Wetland Delineation Report

Walker Drive Properties

Fauquier County, Virginia
October 4, 2022

Prepared for:

Walker Drive Investment Grp, LLC
321 Walker Drive, Suite 101
Warrenton, VA 20186

Prepared by:

Passage Creek Environmental

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Passage Creek Environmental
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Appendices

Executive Summary

The waters of the U.S., including wetlands, identified during this investigation were delineated by JEI Enterprises, LLC dba Passage Creek Environmental (PCE) in accordance with 33 CFR Part 328 - *Definition of Waters of the United States*, the 1987 Corps of Engineers' Wetlands Delineation Manual (the Manual)[1], and the Regional Supplement to the Manual (the Supplement)[2] and represent those areas that are most likely within the regulatory purview of the U.S. Army Corps of Engineers (USACE) and/or the Virginia Department of Environmental Quality (DEQ). This report represents the consultant's professional opinion based on examination of the vegetation, soils, hydrology and available reference documents. Field indicators can change dramatically with variations in hydrology as well as other factors. Therefore, our conclusions may vary from future observations by others. The delineation of surface waters described by this report and plans constitutes an assessment of features at the site at the time of our review on September 26, 2022, and does not represent conditions which may exist in the future. PCE, its affiliates and subcontractors will not be liable for any unauthorized impacts to jurisdictional wetlands and waters which may result from reliance solely on this report and plans. This report does not, in any way, represent a legal jurisdictional determination of the landward limits of waters and wetlands which may be regulated by the USACE or the DEQ. It is strongly recommended that the aforementioned agencies be consulted in an effort to gain written confirmation of the delineation described by this report and plans prior to engaging in any design or construction on the property described herein.

The appropriate permits must be obtained from the federal and/or state regulatory agencies prior to any proposed impacts to waters of the U.S., including wetland fills and stream crossings.

Property Description

The property described herein is located in the Town of Warrenton, Fauquier County, Virginia and consists of three parcels of land with an aggregate area of approximately 23.6 acres fronting east of Walker Drive and north of East Lee Street. The property is identified on the USGS Warrenton, VA 7.5' Quadrangle Map (see Appendix A for the USGS Quadrangle Map) and is located at 38.712963 N latitude and -77.782049 W longitude. The property is located in a residential area and contains an existing house and driveway (see Appendix B for the Aerial Photograph). The property is located within the Middle Potomac-Anacostia-Occoquan drainage area identified by Hydrologic Unit Code (HUC) 02070010.

Methodology

The Manual outlines a three-parameter approach to identifying wetlands: dominant hydrophytic vegetation, hydric soils, and indicators of surface and subsurface hydrology. All three

[1] Environmental Laboratory. (1987). "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

[2] U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0*, ed. J.F. Berkowitz, J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

parameters must be present for an area to be considered a jurisdictional wetland in accordance with these criteria.

PCE performed a preliminary evaluation using available map resources prior to the field investigation. These resources include, but may not be limited to:

- Fauquier County Soil Survey available online at the NRCS, Web Soil Survey (https://websoilsurvey.nrcs.usda.gov/app/HomePage.htm).

- USGS 7.5' Quadrangle, Warrenton, VA (2019). (United States Department of the Interior, United States Geological Service, Washington, DC. Available online at: http://www.usgs.gov/)

- National Wetlands Inventory (United States Department of the Interior, United States Fish and Wildlife Service, Washington, DC. Available online at: http://www.fws.gov/)

The reference information was verified by on-site inspection conducted by PCE during September 2022 to characterize soils, vegetation, and hydrology, and to define the boundaries of waters of the U.S., including wetlands, that may be present on the Property.

Any waters of the U.S. identified on the site were classified according to the Cowardin System, as described in *Classification of Wetlands and Deepwater Habitats of the United States* (1979). The Cowardin system provides a classification hierarchy which allows resource managers and others to define wetlands according to hydrologic, geomorphologic, chemical, and biological factors. The NWI map identifies at the northern end of the two southern parcels that is associated with Cedar Run (see Appendix C for the NWI map).

Soils

The Natural Resources Conservation Service (NRCS) defines a hydric soil as 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." The most recent version of Field Indicators of Hydric Soils in the United States[3] provides indicators of hydric soils for the Land Resource Region in which the Property is located. A hydric soil may also be identified by listing in The National List of Hydric Soils, published by the NRCS, and state and local hydric soils lists.

The Soil Survey of Fauquier County lists the following soil types on the property (see Appendix D for the Soils Map):

[3] United States Department of Agriculture, Natural Resources Conservation Service. 2018. *Field Indicators of Hydric Soils in the United States*, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Table 1: Soils Summary Table

Map Unit	Map Unit Name	Hydric Soil Rating*
12A	Rohrersville loam, 0-2% slopes	Non-hydric (0)
17B	Middleburg loam, 2-7% slopes	Non-hydric (0)
40C	Myersville silt loam, 7-15% slopes	Non-hydric (0)
40D	Myersville silt loam, 15-25% slopes	Non-hydric (0)
45C	Fauquier silt loam, 7-15% slopes	Non-hydric (0)

* - *NRCS ranks hydric soils on a scale of 0 – 100 (non-hydric – hydric).*

Soil samples taken during the field investigation are documented on the data sheets (see Appendix G for data sheets).

Vegetation

Plant species observed on the site were identified and the wetland indicator status for each species was determined from the *National Wetland Plant List*[4]. The indicator status of a species indicates the probability that the species will occur in a wetland of the northeast region of the United States (Table 2).

Table 2: Plant Indicator Status

Plant Indicator Category	Indicator Symbol	Definition
Obligate Wetland	OBL	Occur almost always (estimated probability >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 and non-wetlands (estimated probability 34%-66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67%-99%) but occasionally found in wetlands (estimated probability 1%-33%)
Obligate Upland	UPL	Occur in wetlands in another region, but occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.

Hydrology

The Manual and Supplement state that wetland hydrology encompasses all hydrologic characteristics of areas that are periodically inundated or have soils that are saturated to the surface at some time during the growing season. Hydrologic indicators include, but are not limited to, sediment deposits, visual inundation, drift lines, soil erosion, and hummocking. Evidences of these indicators are present even during dry periods, and therefore are useful indicators of wetland hydrology.

[4] Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 (https://wetland_plants.usace.army.mil). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC.

Evidence of hydrologic activity at the site was observed in the areas flagged as potentially jurisdictional surface waters. The observed characteristics include water marks, water-stained leaves, drainage patterns, and stream channels.

Results

This investigation showed the presence of potential wetland areas subject to federal and state jurisdiction in the eastern portion of the property.

The northern and southern ends of the site are dominated by ridges and higher elevations. The central portion of the site, to the south of the existing buildings, contains drainage features that may be considered waters of the United States (WOTUS). If they are they would be subject to jurisdiction by the Army Corps of Engineers and VA Dept. of Environmental Quality.

Stream S-1, identified by flags A1 through A50, carries flow in a northerly direction to a confluence with Stream S-2. S-1 had no water in it on the date of this investigation. The stream has a discontinuous bed and banks and lacks many of the geomorphologic features typically associated with intermittent and perennial streams. S-1 achieved a score of 14 using the North Carolina Stream Identification Form, Ver. 4.11, putting the stream in the category of an ephemeral channel.

Stream S-2, identified by flags B1 through B18 and C1 through C18, carries flow in an easterly direction and under the Eastern Bypass to Cedar Run. The channel has a well-defined bed and banks with many features attributable to intermittent and perennial streams in the Piedmont. S-2 achieved a score of 17.5 using the Fairfax Perennial v. Intermittent Stream Protocol, putting the stream in the category of intermittent.

At the head of Stream S-2 there is a SWM device meant to control storm runoff from the developed areas west of Walker Drive and including Walker Drive. The device consists of an open-top concrete box with a 36-inch RCP culvert that discharges into the stream. The box has a built-in orifice to allow continual flow, but will back up storm flows into an excavated detention area for slow release into Stream S-2. It appears likely that the SWM device was constructed when Walker Drive was relocated. Over the years significant flows have eroded around the concrete box and pipe rendering the device useless regarding its intended purpose. Wetland sample point location DP2 was established to determine if there are vegetated wetlands in the excavated detention area. The soils do not meet any of the hydric soil indicators, therefore no wetlands are present.

The following table is a summary of the wetlands and streams identified within, or adjacent to, the subject area:

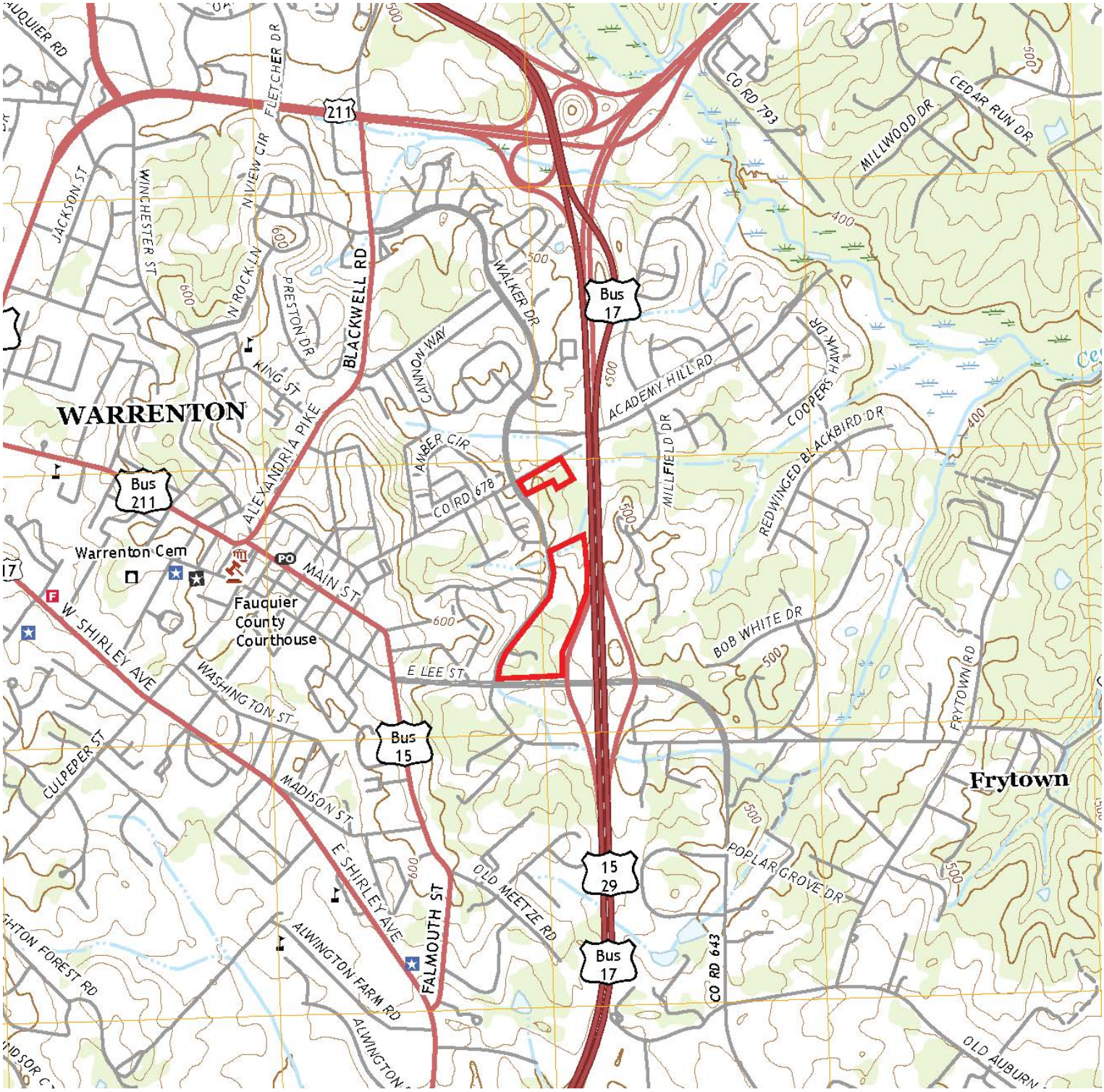
Table 3: Stream and Wetland Summary Table

Classification	Length (LF)	Area (SF)	Area (Ac)
Streams	450	N/A	N/A
Wetlands	N/A	N/A	N/A
Total Streams and Wetlands*	**450**	**N/A**	**N/A**

** - The listing of Total Streams and Wetlands shown above is based on a field delineation of wetlands. Actual amounts will be calculated based on a field survey of wetland flagging.*

Appendix A

USGS Quadrangle Map



Scale: Not to Scale

Date: USGS Quadrangle 2019

JEI Enterprises, LLC

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USGS Quadrangle Map

Walker Drive Properties

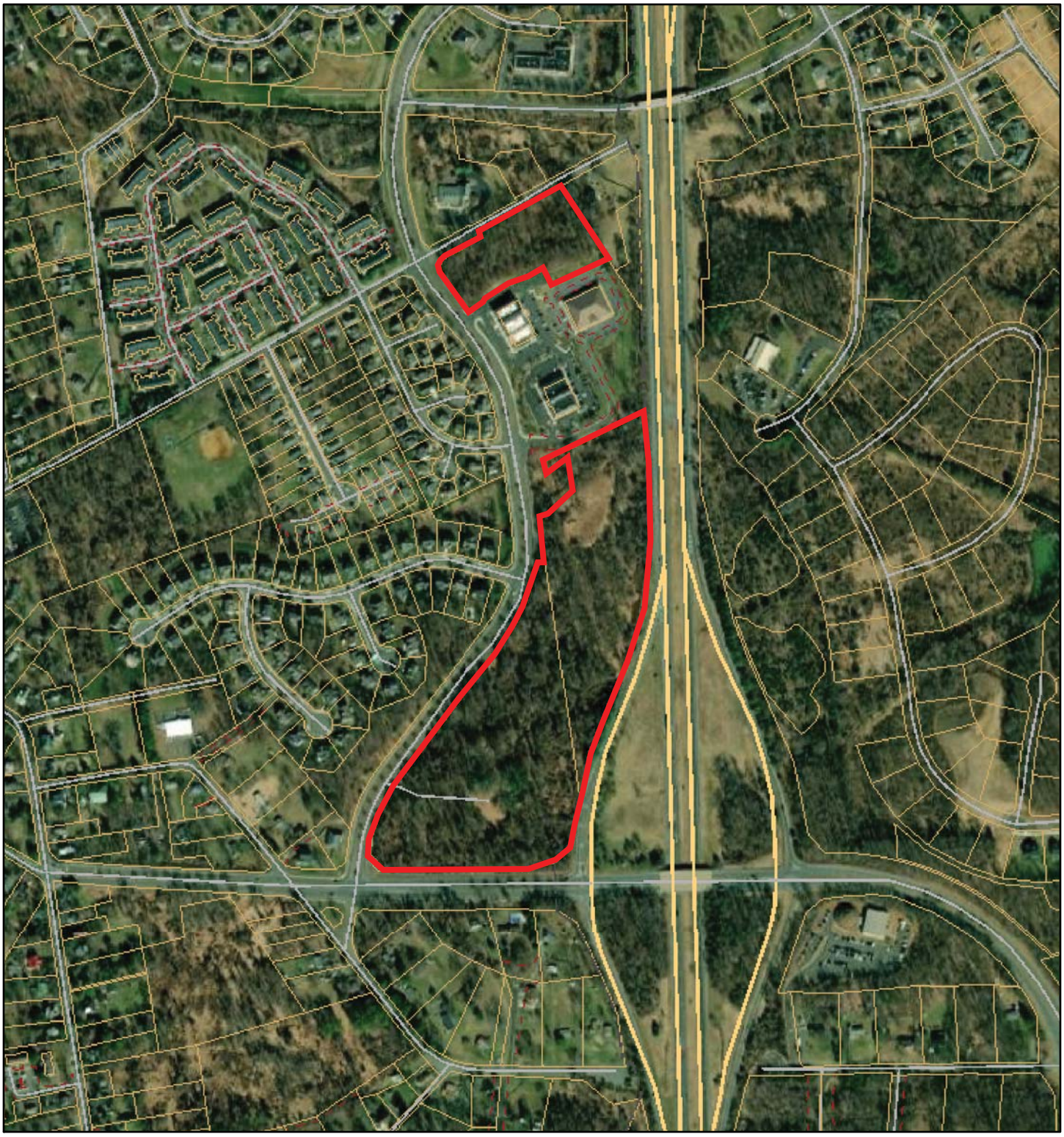
38.712963 N/ -77.782049 W
Warrenton, USGS Quadrangle
Fauquier County, VA

Prepared for:
Walker Drive Investment Grp, LLC
321 Walker Drive, Suite 101
Warrenton, VA 20186

Appendix B

Aerial Photograph

Walker Drive Properties - Aerial Photo



10/4/2022, 12:16:17 PM

1:8,400

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

- School Location_9K
- Municipal
- Railroad_9K
- TaxParcel_9K
- Road Centerlines_without labels_9K
- MAJOR
- MINOR; RAMP
- COUNTY
- LOCAL
- PRIVATE
- Encumbrances_9K

Bloomfield Township MI, Esri., Inc., Maxar

Fauquier County GIS

Bloomfield Township MI, Esri., Inc. | Maxar |

Appendix C

NWI Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Walker Drive Properties - NWI Map

October 4, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Appendix D

Soils Map

Soil Map—Fauquier County, Virginia
(Walker Drive Properties)

Map Scale: 1:4,710 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

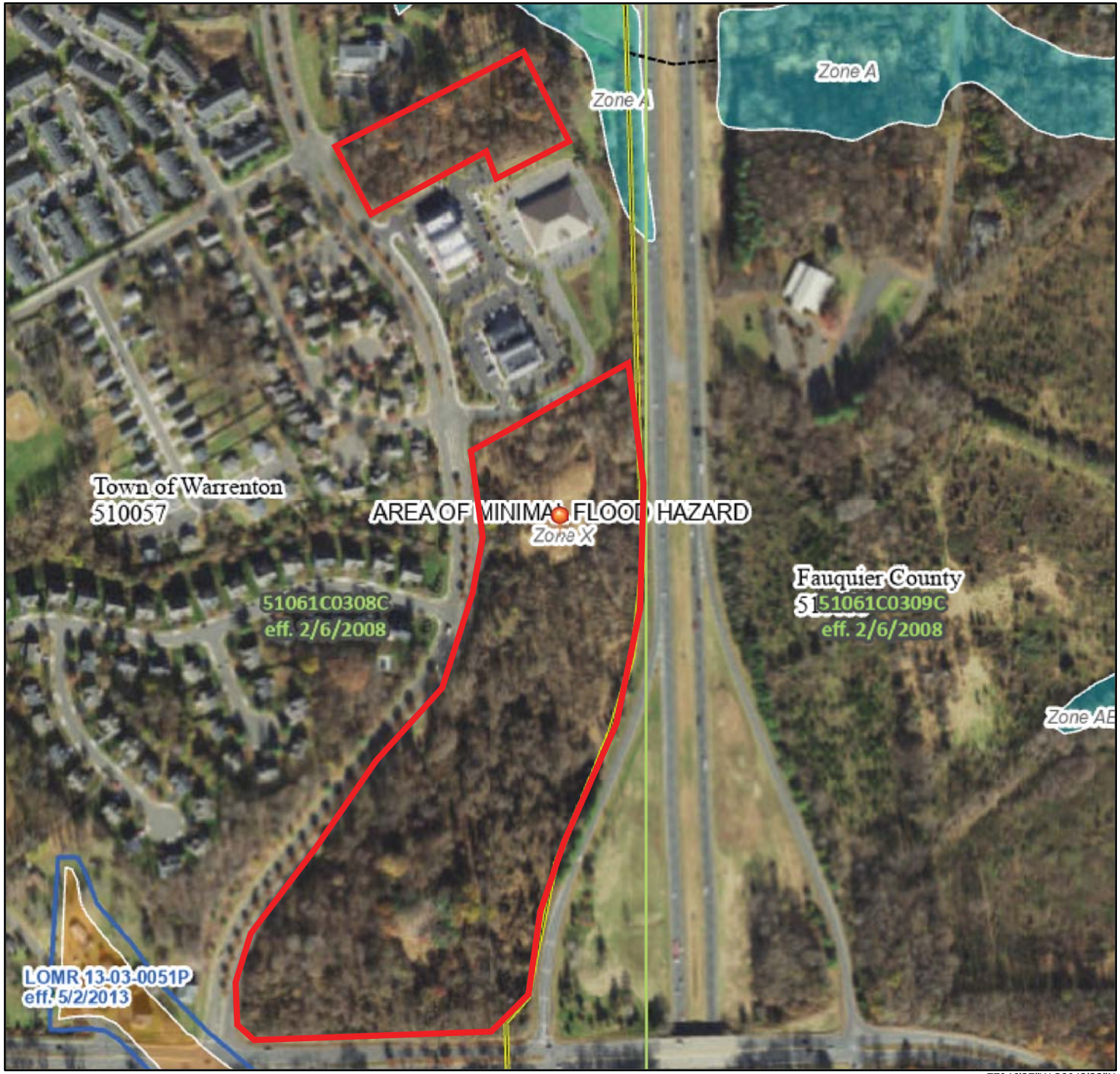
Appendix E

FEMA Map

National Flood Hazard Layer FIRMette

FEMA

77°47'14"W 38°43'1"N



77°46'37"W 38°42'33"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/4/2022 at 12:49 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix F

Environmental Constraints Map

LEGEND

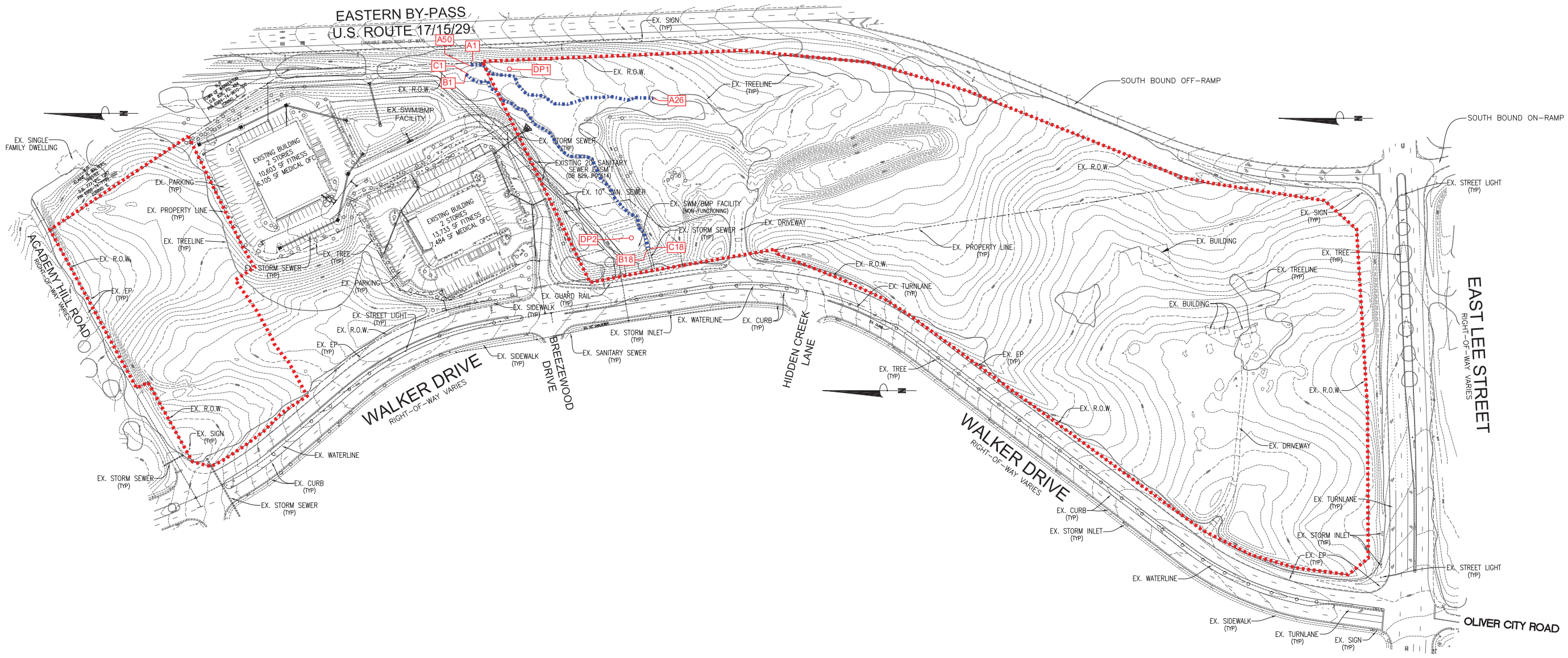
Property boundary

Streams

Wetland Flags A1

Data Point Location DP1

Wetland Delineation Plan
October 4, 2022



100 0 100 300

Scale 1" = 100 ft

MICHAEL JOHNSON, PE
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TEL: (703)609-1776 FAX: (571)223-5016

EXISTING CONDITIONS
WALKER DRIVE PROPERTIES

TOWN OF WARRENTON, VIRGINIA

NO.	DATE	DESCRIPTION
		TOWN REVISIONS

DESIGN: M.A.J.
DRAWN: R.C.N.
DATE: 1/22/16
SCALE: 1"=100'

7 OF 7

Appendix G

Data Forms

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Walker Drive **City/County:** Fauquier **Sampling Date:** 26-Sep-22

Applicant/Owner: Walker Drive Investment Group, LLC **State:** Virginia **Sampling Point:** **DP01**

Investigator(s): J. Irre **Section, Township, Range:** **S** null **T** null **R** null

Landform (hillslope, terrace, etc.): Swale **Local relief (concave, convex, none):** flat **Slope:** 2.0 **% /** 1.1 **°**

Subregion (LRR or MLRA): MLRA 148 in LRR S **Lat.:** 38.713474 **Long.:** -77.781501 **Datum:** WGS84

Soil Map Unit Name: 17B Middleburg loam **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

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

Remarks:

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ 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)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches): 0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches): 0	

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

null

Remarks:

confined to drainage channel, no hydrology present on this date

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: DP01

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')				
1. Acer rubrum	90	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	90	= Total Cover		
Sapling-Sapling/Shrub Stratum (Plot size: 15')				
1. Acer rubrum	25	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	25	= Total Cover		
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 10')				
1. Microstegium vimineum	90	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	90	= Total Cover		
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	0	x 2 =	0	
FAC species	205	x 3 =	615	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	205	(A)	615	(B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.
Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: DP01

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)	%	Type [1]	Loc²	Texture	Remarks
0-10	7.5YR	4/3	100					Loam	
10-11	10YR	4/4	100					Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated 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) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck 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)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 11 inches

Hydric Soil Present? Yes ○ No ◉

Remarks:

tried three holes, rock at 11 inches in all three

Plot ID: **DP01** Photo Path: C:\Users\PCE\Documents\Projects\VA V-Z\Walker Drive\Images\

Photo File: **P9260007.JPG** Orientation: null -facing

Lat/Long or UTM : Long/Easting: **null** Lat/Northing: **null**

Description: null

Photo File: **P9260008.JPG** Orientation: null -facing

Lat/Long or UTM: Long/Easting: **null** Lat/Northing: **null**

Description: null

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Walker Drive **City/County:** Fauquier **Sampling Date:** 26-Sep-22

Applicant/Owner: Walker Drive Investment Group, LLC **State:** Virginia **Sampling Point:** DP02

Investigator(s): J. Irre **Section, Township, Range: S** **T** **R**

Landform (hillslope, terrace, etc.): Terrace **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): MLRA 148 in LRR S **Lat.:** 38.713415 **Long.:** -77.782716 **Datum:** WGS84

Soil Map Unit Name: 40C Myersville silt loam **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

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

Remarks:
in old SWM device that no longer functions

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ 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)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches): 0	
Water Table Present?	Yes ○	No ◉	Depth (inches): 0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches): 0	

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

Remarks:
no indicators present

VEGETATION (Five/Four Strata)- Use scientific names of plants.

Sampling Point: DP02

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30')				
1. Platanus occidentalis	25	☑	41.7%	FACW
2. Acer rubrum	20	☑	33.3%	FAC
3. Salix nigra	15	☑	25.0%	OBL
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
	60		= Total Cover	
Sapling-Sapling/Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	0		= Total Cover	
Shrub Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
	0		= Total Cover	
Herb Stratum (Plot size: 10')				
1. Microstegium vimineum	90	☑	93.8%	FAC
2. Persicaria hydropiper	3	☐	3.1%	OBL
3. Persicaria pensylvanica	3	☐	3.1%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
11.	0	☐	0.0%	
12.	0	☐	0.0%	
	96		= Total Cover	
Woody Vine Stratum (Plot size:)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
	0		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	18	x 1 =	18
FACW species	28	x 2 =	56
FAC species	110	x 3 =	330
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	156 (A)		404 (B)

Prevalence Index = B/A = 2.590

Hydrophytic Vegetation Indicators:

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

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

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.
Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ◉ No ○

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: DP02

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type [1]	Loc²	Texture	Remarks
0-16	7.5YR 4/6	95	7.5YR 4/4	5	C	M	Silty Clay Loam	

[1] Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated 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) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck 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)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils[3]:

- ☐ 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)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ◉

Remarks:

Plot ID: **DP02** Photo Path: C:\Users\PCE\Documents\Projects\VA V-Z\Walker Drive\Images\

Photo File: **P9260013.JPG** Orientation: null -facing

Lat/Long or UTM : Long/Easting: **null** Lat/Northing: **null**

Description: null

Photo File: **P9260014.JPG** Orientation: null -facing

Lat/Long or UTM: Long/Easting: **null** Lat/Northing: **null**

Description: null

NC DWQ Stream Identification Form Version 4.11

Date: 9/26/2022	**Project/Site:** Walker Drive Properties	**Latitude:** 38.712963
Evaluator: J. Irre	**County:** Fauquier	**Longitude:** -77.782049
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 14	**Stream Determination (circle one)** Ephemeral **Intermittent Perennial**	**Other** *e.g. Quad Name*:

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0 ○	1 ○	2 ◉	3 ○
2. Sinuosity of channel along thalweg	0 ○	1 ○	2 ◉	3 ○
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0 ◉	1 ○	2 ○	3 ○
4. Particle size of stream substrate	0 ○	1 ◉	2 ○	3 ○
5. Active/relict floodplain	0 ◉	1 ○	2 ○	3 ○
6. Depositional bars or benches	0 ◉	1 ○	2 ○	3 ○
7. Recent alluvial deposits	0 ◉	1 ○	2 ○	3 ○
8. Headcuts	0 ○	1 ◉	2 ○	3 ○
9. Grade control	0 ◉	0.5 ○	1 ○	1.5 ○
10. Natural valley	0 ○	0.5 ◉	1 ○	1.5 ○
11. Second or greater order channel	No = 0 ◉		Yes = 3 ○	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1.5)				
12. Presence of Baseflow	0 ◉	1 ○	2 ○	3 ○
13. Iron oxidizing bacteria	0 ◉	1 ○	2 ○	3 ○
14. Leaf litter	1.5 ○	1 ◉	0.5 ○	0 ○
15. Sediment on plants or debris	0 ◉	0.5 ○	1 ○	1.5 ○
16. Organic debris lines or piles	0 ○	0.5 ◉	1 ○	1.5 ○
17. Soil-based evidence of high water table?	No = 0 ◉		Yes = 3 ○	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	3 ◉	2 ○	1 ○	0 ○
19. Rooted upland plants in streambed	3 ◉	2 ○	1 ○	0 ○
20. Macrobenthos (note diversity and abundance)	0 ◉	1 ○	2 ○	3 ○
21. Aquatic Mollusks	0 ◉	1 ○	2 ○	3 ○
22. Fish	0 ◉	0.5 ○	1 ○	1.5 ○
23. Crayfish	0 ◉	0.5 ○	1 ○	1.5 ○
24. Amphibians	0 ◉	0.5 ○	1 ○	1.5 ○
25. Algae	0 ◉	0.5 ○	1 ○	1.5 ○
26. Wetland plants in streambed	○ FACW = 0.75; ○ OBL = 1.5; ◉ Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Fairfax County - Perennial Stream Field Identification Protocol

Project Name: Walker Drive Properties **Stream ID:** S-2 **Total Score:** 17.5

Watershed: Cedar Run Recorder: J. Irre

Date: 9/26/2022 Time: 1132 Evaluators: J. Irre

Field Indicators:

I.) Streamflow and Hydrology	Absent	Weak	Moderate	Strong
1.) Presence or absence of flowing water and > 48 hrs since last rainfall	0 ○	1 ○	2 ○	3 ◉
2.) Presence of high groundwater table or seeps and springs	0 ◉	1 ○	2 ○	3 ○
3.) Leaflitter in streambed	1.5 ○	1 ◉	0.5 ○	0 ○
4.) Drift lines	0 ○	0.5 ○	1 ◉	1.5 ○
5.) Sediment on debris or plants	0 ◉	0.5 ○	1 ○	1.5 ○

Total Streamflow and Hydrology Points: 5

II.) Geomorphology	Absent	Weak	Moderate	Strong
1.) Riffle-pool sequence	0 ○	1 ○	2 ◉	3 ○
2.) USDA texture in streambed	0 ○	1 ◉	2 ○	3 ○
3.) Natural Levees	0 ◉	1 ○	2 ○	3 ○
4.) Sinuosity	0 ○	1 ○	2 ◉	3 ○
5.) Active or Relic Floodplain	0 ◉	1 ○	2 ○	3 ○
6.) Braided Channel	0 ◉	1 ○	2 ○	3 ○
7.) Recent Alluvial Deposits	0 ◉	1 ○	2 ○	3 ○
8.) Bankfull Bench present	0 ○	1 ◉	2 ○	3 ○
9.) Continuous Bed and Bank	0 ○	1 ○	2 ○	3 ◉
10.) 2nd order or greater **channel** present	***Yes*** = 3 ○		***No*** = 0 ◉	

Total Geomorphology Points: 9

III.) Streambed Soils				
1.) Redoximorphic features present in sides of channel or head cut.	***Present*** = 0 ○		***Absent*** = 1.5 ◉	
2.) Chroma	gleyed = 3 ○	1 = 2 ○	2 = 1 ○	> 2 = 0 ◉

Total Streambed Soils Points: 1.5

IV.) Vegetation	Absent	Weak	Moderate	Strong
1.) Rooted AQUATIC Plants in Streambed	0 ◉	1 ○	2 ○	3 ○
2.) Presence of Periphyton/green algae	0 ○	1 ○	2 ◉	3 ○
3.) Iron Oxidizing Bacteria/Fungus	0 ◉	0.5 ○	1 ○	1.5 ○

4.) Wetland Plants in Streambed (Skip if no plants present in streambed)

SAV = 3 ○ Mostly OBL = 1.5 ○ Mostly FACW = 1 ○ Mostly FAC = 0.5 ○ Mostly FACU, UPL, or None = 0 ◉

Total Vegetation Points: 2

Comments:

Front Page Total 17.5 points

V.) Benthic Macroinvertebrates	Absent	Weak	Moderate	Strong
1.) Benthic Macroinvertebrates	0 ◉	0.5 ○	1 ○	1.5 ○
2.) Bivalves	0 ◉	1 ○	2 ○	3 ○
3.) EPT taxa	***Present*** = 3 ○			***Absent*** = 0 ◉

Total Benthic Macroinvertebrates Points: 0

VI.) Vertebrates	Absent	Weak	Moderate	Strong
1.) Fish	0 ◉	0.5 ○	1 ○	1.5 ○
2.) Amphibians	0 ◉	0.5 ○	1 ○	1.5 ○

Total Vertebrates Points: 0

Total Score: 17.5

Benthics/Amphibians Found:

Weather

Rain Gauge weather underground Date of Last Rainfall 9/13/2022 Rainfall Amount 0.28

Reach Description

Upstream: Trib ○ Headcut ○ Grade Control ○ Structure ◉ Other: culvert

Downstream: Trib ○ Headcut ○ Grade Control ○ Structure ◉ Other: PBY and confluence

Comments:

Storm Network Connections and Watershed Observations

SWM feature at upstream end, water eroded around structure, feature non-functioning

Riparian Buffers Width

LB: Distance >25 feet ○ 26-50 ○ 51-75 ○ 76-100 ○ 100+ ◉

Cover type: Tree ◉ Shrub ○ Herbaceous ○ Lawn ○ Other: ○

Dominant Species: Red Oak, White Oak, Tulip Tree

RB: Distance >25 feet ○ 26-50 ○ 51-75 ◉ 76-100 ○ 100+ ○

Cover type: Tree ◉ Shrub ○ Herbaceous ○ Lawn ○ Other: ○

Dominant Species: Black Cherry, Red Oak, Tulip Tree

Riparian Buffer Comments

Other Observations and Comments:

Is the reach perennial? **YES** ○ **NO** ◉

Photo #	Direction (US, DS, LB, RB)	Notes

Appendix H

Wetland Delineation Photographs

Photo Log

Walker Drive Properties

All photographs taken by

Passage Creek Environmental
during September 2022

Photo 1 – Looking upstream in S-1 near flag A5.

Photo 2 – Looking downstream from same location as previous photo.

Photo 3 – Looking upstream in S-2 near flag B6.

Photo 4 – Looking downstream from same location as previous photo.

Photo 5 – Looking upstream at discharge pipe from SWM device.

Photo 6 – Looking downstream from same location as previous photo.

Photo 7 – Looking at concrete box, part of SWM device.

Photo 8 – Looking upstream at discharge end of culvert under Walker Drive.

Appendix I

Project Information Summary

USACE Summary Sheet for a Jurisdictional Determination

Property Name: Walker Drive Properties

Location: 38.712963 N Latitude, -77.782049 W Longitude

USGS 7.5' Quadrangle: Warrenton, VA

HUC Code: 02070010 (Middle Potomac-Anacostia-Occoquan)

Tributary: UT to Cedar Run

Property Owner: Walker Drive Investment Group, LLC/Springfield Properties, LLC/REMLAND, LLC

Applicant/Agent Information:

Applicant:	**Agent:**
Walker Drive Investment Group, LLC 321 Walker Drive, Suite 101 Warrenton, VA 20186 Attn: Mike Forsten	Passage Creek Environmental 221 Lower Valley Road Strasburg, VA 22657 Attn: James E. Irre, PWD, PWS

Inventory of jurisdictional areas on the property:

Classification	Length (LF)	Area (SF)	Area (Ac)
Streams	450	N/A	N/A
Wetlands	N/A	N/A	N/A
Total Streams and Wetlands*	**450**	**N/A**	**N/A**

** - The listing of Total Streams and Wetlands shown above is based on a field delineation of wetlands. Actual amounts will be calculated based on a field survey of wetland flagging.*