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October 10, 2023

Highlands Residential LLC
1777 Peachtree St Ste 200
Atlanta, Georgia 30309

Attn: Mr. Dave Loeffel
E: dloeffel@highlandsresidential.com

RE: Waters of the United States Delineation
Charles Hardy Parkway Site
South of Charles Hardy Parkway
Dallas, Paulding County, GA
Terracon Project No. 49237685

Dear Mr. Loeffel:

Terracon is pleased to submit the enclosed Waters of the U.S. (WOTUS) Delineation report in accordance with our proposal (Terracon Proposal No. PGC237033) dated July 9, 2023. The findings of Terracon's updated delineation are summarized below:

- Total Site Size – 23.2 acres
- Jurisdictional Wetlands – 0.27 acres
- Jurisdictional Tributaries – 998 LF
- Non-Jurisdictional Ponds – 0.29 acres
- Uplands – 22.9 acres

Considerations

Terracon understands you may intend to obtain a Jurisdictional Determination from the United States Army Corps of Engineers (USACE). There are two types of Jurisdictional Determinations that can be obtained from USACE; (1) Preliminary Jurisdictional Determination and (2) Approved Jurisdictional Determination.

- **Preliminary Jurisdictional Determination (PJD) Request:** A PJD is the most common type of jurisdictional determination provided by USACE. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis

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of a PJD will treat all waters and wetlands that would be affected in any way by the permitted activity as if they are jurisdictional WOTUS. In other words, there is a presumption of jurisdiction for all aquatic resources on a site. In most cases, PJDs are sufficient to initiate wetlands/WOTUS impact permitting if future phases of the project would impact aquatic resources. Other state and federal permitting agencies that rely on USACE to verify wetland/WOTUS boundaries also typically accept PJDs. The advantage of PJDs is less regulatory scrutiny and more expedited response from USACE. It should be noted that PJDs may not satisfy all local and/or state permitting authority requirements and, although infrequent, the USACE may require AJDs on a case-by-case basis.

- **Approved Jurisdictional Determination (AJD) Request:** An AJD is needed if there are non-jurisdictional (isolated) aquatic resources on a site. An AJD may also be required if there are no aquatic resources on the site and the entire site is comprised of uplands. The level of effort to obtain an AJD requires additional documentation and regulatory agency scrutiny is typically greater. Additionally, the USACE will seek concurrence from the United States Environmental Protection Agency (EPA) for AJDs.

By definition, a PJD can only be used to determine that wetlands or other water bodies that exist on a particular site “may be” jurisdictional WOTUS. A PJD by definition cannot be used to determine either that there are no wetlands or other water bodies on a site at all (i.e., that there are no aquatic resources on the site and the entire site is comprised of uplands), or that there are no jurisdictional wetlands or other water bodies on a site, or that only a portion of the wetlands or waterbodies on a site are jurisdictional. A definitive, official determination that there are, or that there are not, jurisdictional WOTUS on a site can only be made by an AJD¹.

Please note that either a PJD or AJD can be used for potential USACE Clean Water Act permitting efforts. The distinction is that PJD carries a presumption of jurisdiction; therefore, all aquatic resources on a site would be jurisdictional and subject to the Clean Water Act. Additionally, although both PJDs and AJDs are acceptable for potential permitting, only the AJD option can be appealed. Following the Field Delineation, Terracon will provide site specific consultation regarding the applicability of requesting a PJD or AJD and the level of effort and additional cost required to obtain an AJD as applicable.

¹ USACE Regulatory Guidance Letter No. 16-01, dated October 2016

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The USACE Savannah, Georgia District also offers an Aquatic Resource Delineation Review (ARDR) in addition to the AJD and PJD options. The ARDR may be utilized for jurisdictional features on a site and provides USACE agreement with a consultant's delineation results.

Recommendations

Based on the findings of the WOTUS Delineation described in the enclosed report, Terracon recommends submitting a copy of the WOTUS Delineation report and applicable Jurisdictional Determination request form to the USACE District office for review and verification of the WOTUS Delineation to obtain an AJD.

If future activities would result in impacts to aquatic resources located on the site, 404/401 Clean Water Act (CWA) permitting will likely be required. Impacts to aquatic resources processed as a Nationwide Permit (NWP) or an Individual Permit (IP) depend upon the extent of impacts. NWPs are typically used for projects resulting in less than 0.5 acre of impacts to WOTUS. IPs are typically used for projects resulting in more than 0.5 acre of impacts to WOTUS.

Terracon is available to assist you with 404/401 CWA permitting services at your request. We can also provide additional support studies such as mitigation planning and cultural resource assessments if required by USACE.

Closing

Terracon appreciates the opportunity to provide services on this important project. Please feel free to contact either of the undersigned if you have any questions or require additional information.

Sincerely,
Terracon Consultants, Inc.

A handwritten signature in cursive script that reads 'Hannah Davis'.

Hannah Davis
Senior Staff Ecologist

A handwritten signature in cursive script that reads 'Jim W. Baxter'.

Jim W. Baxter
Senior Ecologist

Enclosure: Waters of the US Delineation Report

Waters of the United States Delineation

Charles Hardy Parkway Site

South of Charles Hardy Parkway

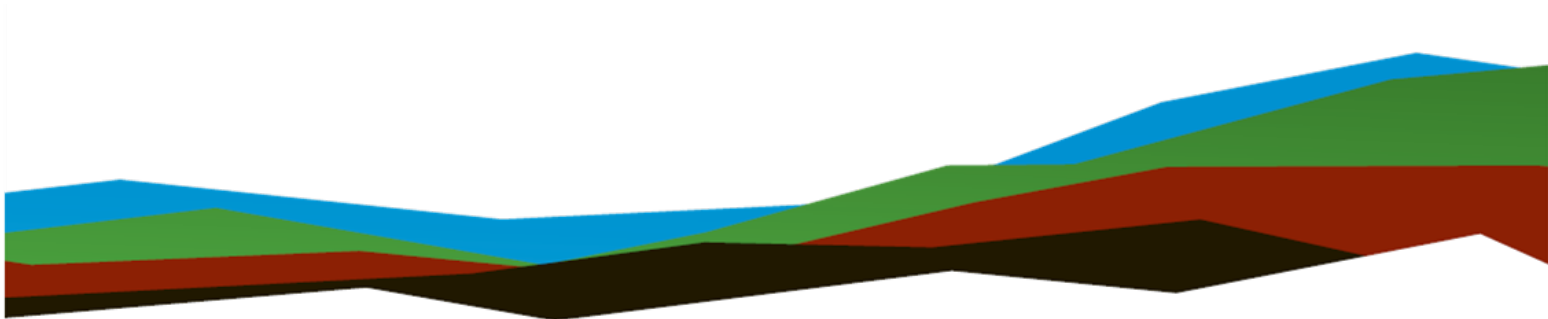
Dallas, Paulding County, GA

October 10, 2023 | Terracon Project No. 49237685



Prepared for:

Highlands Residential
1777 Peachtree Street Suite 200
Atlanta, GA 30309



Prepared by:

Terracon Consultants, Inc.
Lawrenceville, Georgia



Nationwide
Terracon.com

■ Facilities
■ Environmental
■ Geotechnical
■ Materials

Waters of the US Delineation

Charles Hardy Parkway Site ■ Dallas, Georgia

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1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) was retained by Highlands Residential LLC (Client) to perform a Waters of the U.S. (WOTUS) delineation on the Charles Hardy Parkway site located in Dallas, Paulding County, Georgia hereafter referred to as the site. The site location is depicted in Appendix A. The original WOTUS Delineation was performed in accordance with our proposal Terracon Proposal No. PGC237033 dated July 9, 2023.

The delineation consisted of an approximately 23-acre site that contains undeveloped wooded and grassed land with abandoned homes along the eastern boundary. The wooded land primarily consisted of a mixed hardwood-pine forest with streams and a wetland. A pond was located in the grassed field, abutting the forested area. Photographs depicting the conditions on-site are provided in Appendix C.

The purpose of performing the preliminary WOTUS delineation was to characterize the existing site conditions, observe the site for the presence of WOTUS, including wetlands, and provide an opinion regarding whether or not WOTUS (if observed) would be considered jurisdictional by the United States Army Corps of Engineers (USACE).

2.0 SCOPE OF SERVICES

Terracon performed the following scope of work in accordance with our proposal:

- Preliminary Data Gathering and Analysis of readily available government documentation.
- Mobilized to the site to conduct the Field Delineation using consecutively numbered colored flagging to mark aquatic resource boundaries.
- Sub-meter Global Positioning Satellite (GPS) surveying of each delineation flag.
- Prepared a map showing approximate locations of delineated WOTUS, including wetland areas observed during the Field Delineation, if any.
- Completed a preliminary WOTUS Delineation Report that included site characterization information, a discussion of applicable data, and recommendations for the site.

3.0 PRELIMINARY DATA GATHERING AND ANALYSIS

Prior to visiting the site to conduct the field delineation, background research was conducted, consisting of locating and reviewing historic aerial photographs, historic topographic maps, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) maps, soil data from the Natural Resources Conservation Service (NRCS), Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), publicly available elevation data such as light detection and ranging (LiDAR) data, and/or other related data based on availability. The preliminary data analysis assisted Terracon in identifying potential aquatic resources and jurisdictional features on the site. The data evaluated is described in the subsections below.

3.1 Topographic Maps and Aerial Photographs

Readily available USGS topographic map was reviewed to evaluate the potential presence of aquatic resources that may be considered WOTUS by USACE. Table 1 contains a brief description of applicable features identified during review of the topographic map.

- **Topographic map:** 2020 Lost Mountain, GA – USGS Topographic Map (1:24,000)

Table 1: Summary of Topographic Map

Direction	Description
Site	The site is illustrated primarily as open and wooded land. There is a pond mapped in the north/central portion of the site and a perennial stream mapped flowing through the pond that flows north to south/southeast.
North	Charles Hardy Parkway and commercial development
East	Wooded land and a pond
South	Wooded land, perennial stream, and residential development
West	Wooded land and residential developments

Based on the review of the USGS topographic map, the site elevation ranges from approximately 1,060 to 1,120 feet above mean sea level. Topography is illustrated as sloping generally to the southeast. The topographic map is provided as Exhibit 1 in Appendix A.

3.2 National Wetlands Inventory and National Hydrography Dataset

The USFWS NWI map was reviewed to identify wetland areas on the site and in the immediate vicinity. The NWI map depicts suspect wetland areas and waterbodies based on stereoscopic analysis of high-altitude aerial photographs. The NHD is used to portray surface water. The NHD represents the drainage network with features such as rivers, streams, canals, lakes, ponds, coastline, dams, and streamgages. A NWI/NHD map is included as Exhibit 4 in Appendix A.

The review of the NWI map indicates the presence of a stream and pond onsite consistent with the topographic map.

3.3 Soil Data

Data from the USDA NRCS Web Soil Survey was reviewed to identify soil types, including hydric soils for the site. Soils containing hydric soil components are documented on the National List of Hydric Soils. Inclusion on the National List of Hydric Soils indicates that the soil series or one of its components contain characteristics that may be hydric and is not an indication of hydric soil for a specific location.

Hydric soils listed on the NRCS National List of Hydric Soils must meet one or more of the following NRCS hydric criteria codes:

1. All Histels except Folistels and Histosols except Folists; or
2. Map unit components in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, or Andic, Cumulic, Pachic, or Vitrandic subgroups that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil;
3. Map unit components that are frequently ponded for long duration or very long duration during the growing season that:
 - a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - b. Show evidence that the soil meets the definition of a hydric soil; or
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:

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- a. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
- b. Show evidence that the soils meet the definition of a hydric soil.

Table 2 is an excerpt from the NRCS Web Soil Survey Hydric Soil Rating.

Table 2: Excerpt from the NRCS Web Soil Survey

Summary by Map Unit — Paulding County, Georgia				
Map unit symbol	Map unit name	Rating*	Acres in AOI**	Percent of AOI
AaE2	Agricola-Lloyd-Musella complex, 15 to 25 percent slopes, moderately eroded	0	1.0	4.2%
LdC2	Lloyd-Agricola-Musella complex, 6 to 10 percent slopes, moderately eroded	0	5.3	23.0%
LdD2	Lloyd-Agricola-Musella complex, 10 to 15 percent slopes	0	13.9	60.4%
ToA	Toccoa sandy loam, 0 to 3 percent slopes, occasionally flooded	0	2.9	12.4%
Totals for Area of Interest			23.0	100.0%

* This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform.

**Acreages are approximate only.

Based on a review of the NRCS soil data, none of the soils onsite contain hydric components (See Appendix A Exhibit 3).

3.4 FEMA FIRM Map

Terracon downloaded and reviewed Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel Number 13223C0161C eff. 9/29/2006. According to the FIRM panels, the site is located in Zone X which is outside of the FEMA designated 100-year and 500-year floodplain zones. The FEMA map is included in Appendix A Exhibit 5.

4.0 FIELD DELINEATION TECHNIQUES

Terracon personnel conducted a reconnaissance of the site in October 2023 to characterize the existing site conditions and identify the presence of potential jurisdictional wetlands and waters. The additional delineation also focused on the

client's preferred substation location in order to determine if construction in that area would result in any impacts to aquatic features. Characteristics of potential jurisdictional wetlands and waters were assessed (when applicable) utilizing the criteria detailed in sections 4.1 and 4.2 of this report. The evaluation methods generally followed the routine on-site determination method referenced in the 1987 USACE Manual and the Eastern Mountain and Piedmont Region Version 2.0 (Regional Supplement). Section 2.0 of this reports discusses features that were delineated for this report.

4.1 Wetland Observations

Wetlands generally have three essential characteristics: wetland hydrology, hydrophytic vegetation, and hydric soils. Vegetation and hydrology observations were performed throughout the site. Data regarding the three essential characteristics was gathered within observed suspect wetland areas as applicable to further delineate boundaries.

4.1.1 Plant Community Assessment

Areas were visually observed to determine the species, when possible, and absolute percentage of ground cover for five strata of plant community types within a thirty-foot radius of the observation location. The wetland indicator status for each species of vegetation observed was documented. The indicator status was determined using the USACE National Wetlands Plant List (2018 NWPL v3.4). Indicator status categories for vegetation are presented below:

- **Obligate Wetland (OBL):** occur almost always (estimated probability greater than 99%) under natural conditions in wetlands.
- **Facultative Wetland (FACW):** usually occur in wetlands (estimated probability 67%-99%) but occasionally found in non-wetlands.
- **Facultative (FAC):** equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
- **Facultative Upland (FACU):** usually occur in non-wetlands (estimated probability 67%-99%) but occasionally found in wetlands.
- **Upland (UPL):** rarely occur in wetlands but occur almost always (estimated probability greater than 99%) under natural conditions in non-wetlands.

The percent cover of each stratum was determined, and dominance was evaluated. Dominant species were the most abundant species that accounted for more than 20 percent of the absolute percent coverage of the stratum. The number of dominant species with an indicator status of OBL, FACW, and/or FAC was compared to the total

number of dominant species across all strata. Typically, when more than 50 percent of the dominant species had an indicator status of OBL, FACW, and/or FAC, hydrophytic vegetation was present. If the percentage of dominant species with an indicator status of OBL, FACW, and/or FAC was less than 50 percent, prevalence index and morphological adaptations may have been evaluated to confirm if hydrophytic vegetation was present or absent.

4.1.2 Hydric Soils Assessment

After Terracon evaluated wetland vegetation, subsurface soil samples were collected. The samples were collected to a depth of approximately 20 inches below ground surface and were visually compared to Munsell Soil Color Charts®, which aided in the evaluation of hydric soil characteristics. The soil samples were further examined for hydric soil indicators including, but not limited to, histosol, thick dark surface, sandy gleyed matrix, sandy redox, loamy gleyed matrix, redox dark surface, and/or redox depressions. If these or other hydric soil indicators were observed in the subsurface soil sample, the observation location was considered to have hydric soil.

4.1.3 Wetland Hydrology Assessment

Visual indicators of wetland hydrology were evaluated. Examples of primary wetland hydrology indicators include, but are not limited to, surface water, high water table, soil saturation, water marks, sediment deposits, drift deposits, iron deposits, inundation visible on aerial imagery, and water-stained leaves. Examples of secondary wetland hydrology indicators include, but are not limited to, surface soil cracks, drainage patterns, moss trim lines, and crayfish burrows. If at least one primary wetland hydrology indicator or two secondary wetland hydrology indicators were observed, the observation location was considered to have wetland hydrology.

4.2 Classification of Wetlands

Upon completion of the review of the three wetland criteria at each area, a wetland determination was made by a Terracon scientist. Under normal circumstances, if one or more of the wetland criteria were not identified, the area was not considered to be a wetland. If present, the wetland/upland boundaries were marked in the field using consecutively numbered flagging and each flag location was marked using submeter GPS technology. The Field Delineation included collection of hydrology, vegetation, and soil assessment data from discrete sample locations (Data Points) necessary to complete required USACE Wetland Determination Data Forms. The number of Data Points evaluated was determined based on professional judgement. The recorded Wetland Determination Data Forms for the project site can be found in Appendix B

and Data Point locations are depicted on the Depiction of Aquatic Resources Map (Exhibit 7 in Appendix A).

4.3 Surface Water and Drainage Feature Observations

Terracon also made observations of site features that may be considered jurisdictional waterbodies. If a waterbody was identified, observations regarding its characteristics were recorded. Potential jurisdictional waterbodies are typically evaluated based on the observation of the following characteristics:

- **Flow Characteristics:**
 - Perennial: contains water at all times except during extreme drought.
 - Intermittent: carries water a considerable portion of the time but ceases to flow occasionally or seasonally.
 - Ephemeral: carries water only during and immediately after periods of rainfall or snowmelt.
- **Ordinary High Water Mark (OHWM):** The limit line on the shore established by the fluctuation of the water surface. It is shown by such things as a clear line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, the presence of litter and debris or other features influenced by the surrounding area.
- **Bank Shape Descriptions:**
 - Undercut: banks that overhang the stream channel
 - Steep: bank slope of approximately greater than 30 degrees
 - Gradual: bank slope of approximately 30 degrees or less
- **Aquatic Habitat Descriptions:**
 - Pool: deeper portion of a stream where water flows slower than in neighboring, shallower portions, smooth surface, and finer substrate
 - Riffle: shallow area in a stream where water flows swiftly over gravel and rock or other coarse substrate resulting in a rough flow and a turbulent surface
 - Run: section of a stream with a low or high velocity and with little or no turbulence on the surface of the water.

During the Field Delineation, Terracon personnel marked the jurisdictional limits of aquatic resources using consecutively numbered flagging. Each flag location was marked using submeter GPS technology. Linear aquatic resources located entirely within abutting wetland systems were evaluated for stream parameters and the

approximate locations of the linear features were estimated and displayed on the Depiction of Aquatic Resources Map (Exhibit 7 in Appendix A).

4.4 Depiction of Aquatic Resources

USACE requires a depiction of the Field Delineation results to serve as the basis for verification of aquatic resource locations. The Depiction of Aquatic Resources Map (Appendix A, Exhibit 7) was created by uploading the shapefile points collected using a Trimble TDC150 with Global Navigation Satellite System (GNSS) receiver at each flag location. The point shapefiles were geoprocessed into polygon shapefiles for each aquatic resource and exported to a map deliverable using ArcMap® software. The Depiction of Aquatic Resources Map contains a generalized boundary of the site based on best available data such as spatially referenced computer aided design and drafting (CADD) data (if available and provided by the client), county parcel data, and/or existing boundary surveys.

5.0 FIELD DELINEATION RESULTS

In October 2023, Terracon performed a Field Delineation on the site using the field techniques described in Section 4.0. The findings of the Field Delineation are illustrated on the Depiction of Aquatic Resources Map (Exhibit 7 of Exhibit A). The GIS data created using the GPS data was evaluated to determine the approximate size of each aquatic resource. Site photographs, included in Appendix C, provide an indication of the physical characteristics observed during the Field Delineation. Wetland and upland data determination forms for selected wetlands and upland locations representative of aquatic conditions on the site are provided in Appendix B. Descriptions of the aquatic resource features observed on site are provided in the following sections.

5.1 Wetlands

Terracon observed one potentially jurisdictional wetland on site totaling 0.27 acres. Wetland A was observed as forested. The canopy included sweetgum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and yellow poplar (*Liriodendron tulipifera*); the dominant midstory vegetation included Chinese privet (*Ligustrum sinense*); and the ground cover primarily consisted of Japanese stilt grass (*Microstegium vimineum*). A portion of Wetland A directly abuts a perennial stream that flows offsite and therefore will likely be considered jurisdictional. Hydric soil and hydrology indicators were observed within the wetlands as indicated in the Data Forms included in Appendix B. Table 3 contains a summary of the potentially jurisdictional wetland identified on site during the Field Delineation.

Table 3: Summary of Wetlands

Feature	Jurisdictional Opinion	Acreage	Location	Wetland Classification Code
WA	Jurisdictional	0.27	Central	PFO

5.2 Jurisdictional Tributaries and Channels

Terracon observed one potentially jurisdictional tributary on-site. The stream was classified as perennial and totals approximately 998 LF. The perennial stream displayed moderate bed and bank characteristics, with a silty to cobbly bottom. The streams flows offsite and therefore is classified as likely jurisdictional. However, these classifications are preliminary and only the USACE can confirm these findings. Table 4 contains a summary of the tributary identified on site during the Field Delineation.

Table 4: Summary of Tributaries/Ditches

Tributary	Length (LF)	Name of Water Body	Location	WOTUS	Jurisdictional	OHWM	Approx. Width Across OHWM
PSA	998	Unnamed channel	South/Central	Perennial	Yes	Yes	2-6 feet

The Georgia Environmental Protection Division (GEPD) Erosion and Sedimentation Control Unit (ESCU) maintains a 25-foot undisturbed vegetative buffer on all state waters. State waters are generally defined as features that display a clear line of wrested vegetation and are not contained within the boundaries of a single-owned piece of property. Lakes, ponds, perennial streams, and intermittent streams are the most common types of features classified as state waters in Georgia. Ephemeral channels normally do not qualify as state waters due to not displaying a clear line of wrested vegetation. Paulding County also imposes a 50-foot stream buffer extending outward from both of the stream banks, with an additional setback of 25 feet, in which all impervious cover is prohibited. The pond and the stream channels listed in Table 4 will likely qualify as state waters subject to the GEPD state-mandated 25-foot buffer and the Villa Rica 50-ft buffer and 75-ft impervious buffer. The local issuing authority (Paulding County) would need to confirm these state water classifications if potential buffer intrusion is proposed.

It should be noted that an additional tributary was observed west of the site boundary. The stream was classified as perennial; however, a portion of the tributary was classified as an intermittent ditch because the channel appears to have recently been excavated in an upland area. It should be noted that the excavation appeared to be limited to 176 LF and this is what distinguishes this portion of the stream from

the naturally occurring perennial portion. This tributary will likely qualify as state waters and therefore will also be subject to the GEPD state-mandated 25-foot buffer and the Villa Rica 50-ft buffer and 75-ft impervious buffer.

5.3 Non-Jurisdictional Ponds

Terracon observed one potentially non-jurisdictional pond in the north/central portion of the site totaling 0.29 acres. No evidence of the pond discharging, such as pipes or outflows, were observed downslope from the pond. Because the pond is not connected to any other aquatic features, Terracon has classified the pond as potentially non-jurisdictional. However, this classification is preliminary and only the USACE can confirm these findings.

5.4 Upland Areas

Terracon sampled and assessed all areas that represented different vegetative communities throughout the project site to thoroughly review if these areas may exhibit the three wetland criteria (hydrophytic vegetation, hydric soils, and hydrology). Some of the sample locations were found to be classified as uplands based on the three wetland criteria not being met in the different vegetative communities. The portions of the site not identified as containing aquatic resources are considered uplands. A majority of the upland areas on the site were observed as mixed hardwood-pine where vegetation was thick. The remainder of the site was observed as open grassland with common field grass species. Upland data points were collected in representative locations throughout the site which are illustrated on Terracon's Wetland Delineation Map (Exhibit 7).

6.0 CONCLUSIONS

Terracon conducted a WOTUS Delineation of the approximately 23-acre site in October 2023. The site visit included locating and delineating all aquatic features on the site, and all potential jurisdictional and non-jurisdictional features have been delineated. A total of one potentially jurisdictional wetland totaling 0.27 acres, one potentially jurisdictional stream totaling 998 linear feet, and one potentially non-jurisdictional pond totaling 0.29 acres were identified on the site. These classifications are preliminary and only the USACE can make the final jurisdictional determination on the delineated features. The aquatic resources identified during Terracon's wetland delineation are illustrated on the Depiction of Aquatic Resources Map located in Appendix A, Exhibit 7.

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Charles Hardy Parkway Site ■ Dallas, Georgia
October 10, 2023 ■ Terracon Project No. 49237685



7.0 GENERAL COMMENTS

The preliminary WOTUS delineation was performed in accordance with generally accepted practices of this profession undertaken in similar studies at the same time and in the same geographical area. A preliminary WOTUS delineation, such as the one performed at this site, is of limited scope, is noninvasive, and cannot eliminate the potential that WOTUS, including wetlands are present at the site beyond what is identified by the limited scope of this preliminary delineation. In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. No biological delineation can wholly eliminate uncertainty regarding the potential for concerns in connection with a project. The limitations of this preliminary delineation should be recognized.

This report has been prepared in accordance with generally accepted scientific and engineering evaluation practices. This report is for the exclusive use of the client and any relying government entities for the project being discussed. No warranties, either expressed or implied, are intended or made.

Conditions within WOTUS, including wetlands naturally change over time and can vary seasonally over short periods. Effects of man-made disturbances and/or temporal variations (e.g. rainfall, season, drought), and/or subjective regulatory interpretation of data and field conditions may preclude assessment in conformance with USACE requirements and sometimes significantly affect findings, conclusions, and recommendations.

8.0 CLOSING

Terracon appreciates the opportunity to provide services on this important project. Please feel free to contact either of the undersigned if you have any questions or require additional information.

Sincerely,
Terracon Consultants, Inc.

A handwritten signature in cursive script that reads 'Hannah Davis'.

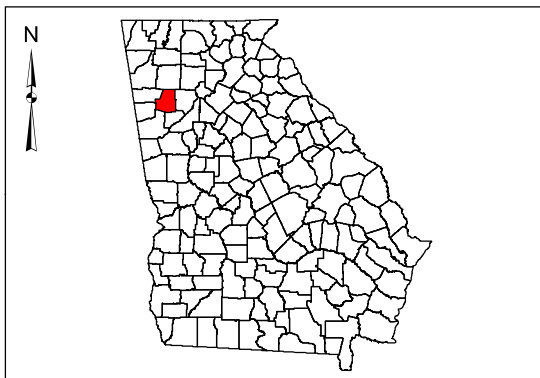
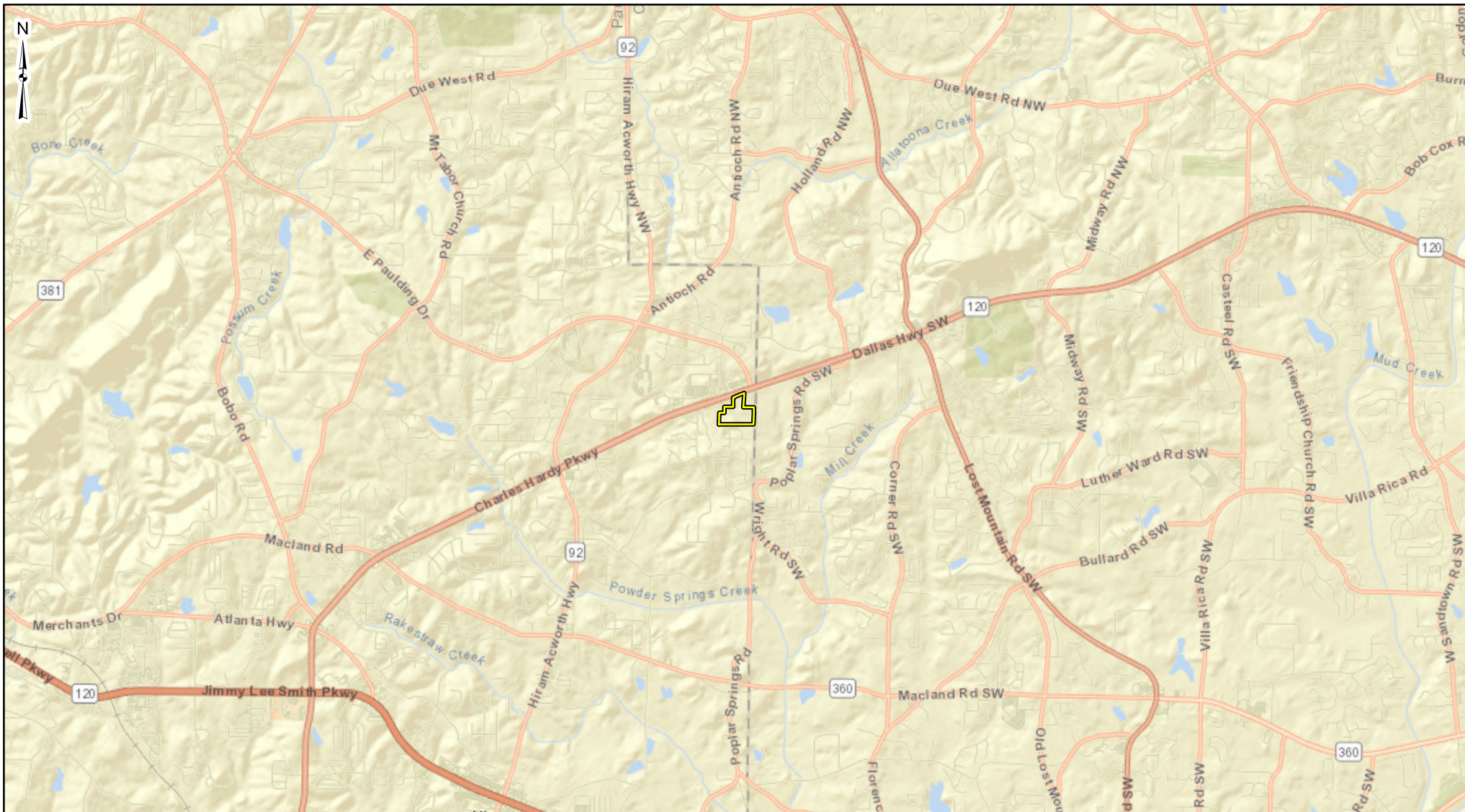
Hannah Davis
Senior Staff Ecologist

A handwritten signature in cursive script that reads 'Jim W. Baxter'.

Jim W. Baxter
Senior Ecologist

APPENDIX A

Exhibits



 Project Boundary (+/- 23.2 acres)

 Miles
0 0.5 1 2

DATA SOURCES:
Georgia County Census Data (2009); ESRI WMS - OpenStreetMap

Project No.:	49237685
Date:	Nov 2023
Drawn By:	CMP
Reviewed By:	KHD

Terracon
Explore with us
2201 Rowland Avenue Savannah, GA 31404
PH. (912) 629-4000 terracon.com

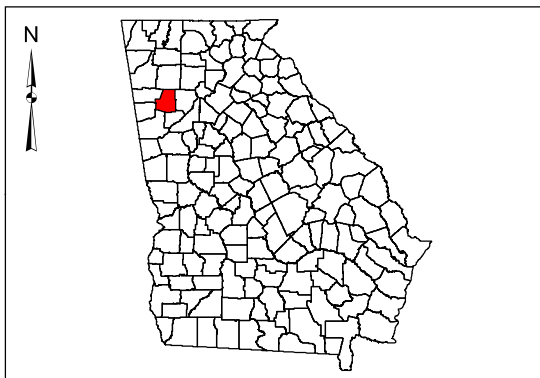
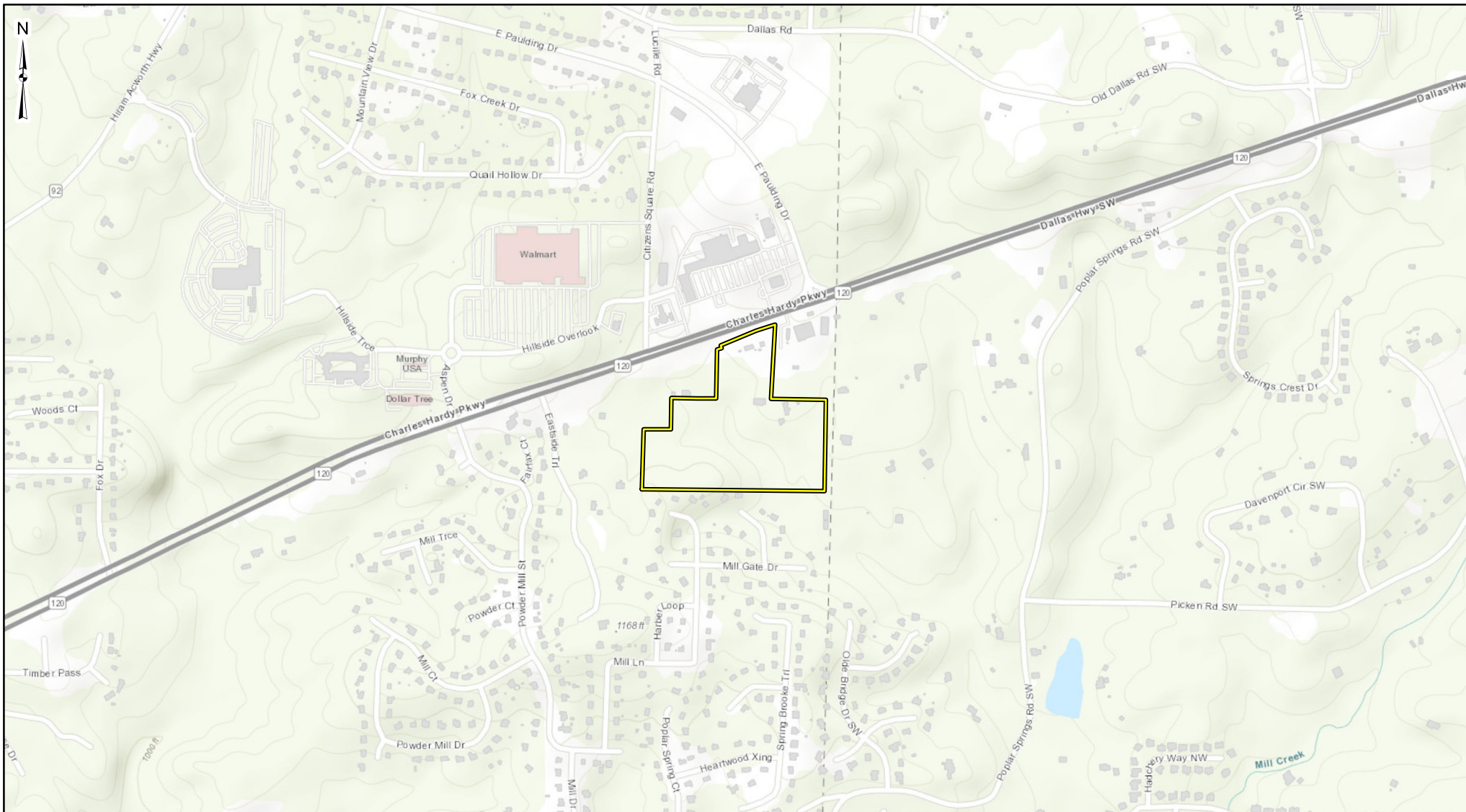
Vicinity Exhibit

Charles Hardy Parkway Site
Highlands Residential LLC

Dallas, Paulding County, GA

Exhibit

1



Project Boundary (+/- 23.2 acres)

0 500 1,000 2,000 Feet

DATA SOURCES:
Georgia County Census Data (2009); ESRI WMS - Topographic Image

Project No.:	49237685
Date:	Nov 2023
Drawn By:	CMP
Reviewed By:	KHD

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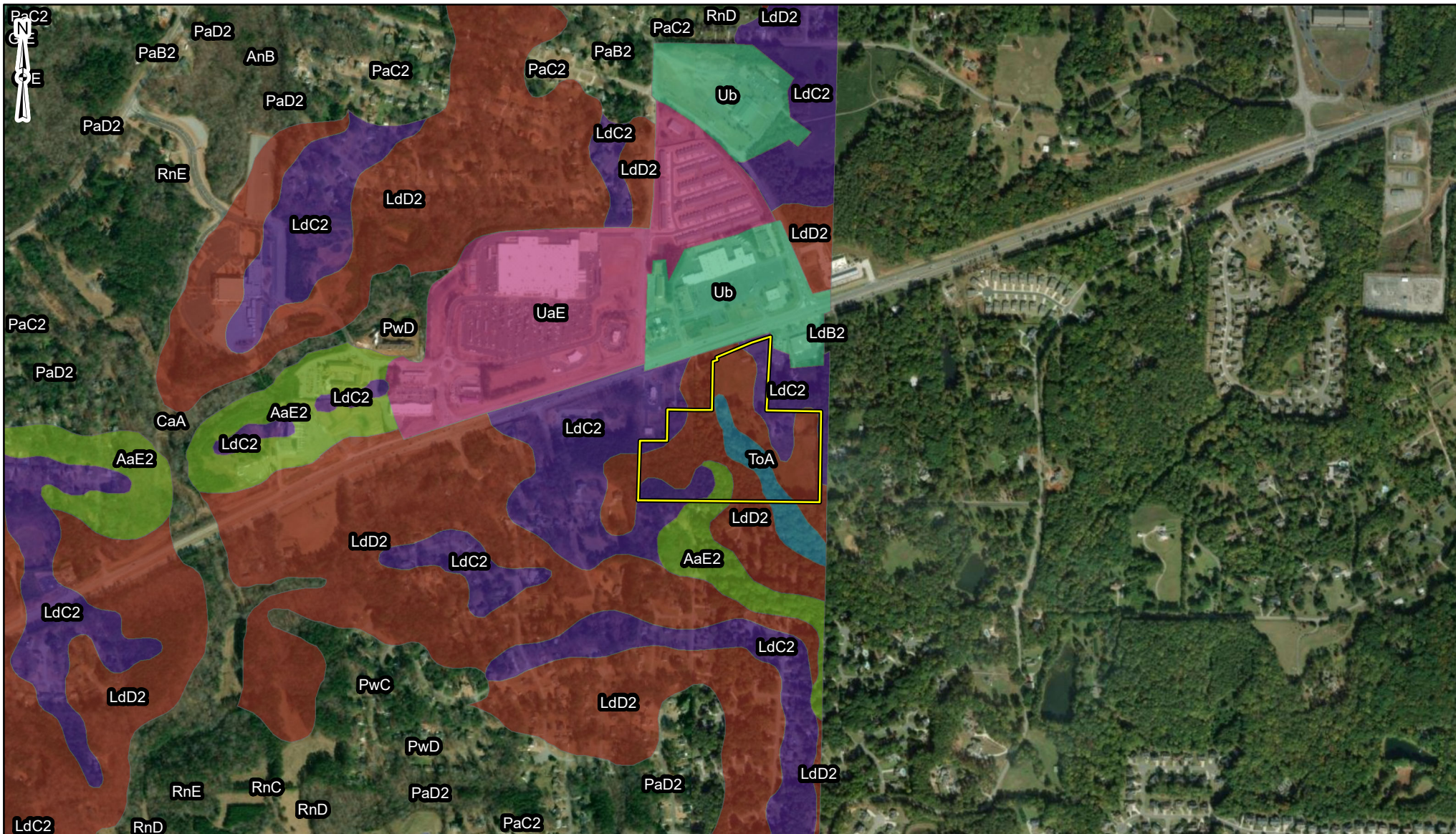
Topographic Exhibit

Charles Hardy Parkway Site
Highlands Residential LLC

Dallas, Paulding County, GA

Exhibit

2



Project Boundary (+/- 23.2 acres)

- AaE2: Agricola Lloyd Musella complex, 15-25% slopes (WD)
- LdC2: Lloyd Agricola Musella complex, 6-10% slopes (WD)
- LdD2: Lloyd Agricola Musella complex, 10-15% slopes (WD)
- ToA: Toccoa sandy loam, 0-3% slopes (WD)
- UaE: Udorthents, 10-25% slopes
- Ub: Urban Land

0 500 1,000 2,000 Feet

DATA SOURCES:
Georgia County Census Data (2009); ESRI WMS - Aerial/ NRCS Soil Survey Data, Paulding County, GA

Project No.:	49237685
Date:	Nov 2023
Drawn By:	CMP
Reviewed By:	KHD



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NRCS Soil Survey

Charles Hardy Parkway Site
Highlands Residential LLC

Dallas, Paulding County, GA

Exhibit

3



 Project Boundary (+/- 23.2 acres)

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Riverine

0 500 1,000 2,000 Feet

DATA SOURCES:
Georgia County Census Data (2009); ESRI WMS - Aerial/ USFWS
National Wetland Inventory Data (2019)

Project No.:	49237685
Date:	Nov 2023
Drawn By:	CMP
Reviewed By:	KHD

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USFWS NWI Data

Charles Hardy Parkway Site
Highlands Residential LLC

Dallas, Paulding County, GA

Exhibit

4



Project Boundary (+/- 23.2 acres)

A: 100 Year Floodplain (no BFE determined)

AE: 100 Year Floodplain (BFE determined)

X: Area of Minimal Flood Hazard

0 500 1,000 2,000 Feet

DATA SOURCES:
Georgia County Census Data (2009); ESRI WMS - Aerial/ FEMA
Flood Zone, Paulding County, GA

Project No.:	49237685
Date:	Nov 2023
Drawn By:	CMP
Reviewed By:	KHD

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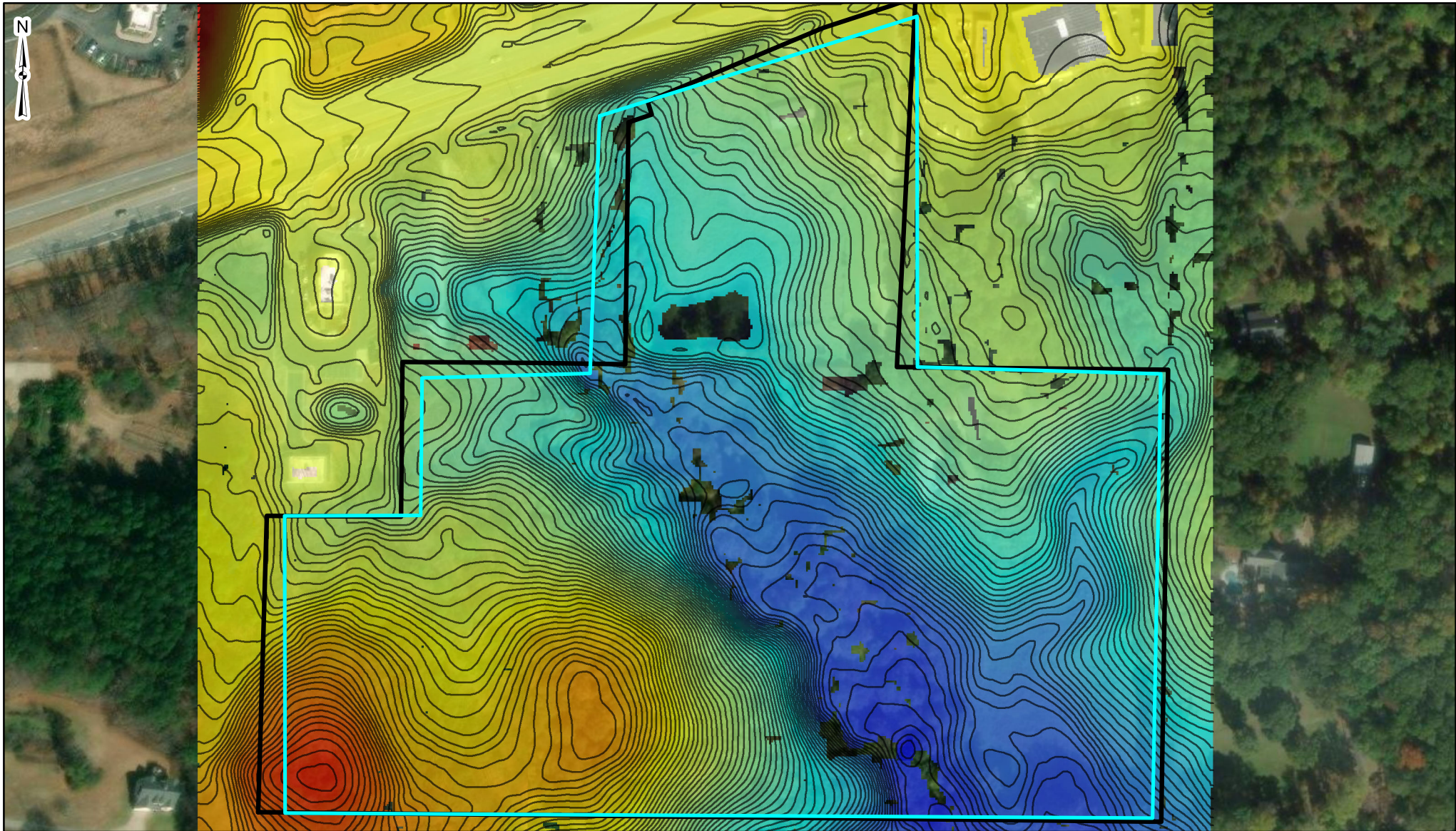
FEMA Flood Zones

Charles Hardy Parkway Site
Highlands Residential LLC

Dallas, Paulding County, GA

Exhibit

5



 Project Boundary (+/- 23.2 acres)

 Contour Intervals (1 ft)

Elevation (ft):

 High : 1135.47

 Low : 1041.38

 Feet
0 100 200 400

DATA SOURCES:
Georgia County Census Data (2009); ESRI WMS - Aerial/ NOAA
Digital Elevation Data, Georgia Statewide (2018)

Project No.:	49237685
Date:	Nov 2023
Drawn By:	CMP
Reviewed By:	KHD


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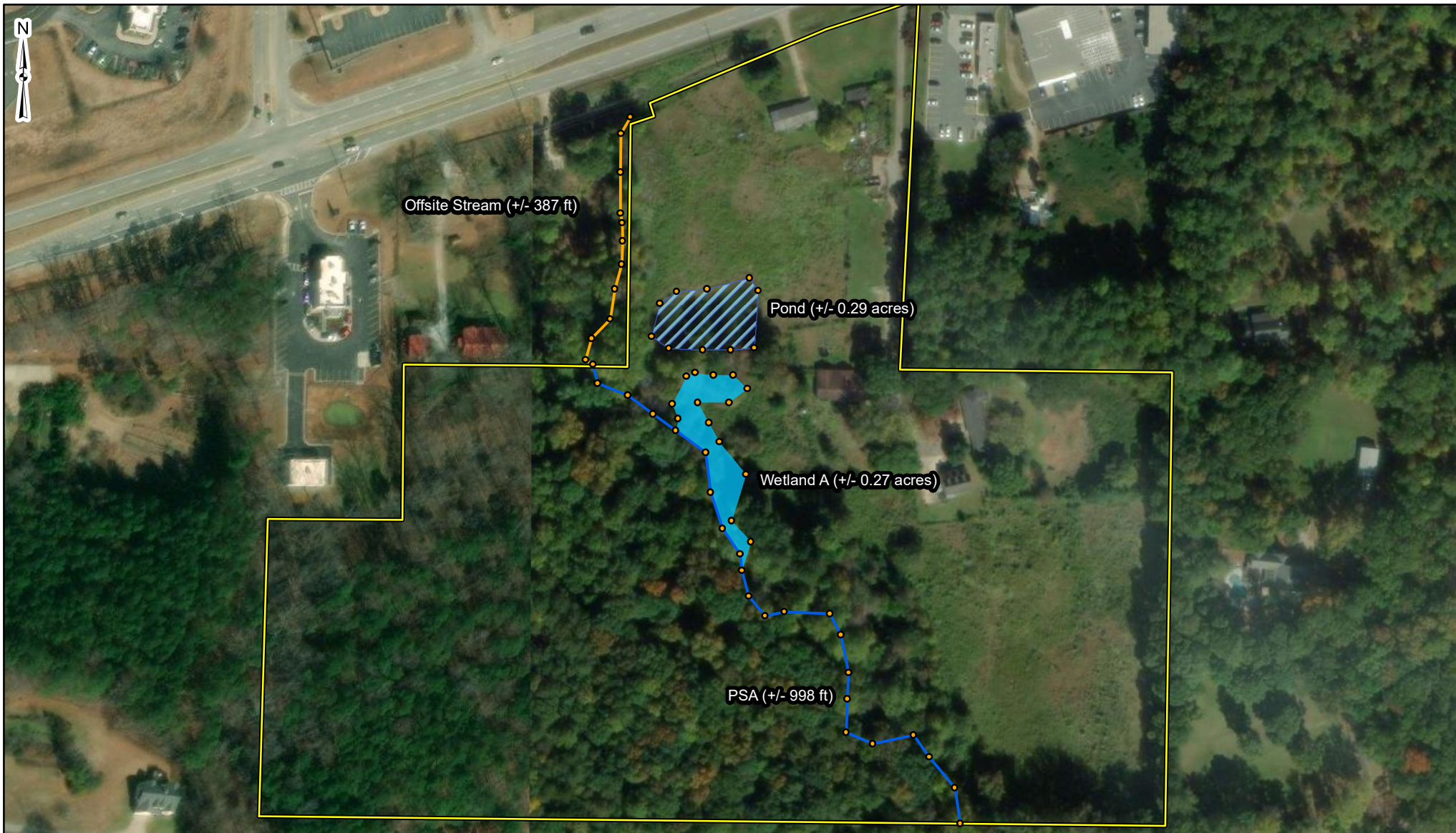
LiDAR Digital Elevation Data

Charles Hardy Parkway Site
Highlands Residential LLC

Dallas, Paulding County, GA

Exhibit

6



Project Boundary (+/- 23.2 acres)

Wetland (+/- 0.27 acres)

Pond (+/- 0.29 acres)

Perennial Stream (+/- 998 ft)

Offsite Stream (+/- 387 ft)

GPS Data

0 100 200 400 Feet

DATA SOURCES:
Georgia County Census Data (2009); ESRI WMS - Aerial

Project No.:	49237685
Date:	Nov 2023
Drawn By:	CMP
Reviewed By:	KHD

Terracon
Explore with us

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PH. (912) 629-4000 terracon.com

Sub-Meter GPS Delineation Exhibit

Charles Hardy Parkway Site
Highlands Residential LLC

Dallas, Paulding County, GA

Exhibit

7

APPENDIX B

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Charles Hardy Parkway Site City/County: Dallas/Paulding County Sampling Date: 10/3/23
Applicant/Owner: Highlands Residential LLC State: GA Sampling Point: Wetland A
Investigator(s): Hannah Davis, Angela Maroti Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Bottom land Local relief (concave, convex, none): Concave Slope (%): 0-3
Subregion (LRR or MLRA): LRR P Lat: 33°55'57.31"N Long: 84°43'32.66"W Datum: NAD83
Soil Map Unit Name: Toccoa sandy loam NWI classification: PFO

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

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

<table style="width: 100%;"><tr><td style="width: 30%;">Hydrophytic Vegetation Present?</td><td style="width: 10%;">Yes ☒</td><td style="width: 10%;">No _____</td></tr><tr><td>Hydric Soil Present?</td><td>Yes ☒</td><td>No _____</td></tr><tr><td>Wetland Hydrology Present?</td><td>Yes ☒</td><td>No _____</td></tr></table>	Hydrophytic Vegetation Present?	Yes ☒	No _____	Hydric Soil Present?	Yes ☒	No _____	Wetland Hydrology Present?	Yes ☒	No _____	<table style="width: 100%;"><tr><td style="width: 60%;">Is the Sampled Area within a Wetland?</td><td style="width: 10%;">Yes ☒</td><td style="width: 10%;">No _____</td></tr></table>	Is the Sampled Area within a Wetland?	Yes ☒	No _____
Hydrophytic Vegetation Present?	Yes ☒	No _____											
Hydric Soil Present?	Yes ☒	No _____											
Wetland Hydrology Present?	Yes ☒	No _____											
Is the Sampled Area within a Wetland?	Yes ☒	No _____											
Remarks:													

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <table style="width: 100%;"><tr><td style="width: 50%;">☐ 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) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)</td><td style="width: 50%;">☐ 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) ☐ Other (Explain in Remarks)</td></tr></table>		☐ 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) ☐ 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) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☒ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)							
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Field Observations: <table style="width: 100%;"><tr><td style="width: 30%;">Surface Water Present?</td><td style="width: 10%;">Yes _____ No ☒</td><td style="width: 10%;">Depth (inches): _____</td></tr><tr><td>Water Table Present?</td><td>Yes _____ No ☒</td><td>Depth (inches): _____</td></tr><tr><td>Saturation Present? (includes capillary fringe)</td><td>Yes _____ No ☒</td><td>Depth (inches): _____</td></tr></table>		Surface Water Present?	Yes _____ No ☒	Depth (inches): _____	Water Table Present?	Yes _____ No ☒	Depth (inches): _____	Saturation Present? (includes capillary fringe)	Yes _____ No ☒	Depth (inches): _____	Wetland Hydrology Present? Yes ☒ No _____
Surface Water Present?	Yes _____ No ☒	Depth (inches): _____									
Water Table Present?	Yes _____ No ☒	Depth (inches): _____									
Saturation Present? (includes capillary fringe)	Yes _____ No ☒	Depth (inches): _____									
Remarks:											

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: Wetland A

Tree Stratum (Plot size: <u>30 feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Acer rubrum</u>	<u>30</u>	<u>YES</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
2. <u>Liquidambar styraciflua</u>	<u>25</u>	<u>YES</u>	<u>FAC</u>	
3. <u>Liriodendron tulipifera</u>	<u>5</u>	<u>NO</u>	<u>FACU</u>	
4. _____	_____	<u>-</u>	<u>-</u>	
5. _____	_____	<u>-</u>	<u>-</u>	
6. _____	_____	<u>-</u>	<u>-</u>	
7. _____	_____	<u>-</u>	<u>-</u>	
8. _____	_____	<u>-</u>	<u>-</u>	
<u>60</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>0</u> (A) <u>0</u> (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: <u>30 feet</u>)				
1. <u>Ligustrum sinense</u>	<u>30</u>	<u>YES</u>	<u>FAC</u>	
2. _____	_____	<u>-</u>	<u>-</u>	
3. _____	_____	<u>-</u>	<u>-</u>	
4. _____	_____	<u>-</u>	<u>-</u>	
5. _____	_____	<u>-</u>	<u>-</u>	
6. _____	_____	<u>-</u>	<u>-</u>	
7. _____	_____	<u>-</u>	<u>-</u>	
8. _____	_____	<u>-</u>	<u>-</u>	
<u>30</u> = Total Cover				
Herb Stratum (Plot size: <u>30 feet</u>)				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. <u>Microstegium vimineum</u>	<u>95</u>	<u>YES</u>	<u>FAC</u>	
2. _____	_____	<u>-</u>	<u>-</u>	
3. _____	_____	<u>-</u>	<u>-</u>	
4. _____	_____	<u>-</u>	<u>-</u>	
5. _____	_____	<u>-</u>	<u>-</u>	
6. _____	_____	<u>-</u>	<u>-</u>	
7. _____	_____	<u>-</u>	<u>-</u>	
8. _____	_____	<u>-</u>	<u>-</u>	
9. _____	_____	<u>-</u>	<u>-</u>	
10. _____	_____	<u>-</u>	<u>-</u>	
11. _____	_____	<u>-</u>	<u>-</u>	
12. _____	_____	<u>-</u>	<u>-</u>	
<u>95</u> = Total Cover				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>30 feet</u>)				
1. _____	_____	<u>-</u>	<u>-</u>	
2. _____	_____	<u>-</u>	<u>-</u>	
3. _____	_____	<u>-</u>	<u>-</u>	
4. _____	_____	<u>-</u>	<u>-</u>	
5. _____	_____	<u>-</u>	<u>-</u>	
6. _____	_____	<u>-</u>	<u>-</u>	
<u>0</u> = Total Cover				
Hydrophytic Vegetation Present? Yes ☒ No ☐				

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

SOIL

Sampling Point: Wetland A

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Charles Hardy Parkway Site City/County: Dallas/Paulding County Sampling Date: 10/3/23
Applicant/Owner: Highlands Residential LLC State: GA Sampling Point: Upland A
Investigator(s): Hannah Davis, Angela Maroti Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 10-15
Subregion (LRR or MLRA): LRR P Lat: 33°55'57.80"N Long: 84°43'34.03"W Datum: NAD83
Soil Map Unit Name: Lloyd-Agricola-Musella complex NWI classification: None

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

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

<table style="width: 100%;"><tr><td style="width: 30%;">Hydrophytic Vegetation Present?</td><td style="width: 30%;">Yes _____ No ☒</td></tr><tr><td>Hydric Soil Present?</td><td>Yes _____ No ☒</td></tr><tr><td>Wetland Hydrology Present?</td><td>Yes _____ No ☒</td></tr></table>	Hydrophytic Vegetation Present?	Yes _____ No ☒	Hydric Soil Present?	Yes _____ No ☒	Wetland Hydrology Present?	Yes _____ No ☒	<table style="width: 100%;"><tr><td style="width: 60%;">Is the Sampled Area within a Wetland?</td><td style="width: 40%;">Yes _____ No ☒</td></tr></table>	Is the Sampled Area within a Wetland?	Yes _____ No ☒
Hydrophytic Vegetation Present?	Yes _____ No ☒								
Hydric Soil Present?	Yes _____ No ☒								
Wetland Hydrology Present?	Yes _____ No ☒								
Is the Sampled Area within a Wetland?	Yes _____ No ☒								
Remarks:									

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <table style="width: 100%;"><tr><td style="width: 50%;">☐ 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) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)</td><td style="width: 50%;">☐ 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) ☐ Other (Explain in Remarks)</td></tr></table>		☐ 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) ☐ 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) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Sparsely Vegetated Concave Surface (B8) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-Neutral Test (D5)							
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Surface Water Present?	Yes _____ No ☒	Depth (inches): _____									
Water Table Present?	Yes _____ No ☒	Depth (inches): _____									
Saturation Present? (includes capillary fringe)	Yes _____ No ☒	Depth (inches): _____									
Remarks:											

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: Upland A

Tree Stratum (Plot size: <u>30 feet</u>)	Absolute % Cover	Dominant Species?	Indicator Status															
1. <u>Acer rubrum</u>	<u>25</u>	<u>YES</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</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>50</u> (A/B)														
2. <u>Liquidambar styraciflua</u>	<u>25</u>	<u>YES</u>	<u>FAC</u>															
3. <u>Liriodendron tulipifera</u>	<u>25</u>	<u>YES</u>	<u>FACU</u>															
4. _____	_____	<u>-</u>	<u>-</u>															
5. _____	_____	<u>-</u>	<u>-</u>															
6. _____	_____	<u>-</u>	<u>-</u>															
7. _____	_____	<u>-</u>	<u>-</u>															
8. _____	_____	<u>-</u>	<u>-</u>															
<u>75</u> = Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <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>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>140</u></td> <td>x 4 = <u>480</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>220</u> (A)</td> <td><u>720</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.27</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>80</u>	x 3 = <u>240</u>	FACU species <u>140</u>	x 4 = <u>480</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>220</u> (A)	<u>720</u> (B)
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>80</u>	x 3 = <u>240</u>																	
FACU species <u>140</u>	x 4 = <u>480</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>220</u> (A)	<u>720</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>30 feet</u>)																		
1. <u>Ligustrum sinense</u>	<u>15</u>	<u>YES</u>	<u>FAC</u>															
2. <u>Ilex opaca</u>	<u>15</u>	<u>YES</u>	<u>FACU</u>															
3. _____	_____	<u>-</u>	<u>-</u>															
4. _____	_____	<u>-</u>	<u>-</u>															
5. _____	_____	<u>-</u>	<u>-</u>															
6. _____	_____	<u>-</u>	<u>-</u>															
7. _____	_____	<u>-</u>	<u>-</u>															
8. _____	_____	<u>-</u>	<u>-</u>															
9. _____	_____	<u>-</u>	<u>-</u>															
10. _____	_____	<u>-</u>	<u>-</u>															
<u>30</u> = Total Cover																		
Herb Stratum (Plot size: <u>30 feet</u>)																		
1. <u>Hedera helix</u>	<u>80</u>	<u>YES</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Microstegium vimineum</u>	<u>10</u>	<u>NO</u>	<u>FAC</u>															
3. <u>Rubus arguta</u>	<u>5</u>	<u>NO</u>	<u>FAC</u>															
4. _____	_____	<u>-</u>	<u>-</u>															
5. _____	_____	<u>-</u>	<u>-</u>															
6. _____	_____	<u>-</u>	<u>-</u>															
7. _____	_____	<u>-</u>	<u>-</u>															
8. _____	_____	<u>-</u>	<u>-</u>															
9. _____	_____	<u>-</u>	<u>-</u>															
10. _____	_____	<u>-</u>	<u>-</u>															
11. _____	_____	<u>-</u>	<u>-</u>															
12. _____	_____	<u>-</u>	<u>-</u>															
<u>95</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30 feet</u>)																		
1. _____	_____	<u>-</u>	<u>-</u>	Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>														
2. _____	_____	<u>-</u>	<u>-</u>															
3. _____	_____	<u>-</u>	<u>-</u>															
4. _____	_____	<u>-</u>	<u>-</u>															
5. _____	_____	<u>-</u>	<u>-</u>															
6. _____	_____	<u>-</u>	<u>-</u>															
<u>0</u> = Total Cover																		
Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																		
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.)

[illegible]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:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (**LRR N**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1) (**LRR N, MLRA 147, 148**)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- ___ Thin Dark Surface (S9) (**MLRA 147, 148**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- ___ Umbria Surface (F13) (**MLRA 136, 122**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- ___ Red Parent Material (F21) (**MLRA 127, 147**)

- ☐ 2 cm Muck (A10) **(MLRA 147)**
☐ Coast Prairie Redox (A16)
(MLRA 147, 148)
☐ Piedmont Floodplain Soils (F19)
(MLRA 136, 147)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

APPENDIX C

Site Photographs



Photo 1: View of Perennial Stream A (PSA) in near the western site boundary.



Photo 2: View of Wetland A in the central portion of the site.



Photo 3: Photo of hydric soil sample collected in Wetland A.



Photo 4: View of PSA in the southern portion of the site before it flows offsite.



Photo 5: View of the upland fields located in the eastern portion of the site.



Photo 6: View of upland wooded areas in the western portion of the site.



Photo 7: View of upland soils collected in the upland mixed hardwood-pine forest portions of the site.



Photo 8: View of the pond located in the north/central portion of the site.



Photo 9: View of naturally flowing portion of the offsite stream located west of the site.



Photo 10: View of the transition area from the naturally flowing stream to the recently excavated ditch.



Photo 11: Photo of the recently excavated intermittent ditch located along the west of the site boundary.

APPENDIX D

Credentials

APPENDIX E

Common Acronyms

COMMON ACRONYMS

AJD	Approved Jurisdictional Determination
CWA	Clean Water Act
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GPS	Global Positioning Systems
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate Wetland
OHWM	Ordinary High Water Mark
PJD	Preliminary Jurisdictional Determination
UPL	Obligate Upland
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
WOTUS	Waters of the U.S.