Corps' Section 404 jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are United States Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

A copy of this letter will be provided to the Ohio Environmental Protection Agency at Lazarus Government Building, Post Office Box 1049 Columbus, Ohio 43216-3669 and your agent, Mr. Bryan Lombard with EMH&T. If you have any questions concerning the above,

please contact Cecil Cox of the North Branch at 304-399-5274, by mail at the above address, or by email at cecil.m.cox@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "Lauric A. Moore".

Lauric A. Moore
Regulatory Project Manager
North Branch

Encls

cc:

Bryan Lombard (via email)



**U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE**

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 4/21/2021
 ORM Number: LRH-2020-448-SCR
 Associated JDs: N/A
 Review Area Location¹: State/Territory: Ohio City: Columbus County/Parish/Borough: Franklin
 Center Coordinates of Review Area: Latitude 40.0293 Longitude -82.9434

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: N/A or describe rationale.
- There are “navigable waters of the United States” within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- There are “waters of the United States” within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)²

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A.	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters): ³				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
Stream 1	1972	linear feet	(a)(2) Perennial tributary contributes surface water flow directly or indirectly to an (a)(1) water in a typical year.	Stream 1 is a perennial tributary to Alum Creek, an (a)(2) water an direct tributary to the Scioto River, an (a)(1) TNW, in a typical year (reference Section III B of this AJD form) at a location outside the area of interest (AOI), (reference Section III B of this AJD form).

¹ Map(s)/figure(s) are attached to the AJD provided to the requestor.

² If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.

³ A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.



**U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE**

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)): ⁴				
Exclusion Name	Exclusion Size		Exclusion ⁵	Rationale for Exclusion Determination
Wetland A	0.35	acre(s)	(b)(1) Non-adjacent wetland.	Wetland A does not meet the definition of an adjacent wetland (33 CFR 328.3(c)(1)(i)-(iv)), is not considered a water of the United States per 33 CFR 328.3(b)(1), and is not subject to regulation under Section 404. Reference Section III B of this AJD form for typical year assessments.
Wetland B	0.06	acre(s)	(b)(1) Non-adjacent wetland.	Wetland B does not meet the definition of an adjacent wetland (33 CFR 328.3(c)(1)(i)-(iv)), is not considered a water of the United States per 33 CFR 328.3(b)(1), and is not subject to regulation under Section 404. Reference Section III B of this AJD form for typical year assessments.
Wetland C	0.32	acre(s)	(b)(1) Non-adjacent wetland.	Wetland C does not meet the definition of an adjacent wetland (33 CFR 328.3(c)(1)(i)-(iv)), is not considered a water of the United States per 33 CFR 328.3(b)(1), and is not subject to regulation under Section 404. Reference Section III B of this AJD form for typical year assessments.
Wetland D	0.01	acre(s)	(b)(1) Non-adjacent wetland.	Wetland D does not meet the definition of an adjacent wetland (33 CFR 328.3(c)(1)(i)-(iv)), is not considered a water of the United States per 33 CFR 328.3(b)(1), and is not subject to regulation under Section 404. Reference Section III B of this AJD form for typical year assessments.
Wetland E	0.11	acre(s)	(b)(1) Non-adjacent wetland.	Wetland E does not meet the definition of an adjacent wetland (33 CFR 328.3(c)(1)(i)-(iv)), is not considered a water of the United States per 33 CFR 328.3(b)(1), and is not subject to regulation under Section 404. Reference

⁴ Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

⁵ Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.



**U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE**

				Section III B of this AJD form for typical year assessments.
Wetland F	0.006	acre(s)	(b)(1) Non-adjacent wetland.	Wetland F does not meet the definition of an adjacent wetland (33 CFR 328.3(c)(1)(i)-(iv)), is not considered a water of the United States per 33 CFR 328.3(b)(1), and is not subject to regulation under Section 404. Reference Section III B of this AJD form for typical year assessments.
Stream 2	666	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Stream 2 is an ephemeral stream and meets the definition of "ephemeral" in paragraph (c)(3). Reference Section III B of this AJD form for typical year assessments.
Stream 3	502	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Stream 3 is an ephemeral stream and meets the definition of "ephemeral" in paragraph (c)(3). Reference Section III B of this AJD form for typical year assessments.
Stream 4	117	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Stream 4 is an ephemeral stream and meets the definition of "ephemeral" in paragraph (c)(3). Reference Section III B of this AJD form for typical year assessments. .
Stormwater Ditch	351	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Drainage way 1 is an ephemeral feature and meets the definition of "ephemeral" in paragraph (c)(3). Reference Section III B of this AJD form for typical year assessments.
Swale 1	134	linear feet	(b)(3) Ephemeral feature, including an ephemeral stream, swale, gully, rill, or pool.	Drainage way 1 is an ephemeral feature and meets the definition of "ephemeral" in paragraph (c)(3). Reference Section III B of this AJD form for typical year assessments.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

- Information submitted by, or on behalf of, the applicant/consultant: [Kipp North Property Request for Approved Jurisdictional Determination Report, dated April 10, 2020 and addendum dated 11 March 2021.](#)
This information [Select.](#) sufficient for purposes of this AJD.
Rationale: [N/A](#)
- Data sheets prepared by the Corps: [Title\(s\) and/or date\(s\).](#)
- Photographs: [Aerial and Other: Within referenced JD report.](#)
- Corps site visit(s) conducted on: [Date\(s\).](#)
- Previous Jurisdictional Determinations (AJDs or PJDs): [N/A](#)
- Antecedent Precipitation Tool: [provide detailed discussion in Section III.B.](#)



**U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE**

- USDA NRCS Soil Survey: [Franklin County, Ohio](#)
- USFWS NWI maps: [Title\(s\) and/or date\(s\)](#).
- USGS topographic maps: [1:24K Northeast Columbus, OH Quad](#).

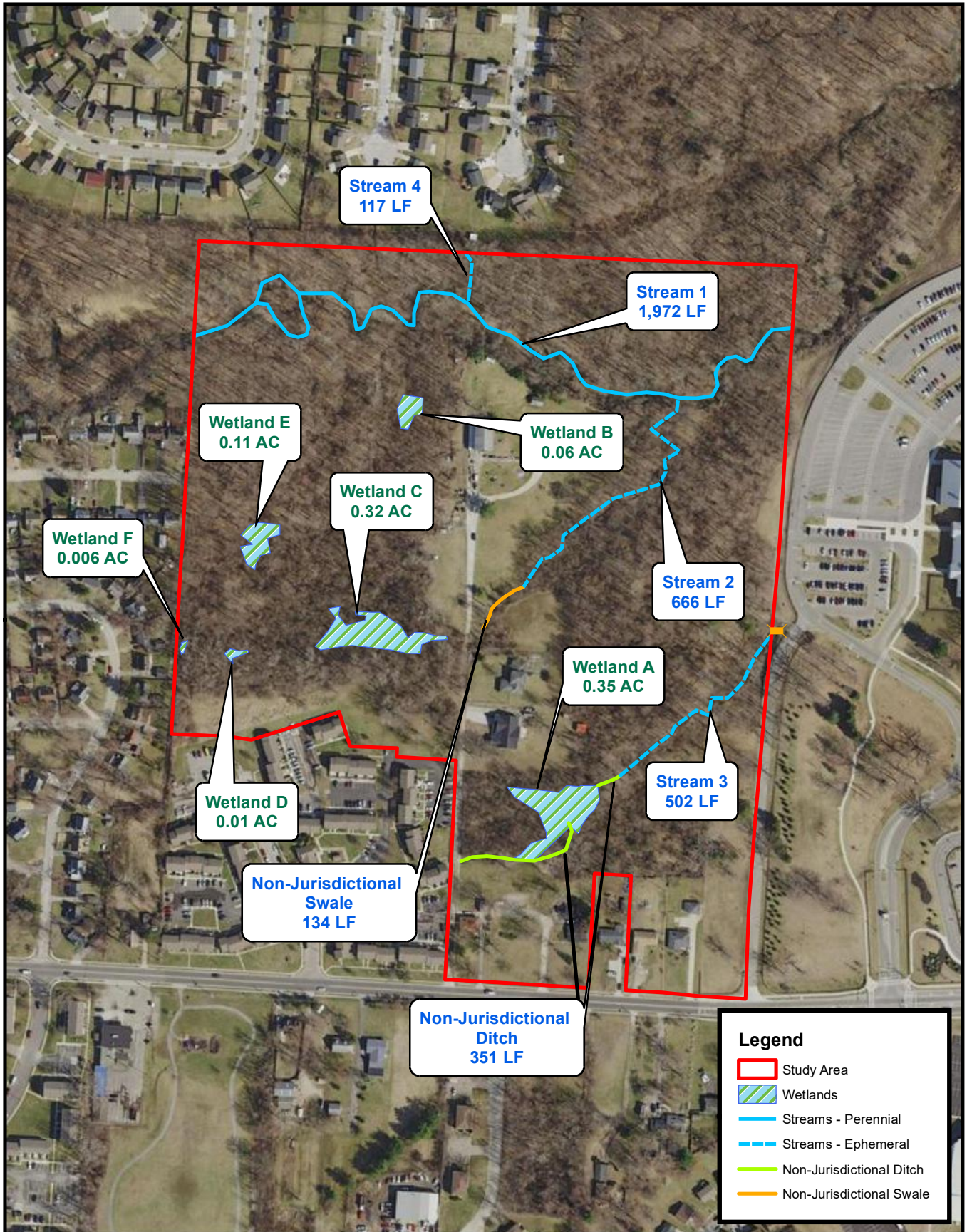
Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other Sources	Appendix B (USACE Wetland Data Forms) and Appendix C (ORAM Forms) of referenced report.

B. Typical year assessment(s): A typical year occurs over a rolling thirty year period and includes the analysis of precipitation and other climatic variables to establish a normal period range (seasonally or annually) for a specific geographic region where the aquatic resource occurs. One point-in-time data source, 5 March 2020 and 2 March 2021, with a corresponding APT report, were included in the evaluation for the excluded features onsite. The antecedent precipitation tool was utilized to determine typical year for point-in-time data sources. Wetland adjacency was assessed on 5 March 2020 and 2 March 2021. Based on the antecedent precipitation tool, 5 March 2020 is included during the WebWIMP wet season and has a Palmer Drought Severity Index of (2.66) moderate wetness while 2 March 2021 is in the wet season has has a PDSI of (1.13) mild drought. The 30-day rolling total for precipitation was higher than the 30-year normal range on 5 March 2020 and . Site conditions on 5 March 2020 were wetter than normal and 2 March 2021 conditions were within normal of that in a typical year condition. Within normal sight conditions the wetlands had no adjacency and did not abut the (a)(2) stream located onsite. Additionally, the ephemeral features showed slight flows due to snow melt and recent rains.

C. Additional comments to support AJD: [The property is located outside of the FEMA 100 year floodplain.](#)

Path: \\cmhdata01\project01\20210139\GIS\Exhibit 6 - Delineation Map.mxd

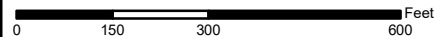


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Phone: 614.775.4500 Toll Free: 888.775.3648
emht.com

CITY OF COLUMBUS, FRANKLIN COUNTY, OHIO

**KIPP North
Delineation Map
Exhibit 6**

SCALE: 1" = 300'



Source: Aerial - Franklin County, 2019

APPENDIX C:
QHEI and HHEI Dataforms

Stream & Location: Stream 1 RM: Date: 3 / 5 / 06
Aaron Acus-Souders Scorers Full Name & Affiliation: EMH&T
River Code: STORET #: Lat./ Long.: 40 03088 / 82 94528 Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present. Check ONE (Or 2 & average). BEST TYPES, OTHER TYPES, POOL RIFFLE, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, HARDPAN, DETRITUS, MUCK, SILT, ARTIFICIAL, LIMESTONE, TILLS, WETLANDS, SANDSTONE, RIP/RAP, LACUSTURINE, SHALE, COAL FINES, HEAVY, MODERATE, NORMAL, EXTENSIVE, FREE, MODERATE, NORMAL, NONE.

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts. AMOUNT. Includes checkboxes for UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS, EXTENSIVE >75%, MODERATE 25-75%, SPARSE 5-<25%, NEARLY ABSENT <5%.

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average). SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY. Includes checkboxes for HIGH, MODERATE, LOW, NONE, EXCELLENT, GOOD, FAIR, POOR, NONE, RECOVERED, RECOVERING, RECENT OR NO RECOVERY, HIGH, MODERATE, LOW.

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average). River right looking downstream. EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY. Includes checkboxes for NONE/LITTLE, MODERATE, HEAVY/SEVERE, WIDE > 50m, MODERATE 10-50m, NARROW 5-10m, VERY NARROW < 5m, NONE, FOREST, SWAMP, SHRUB OR OLD FIELD, RESIDENTIAL, PARK, NEW FIELD, FENCED PASTURE, OPEN PASTURE, ROWCROP, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH, CHANNEL WIDTH, CURRENT VELOCITY. Includes checkboxes for > 1m, 0.7-<1m, 0.4-<0.7m, 0.2-<0.4m, < 0.2m, POOL WIDTH > RIFFLE WIDTH, POOL WIDTH = RIFFLE WIDTH, POOL WIDTH < RIFFLE WIDTH, TORRENTIAL, VERY FAST, FAST, MODERATE, SLOW, INTERSTITIAL, INTERMITTENT, EDDIES.

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average). NO RIFFLE [metric=0]. RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS. Includes checkboxes for BEST AREAS > 10cm, 5-10cm, < 5cm, MAXIMUM > 50cm, < 50cm, STABLE, MOD. STABLE, UNSTABLE, NONE, LOW, MODERATE, EXTENSIVE.

6] GRADIENT (58.4 ft/mi) DRAINAGE AREA (0.6 mi^2). Includes checkboxes for VERY LOW - LOW, MODERATE, HIGH - VERY HIGH. %POOL: 20, %GLIDE: 30, %RUN: 25, %RIFFLE: 25. Gradient Maximum 10.

AJ SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

- METHOD**
- BOAT
 - WADE
 - L. LINE
 - OTHER
- DISTANCE**
- 0.5 Km
 - 0.2 Km
 - 0.15 Km
 - 0.12 Km
 - OTHER

- STAGE**
- 1st--sample pass-- 2nd
- HIGH
 - UP
 - NORMAL
 - LOW
 - DRY

- CLARITY**
- 1st --sample pass-- 2nd
- < 20 cm
 - 20-<40 cm
 - 40-70 cm
 - > 70 cm/ CTB
 - SECCHI DEPTH

- CANOPY**
- 1st _____ cm
- 2nd _____ cm
- > 85%- OPEN
 - 55%-<85%
 - 30%-<55%
 - 10%-<30%
 - <10%- CLOSED

- BJ AESTHETICS**
- NUISANCE ALGAE
 - INVASIVE MACROPHYTES
 - EXCESS TURBIDITY
 - DISCOLORATION
 - FOAM / SCUM
 - OIL SHEEN
 - TRASH / LITTER
 - NUISANCE ODOR
 - SLUDGE DEPOSITS
 - CSOs/SSOs/OUTFALLS

- DJ MAINTENANCE**
- PUBLIC / PRIVATE / BOTH / NA
 - ACTIVE / HISTORIC / BOTH / NA
 - YOUNG-SUCCESSION-OLD
 - SPRAY / SNAG / REMOVED
 - MODIFIED / DIPPED OUT / NA
 - LEVEED / ONE SIDED
 - RELOCATED / CUTOFFS
 - MOVING-BEDLOAD-STABLE
 - ARMoured / SLUMPS
 - ISLANDS / SCoured
 - IMPOUNDED / DESICCATED
 - FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

- EJ ISSUES**
- WWTP / CSO / NPDES / INDUSTRY
 - HARDENED / URBAN / DIRT&GRIME
 - CONTAMINATED / LANDFILL
 - BMPs-CONSTRUCTION-SEDIMENT
 - LOGGING / IRRIGATION / COOLING
 - BANK / EROSION / SURFACE
 - FALSE BANK / MANURE / LAGOON
 - WASH H₂O / TILE / H₂O TABLE
 - ACID / MINE / QUARRY / FLOW
 - NATURAL / WETLAND / STAGNANT
 - PARK / GOLF / LAWN / HOME
 - ATMOSPHERE / DATA PAUCITY

- FJ MEASUREMENTS**
- \bar{x} width
 - \bar{x} depth
 - max. depth
 - \bar{x} bankfull width
 - bankfull \bar{x} depth
 - W/D ratio
 - bankfull max. depth
 - floodprone x^2 width
 - entrench. ratio
- Legacy Tree:

CJ RECREATION AREA DEPTH
 POOL: >100ft² >3ft

Stream Drawing:



Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3)

33

SITE NAME/LOCATION Stream 2
 SITE NUMBER _____ RIVER BASIN _____ RIVER CODE _____ DRAINAGE AREA (mi²) N/A
 LENGTH OF STREAM REACH (ft) 200 LAT 40.029239 LONG -82.943171 RIVER MILE N/A
 DATE 3/5/2020 SCORER AJA-S COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWHH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY

<p>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">TYPE</th> <th style="width: 35%;">PERCENT</th> <th style="width: 15%;">TYPE</th> <th style="width: 35%;">PERCENT</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> BLDR SLABS [16 pts]</td> <td>_____</td> <td><input checked="" type="checkbox"/> SILT [3 pt]</td> <td>25</td> </tr> <tr> <td><input type="checkbox"/> BOULDER (>256 mm) [16 pts]</td> <td>_____</td> <td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td> <td>10</td> </tr> <tr> <td><input type="checkbox"/> BEDROCK [16 pts]</td> <td>_____</td> <td><input type="checkbox"/> FINE DETRITUS [3 pts]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> COBBLE (65-256 mm) [12 pts]</td> <td>_____</td> <td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td> <td>10</td> <td><input type="checkbox"/> MUCK [0 pts]</td> <td>_____</td> </tr> <tr> <td><input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]</td> <td>55</td> <td><input type="checkbox"/> ARTIFICIAL [3 pts]</td> <td>_____</td> </tr> </tbody> </table> <p>Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>0</u> (A) <u>9</u> (B) <u>4</u></p> <p>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: <u>9</u> TOTAL NUMBER OF SUBSTRATE TYPES: <u>4</u></p>	TYPE	PERCENT	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input checked="" type="checkbox"/> SILT [3 pt]	25	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	10	<input type="checkbox"/> BEDROCK [16 pts]	_____	<input type="checkbox"/> FINE DETRITUS [3 pts]	_____	<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	_____	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	_____	<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	10	<input type="checkbox"/> MUCK [0 pts]	_____	<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	55	<input type="checkbox"/> ARTIFICIAL [3 pts]	_____	<p>HHEI Metric Points</p> <p>Substrate Max = 40</p> <div style="border: 2px solid gray; padding: 10px; display: inline-block; font-size: 24px; font-weight: bold;">13</div> <p>A + B</p>
TYPE	PERCENT	TYPE	PERCENT																										
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<p>3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):</p> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td><input type="checkbox"/> > 4.0 meters (> 13') [30 pts]</td> <td><input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]</td> </tr> <tr> <td><input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]</td> <td><input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]</td> </tr> <tr> <td><input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]</td> <td></td> </tr> </tbody> </table> <p>COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) <u>1.2</u></p>	<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]	<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		<p>Bankfull Width</p> <p>Max=30</p> <div style="border: 2px solid gray; padding: 10px; display: inline-block; font-size: 24px; font-weight: bold;">15</div>																						
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This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (interstitial)	<input type="checkbox"/> Dry channel, no water (ephemeral)

COMMENTS after snow melt

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input checked="" type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? Yes No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

- WWH Name: _____ Distance from Evaluated Stream _____
 CWH Name: _____ Distance from Evaluated Stream _____
 EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Northeast Columbus NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____
County: Franklin Township/City: Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 3/4/2020 Quantity: 0.03
Photo-documentation Notes: _____
Elevated Turbidity?(Y/N): N Canopy (% open): 20
Were samples collected for water chemistry?(Y/N): N Lab Sample # or ID (attach results): _____
Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____
Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____
Salamanders Observed? (Y/N) N Species observed (if known): _____
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____
Comments Regarding Biology: none observed

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3)

18

SITE NAME/LOCATION Stream 3
 SITE NUMBER _____ RIVER BASIN _____ RIVER CODE _____ DRAINAGE AREA (mi²) N/A
 LENGTH OF STREAM REACH (ft) 200 LAT 40.027596 LONG -82.943298 RIVER MILE N/A
 DATE 3/5/2020 SCORER Bryan Lombard COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWHH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY

<p>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B</p> <table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]</td> <td>_____</td> <td><input checked="" type="checkbox"/> <input type="checkbox"/> SILT [3 pt]</td> <td>80</td> </tr> <tr> <td><input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]</td> <td>_____</td> <td><input type="checkbox"/> <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td> <td>20</td> </tr> <tr> <td><input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pts]</td> <td>_____</td> <td><input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]</td> <td>_____</td> <td><input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td> <td>_____</td> <td><input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]</td> <td>_____</td> <td><input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]</td> <td>_____</td> </tr> </tbody> </table> <p>Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>0</u> (A) 6 (B) 2</p> <p>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES: 2</p>		TYPE	PERCENT	TYPE	PERCENT	<input type="checkbox"/> <input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input checked="" type="checkbox"/> <input type="checkbox"/> SILT [3 pt]	80	<input type="checkbox"/> <input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	20	<input type="checkbox"/> <input type="checkbox"/> BEDROCK [16 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> FINE DETRITUS [3 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> CLAY or HARDPAN [0 pt]	_____	<input type="checkbox"/> <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> MUCK [0 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> SAND (<2 mm) [6 pts]	_____	<input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [3 pts]	_____	<p>HHEI Metric Points Substrate Max = 40</p> <p>8</p> <p>A + B</p>
TYPE	PERCENT	TYPE	PERCENT																											
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This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (interstitial)	<input type="checkbox"/> Dry channel, no water (ephemeral)

COMMENTS _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

<input type="checkbox"/> None	<input checked="" type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? Yes No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

- WWH Name: _____ Distance from Evaluated Stream _____
 CWH Name: _____ Distance from Evaluated Stream _____
 EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Northeast Columbus NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____
County: Franklin Township/City: Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 3/4/2020 Quantity: 0.03
Photo-documentation Notes: _____
Elevated Turbidity? (Y/N): N Canopy (% open): 35
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____
Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____
Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: Old drain tile fed by storm water pipe, begins as undefined drainage way.

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____
Salamanders Observed? (Y/N) N Species observed (if known): _____
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____
Comments Regarding Biology: none observed

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





Primary Headwater Habitat Field Evaluation Form

HHEI Score (sum of metrics 1+2+3)

56

SITE NAME/LOCATION Stream Mitigation

SITE NUMBER _____ RIVER BASIN _____ RIVER CODE _____ DRAINAGE AREA (mi²) N/A

LENGTH OF STREAM REACH (ft) 200 LAT _____ LONG _____ RIVER MILE N/A

DATE _____ SCORER _____ COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWHH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY

<p>1. SUBSTRATE (Estimate percent of every type present). Check ONLY two predominant substrate TYPE boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B</p> <table border="1"> <thead> <tr> <th>TYPE</th> <th>PERCENT</th> <th>TYPE</th> <th>PERCENT</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> BLDR SLABS [16 pts]</td> <td>_____</td> <td><input checked="" type="checkbox"/> SILT [3 pt]</td> <td><u>45</u></td> </tr> <tr> <td><input type="checkbox"/> BOULDER (>256 mm) [16 pts]</td> <td>_____</td> <td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> BEDROCK [16 pts]</td> <td>_____</td> <td><input type="checkbox"/> FINE DETRITUS [3 pts]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> COBBLE (65-256 mm) [12 pts]</td> <td><u>10</u></td> <td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td> <td>_____</td> </tr> <tr> <td><input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td> <td><u>30</u></td> <td><input type="checkbox"/> MUCK [0 pts]</td> <td>_____</td> </tr> <tr> <td><input type="checkbox"/> SAND (<2 mm) [6 pts]</td> <td><u>15</u></td> <td><input type="checkbox"/> ARTIFICIAL [3 pts]</td> <td>_____</td> </tr> </tbody> </table> <p>Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>10</u> (A) 12 (B) 4</p> <p>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4</p>		TYPE	PERCENT	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input checked="" type="checkbox"/> SILT [3 pt]	<u>45</u>	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	_____	<input type="checkbox"/> BEDROCK [16 pts]	_____	<input type="checkbox"/> FINE DETRITUS [3 pts]	_____	<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>10</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	_____	<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>30</u>	<input type="checkbox"/> MUCK [0 pts]	_____	<input type="checkbox"/> SAND (<2 mm) [6 pts]	<u>15</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]	_____	<p>HHEI Metric Points</p> <p>Substrate Max = 40</p> <p>16</p> <p>A + B</p>
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USGS Quadrangle Name: Northeast Columbus NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____
County: Franklin Township/City: Columbus

MISCELLANEOUS

Base Flow Conditions? (Y/N): _____ Date of last precipitation: _____ Quantity: _____
Photo-documentation Notes: _____
Elevated Turbidity?(Y/N): _____ Canopy (% open): _____
Were samples collected for water chemistry?(Y/N): _____ Lab Sample # or ID (attach results): _____
Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____
Is the sampling reach representative of the stream (Y/N) _____ If not, explain: _____

Additional comments/description of pollution impacts: _____

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(Record all observations below)

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