Wetland and Surface Water Delineation Report

Prepared for the:

US 30 Corridor Improvements - Western Section North Versailles and North Huntingdon Townships Allegheny and Westmoreland Counties, Pennsylvania

Prepared for:



Engineering District 12-0 825 N. Gallatin Ave. Ext. Uniontown, PA 15401

Prepared by:



April 2023

US 30 Corridor Improvements - Western Section

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INTRODUCTION

Representatives from the Markosky Engineering Group, Inc. conducted an aquatic resource investigation for the US 30 Corridor Improvements - Western Section project on 9/5/19, 9/17/19, 12/6/19, and 4/12/23. Recent design refinements have reduced the study area that was initially used for aquatic resource delineations earlier in project development. As a result, some of the aquatic resources that were originally surveyed in 2019 now fall outside of the revised project study area and are not included in this revision. The original resource names were retained in this update, resulting in inconsistent numbering in the wetland and surface water identification finding sections of this report.

The project involves full depth reconstruction of approximately 2.6 miles of the existing roadway. The project limits extend from the Leger Road/Carpenter Lane intersection in Westmoreland County to the SR 0048 intersection in Allegheny County. The roadway will be slightly widened throughout the project area to add curb gutter and median areas. Along with the full depth reconstruction and minor widening, a median barrier will be added to the roadway in an effort to eliminate left turn traffic movements which are primarily unrestricted through this portion of the corridor. Several intersection improvements are proposed for the project to allow for controlled left turn movements in the corridor. "Jug handle" type intersections are proposed approximately every 0.7 miles through the length of this corridor to allow traffic access to opposite sides of the roadway and provide turn-around opportunities. Improvements to the existing roadway drainage network will also be implemented to adequately move water away from the roadway. The total disturbed area for the project is approximately 54 acres. Project mapping in Appendix A of this report includes a Project Location Map, National Wetland Inventory Maps, and Aquatic Resource Maps. The Aquatic Resource Maps include Markosky's aquatic resource findings, mapped soil units, sample points, and photograph locations.

An analysis of the Pennsylvania Natural Heritage Program (PNHP) Pennsylvania Natural Diversity Inventory (PNDI) on-line environmental review tool on 4/19/23 (PNDI-692744) indicates no potential project conflicts and no further review is required.

The project area is located within the Jacks Run and Brush Creek watersheds. According to 25 Pa Code § 93.9v (Water Quality Standards – Drainage List V), Jacks Run is managed for High Quality-Trout Stocking (HQ-TSF) and Brush Creek is managed for Trout Stocking (TSF). Neither Jacks Run nor Brush Creek are listed as either Stocked Trout Water or Wild Trout Waters by the Pennsylvania Fish and Boat Commission (PFBC).

BACKGROUND INFORMATION FINDINGS

NATIONAL WETLAND INVENTORY (NWI)

A review of the United States Fish and Wildlife Service's Wetlands Mapper, NWI-V2 mapping determined that two NWI wetland systems are present within the project study area and are depicted on the National Wetland Inventory Maps in Appendix A. Both of these resources are identified as a riverine, unknown perennial, unconsolidated bottom, permanently flooded (R5UBH) type wetlands.

WEB SOIL SURVEY

Review of the USDA Web Soil Survey database for Allegheny and Westmoreland Counties, Pennsylvania identified seventeen (17) soil map units within the study area. Table 1 identifies the soil map units within the project study area for Allegheny County (one of which is identified as hydric soils), and Table 2 identifies the soil map units within the project study area for Westmoreland County (two of which are identified as hydric soils). Project study area soil map unit boundaries can be found on the Aquatic Resource Maps in Appendix A.

Soil Map Symbol	Soil Map Unit Name	Hydric Soil	Hydric Rating
ErC	Ernest silt loam, 8 to 15 percent slopes	Yes	5
GIC	Gilpin silt loam, 8 to 15 percent slopes	No	-
GSF	Gilpin, Weikert, Culleoka channery silt loams and 25 to 80 percent slopes	No	-
SmF	Strip mines, 25 to 75 percent slopes	No	-
UCB	Urban land-Culleoka complex, gently sloping	No	-
UCD	Urban land-Culleoka complex, moderately steep	No	-
UCE	Urban land-Culleoka complex, steep	No	-

TABLE 1: Allegheny County Soils Project Area Soil Map Units

TABLE 2: Westmoreland County Soils Project Area Soil Map Units

Soil Map Symbol	Soil Map Unit Name	Hydric Soil	Hydric Rating
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Yes	1
ErC	Ernest silt loam, 8 to 15 percent slopes	Yes	5
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	No	-
GcD	Gilpin channery silt loam, 15 to 25 percent slopes	No	-
UeB	Urban land-Culleoka complex, 0 to 8 percent slopes	No	-
UeD	Urban land-Culleoka complex, 8 to 25 percent slopes	No	-
UgB	Urban land-Gilpin complex, 0 to 8 percent slopes	No	-
UgD	Urban land-Gilpin complex, 8 to 25 percent slopes	No	-

Soil Map Symbol	Soil Map Unit Name	Hydric Soil	Hydric Rating
UhD	Urban land-Guernsey complex, 8 to 25 percent slopes	No	-
UwD	Urban land-Wharton complex, 8 to 25 percent slopes	No	-
WrC	Wharton silt loam, 8 to 15 percent slopes	No	-

WETLAND IDENTIFICATION AND DELINEATION METHODOLOGY

The wetland identification and delineation was conducted in accordance with the methodology described in the US Army Corps of Engineers (USACE) *Corps of Engineers Wetland Delineation Manual* (Technical Report Y-87-1) and the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Version 2.0). The wetlands were classified utilizing the USFWS *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979).

WETLAND IDENTIFICATION FINDINGS

Utilizing the methodology described above, four (4) palustrine wetlands were identified and delineated within the project study area. All four (4) of these wetlands are classified as palustrine emergent (PEM) wetlands. The location of all wetlands within the project area can be found on the Aquatic Resource Maps included in Appendix A of this report. Refer to Appendix B for dataforms containing detailed information about each resource and refer to Appendix C to review photos of each resource.

<u>WL3</u> is classified as a PEM wetland located entirely within the project area and is approximately 0.03 acres in size. The primary wetland hydrology indicator observed within this wetland is saturation. Wetland hydrology is present within WL3.

Dominant vegetation observed within this wetland includes quaking aspen (*Populus tremuloides*, FAC) and jewelweed (*Impatiens capensis*, FACW). The vegetation observed within this wetland meets the Dominance Test. Hydrophytic vegetation is dominant within this wetland.

The soil test pit identified two soil horizons. The first soil horizon from 0-8 inches had a matrix color of 2.5Y 3/1 (80%) with redox features the color of 10YR 4/6 (20%) and a clay loam texture. The second soil horizon from 8-18 inches had a matrix color of 10YR 4/1 (90%) with redox features a color of 10YR 4/4 (10%) and a clay loam texture. The soil matrix colors and features indicate this is a hydric soil. Hydric soil indicators observed within this wetland meet the description of *Indicator F3: Depleted Matrix.*

<u>WL4</u> is classified as a PEM wetland located entirely within the project study area and is approximately 0.09 acres in size. WL4 contained an upland inclusion of approximately 0.01 acres. The primary wetland hydrology indicator observed within this wetland is surface water with drainage patterns as a secondary indicator. Wetland hydrology is present within WL4.

Dominant vegetation observed within this wetland includes silky dogwood (*Cornus amomum*, FACW) and broadleaf cattail (*Typha latifolia*, OBL). The vegetation observed within this wetland meets the Rapid Test for Hydrophytic Vegetation. Hydrophytic vegetation is dominant within this wetland.

The soil test pit identified two soil horizons. The first soil horizon from 0-2 inches had a matrix color of 5Y 3/1 (80%) with redox features the color of 7.5YR 4/4 (20%) and a silt loam texture. The second soil horizon from 2-18 inches had a matrix color of 10YR 5/1 (70%) with redox features the color of 10YR 5/6 (30%) and a clay loam texture. The soil matrix colors and features indicate this is a hydric soil. Hydric soil indicators observed within this wetland meet the description of *Indicator F3: Depleted Matrix*.

<u>WL5</u> is classified as a PEM wetland located entirely within the project study area and is approximately 0.002 acres in size. The primary wetland hydrology indicator observed within this wetland is saturation. Wetland hydrology is present within WL5.

Dominant vegetation observed within this wetland include broadleaf cattail. The vegetation observed within this wetland meets the Rapid Test for Hydrophytic Vegetation. Hydrophytic vegetation is dominant within this wetland.

The soil test pit identified one soil horizon. The soil horizon from 0-16 inches had a matrix color of 10YR 2/2 (95%) with redox features the color of 5YR 4/6 (5%) and a silt loam texture. The soil matrix colors and features indicate this is a hydric soil. Hydric soil indicators observed within this wetland meet the description of *Indicator F6: Redox Dark Surface*. A restrictive layer of rock was reached at 16 inches.

<u>WL6</u> is classified as a PEM wetland located entirely within the project study area and is approximately 0.04 acres in size. Primary wetland hydrology indicators observed within this wetland include surface water and saturation with drainage patterns as a secondary indicator. Wetland hydrology is present within WL6.

Dominant vegetation observed within this wetland includes silky willow (*Salix sericea*, OBL) and broadleaf cattail. The vegetation observed within this wetland meets the Rapid Test for Hydrophytic Vegetation. Hydrophytic vegetation is dominant within this wetland.

The soil test pit identified one soil horizon. The soil horizon from 0-14 inches had a matrix color of 10YR 5/1 (80%) with redox features the color of 7.5YR 4/4 (20%) and a clay loam texture. The soil matrix colors and features indicate this is a hydric soil. Hydric soil indicators observed within this wetland meet the description of *Indicator F3: Depleted Matrix*. A restrictive layer of rock was reached at 14 inches.

SURFACE WATER IDENTIFICATION AND DELINEATION METHODOLOGY

The project study area surface waters were classified as either ephemeral, intermittent, or perennial according to the definitions set forth in 25 PA Code § 87.1. Field investigations were undertaken to document the physical characteristics of the evaluated surface waters and the presence or absence of fish species. A cursory characterization of the existing macroinvertebrate community was conducted by physically turning suitable in-stream substrates and identifying the benthic macroinvertebrates observed to the level of order. All macroinvertebrates were identified in the field using *Freshwater Macroinvertebrates of North America* (Peckarsky, et al, 1990). A detailed macroinvertebrate survey was not conducted for the project.

SURFACE WATER IDENTIFICATION FINDINGS

Utilizing the methodology described above, seven (7) jurisdictional watercourses were identified and investigated within the project study area. One (1) of these resources is classified as perennial, one (1) is classified as intermittent, and five (5) are classified as ephemeral. The location of all streams within the project area can be found on the Aquatic Resource Maps included in Appendix A of this report. Refer to Appendix B for dataforms containing detailed information about each resource and refer to Appendix C to review photos of each resource.

<u>UNT 1 to Jacks Run (101382)</u> is a perennial stream located on the western side of the project area. UNT 1 to Jacks Run flows in a southern direction through the project area. The bank width for UNT 1 to Jacks Run is approximately 18-feet and the channel depths are 5-feet (left descending bank) and 6-feet (right descending bank) respectively. UNT 1 to Jacks Run had a water depth of 2-inches and a water width of 3-feet at the time of investigation. The substrate in the stream consists of a mixture of cobble (60%), boulders (30%), and silt (10%) with 30% embeddedness. No macroinvertebrate orders were observed during the field view. The lack of macroinvertebrates could be attributed to assumed poor water quality by urbanization within the project area. No fin fish species were observed.

<u>UNT 2 to Jacks Run (101382)</u> is an intermittent stream located on the western side of the project area. UNT 2 to Jacks Run flows in a southeastern direction through the project area to its confluence with UNT 1 to Jacks Run. The bank width for UNT 2 to Jacks Run is approximately 2-feet and the channel depth is 3-feet. UNT 2 to Jacks Run had a water depth of 1-inch and a water width of 8-inches at the time of investigation. The substrate in the stream consists of a mixture of muck (40%), detritus (20%), gravel (20%), and silt (20%) with 5% embeddedness. No macroinvertebrate orders were observed during the field view due to the presence of abandoned mine drainage. No fin fish species were observed.

<u>UNT 6 to Jacks Run (101382)</u> is an ephemeral channel located on the western side of the project area. UNT 6 to Jacks Run flows in a southeastern direction through the project study area to its confluence with UNT 7 to Jacks Run. The bank width for UNT 6 to Jacks Run is approximately 8-feet and the channel depths are 4-feet (left descending bank) and 8-feet (right descending bank) respectively. UNT 6 to Jacks Run contained pooled water approximately 30 yards downstream of the project area boundary at time of investigation. The substrate in the channel consists of a mixture of detritus (25%), gravel (25%), sand (20%), cobble (15%), and silt (15%) with 10% embeddedness. No macroinvertebrate orders were observed during the field view. No fin fish species were observed.

<u>UNT 7 to Jacks Run (101382)</u> is an ephemeral channel located on the western side of the project area. UNT 7 to Jacks Run flows in a southwestern direction through the project area. The bank width for UNT 7 to Jacks Run is approximately 6-feet and the channel depth is 6-feet. UNT 7 to Jacks Run did not have water present during the time of investigation. The substrate in the channel consists of a mixture of cobble (80%), boulders (10%), and detritus (10%) with 20% embeddedness. No macroinvertebrate orders were observed during the field view. No fin fish species were observed.

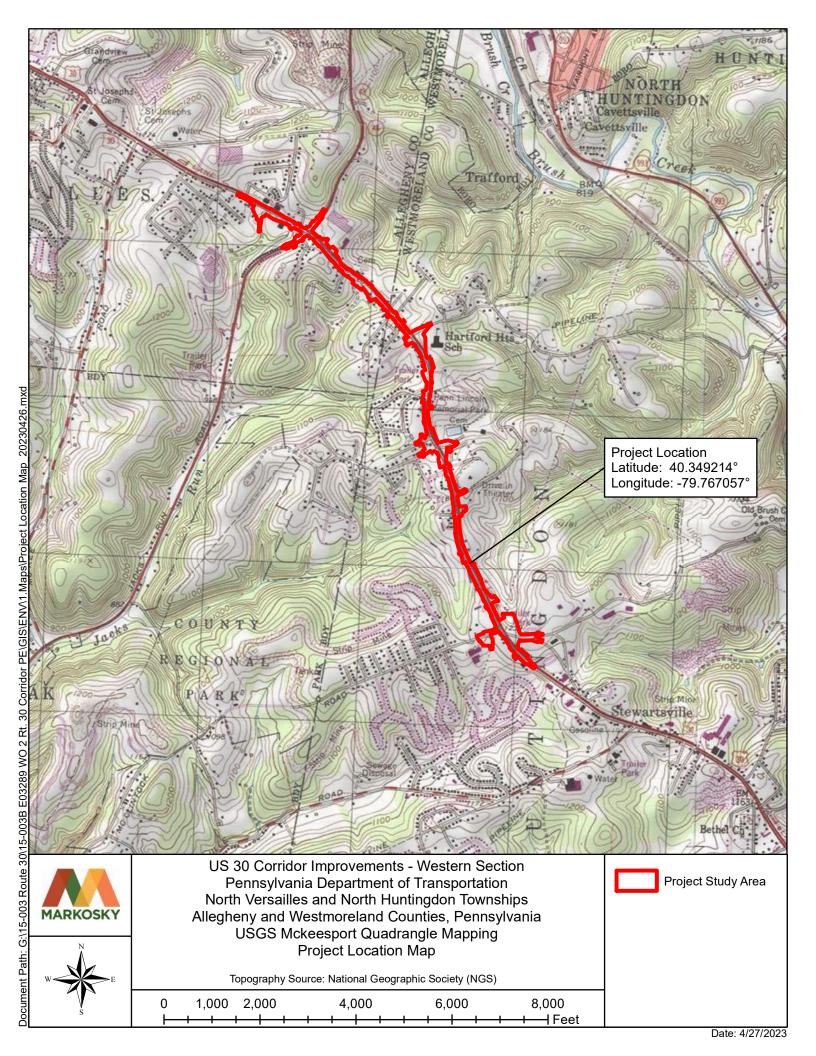
<u>UNT 1 to Brush Creek (21275)</u> is an ephemeral channel located on the eastern side of the project area. UNT 1 to Brush Creek flows in a northern direction through the project area. The bank width for UNT 1 to Brush Creek is approximately 3-feet and the channel depth is 2-feet. UNT 1 to Brush Creek did not have water present at the time of investigation. The substrate in the channel consists of a mixture of gravel (40%), cobble (20%), sand (15%), silt (15%), boulders (5%), and detritus (5%) with 20% embeddedness. No macroinvertebrate orders were observed during the field view. No fin fish species were observed.

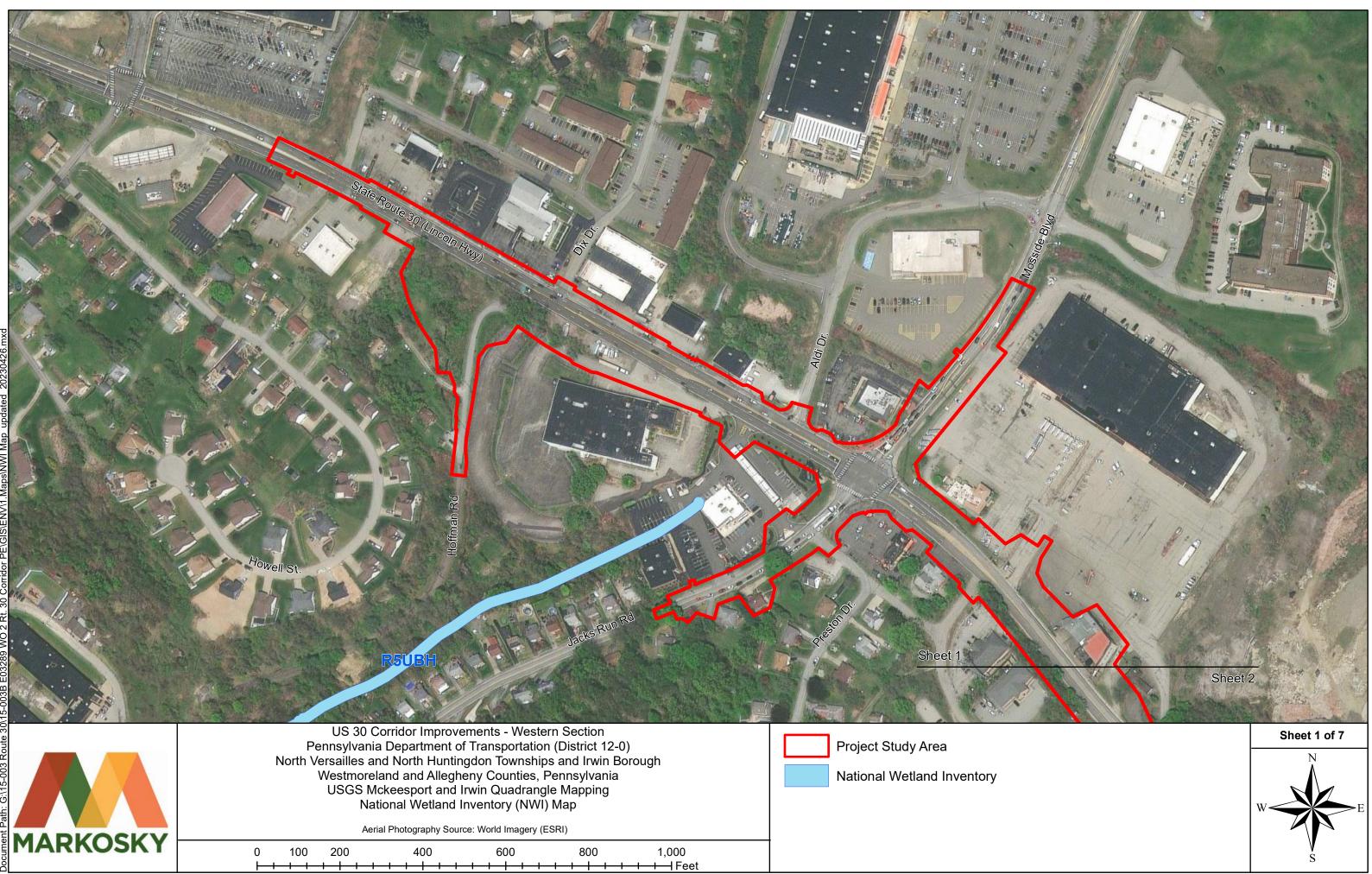
<u>UNT 2 to Brush Creek (21275)</u> is an ephemeral channel located on the eastern side of the project area. UNT 2 to Brush Creek flows in a northeastern direction through the project area and flows into Wetland WL-4. The bank width for UNT 2 to Brush Creek is approximately 12-feet and the channel depths are 6-feet (left descending bank) and 4-feet (right descending bank) respectively. UNT 2 to Brush Creek did not have water present at the time of investigation. The substrate in the channel consists of a mixture of cobble (40%), detritus (20%), gravel (20%), and sand (20%) with 10% embeddedness. No macroinvertebrate orders were observed during the field view. No fin fish species were observed.

<u>UNT 3 to Brush Creek (21275)</u> is an ephemeral channel located on the eastern side of the project area. UNT 3 to Brush Creek flows in a northeastern direction on the eastern edge of the project area. The bank width for UNT 3 to Brush Creek is approximately 3-feet and the channel depth is 2-feet. UNT 3 to Brush Creek had a water depth of 2-inches and a water width of 2-feet at the time of investigation. The substrate in the channel consists of a mixture of cobble (30%), boulders (20%), clay (20%), gravel (20%), and sand (10%) with 20% embeddedness. No macroinvertebrate orders were observed during the field view. No fin fish species were observed.

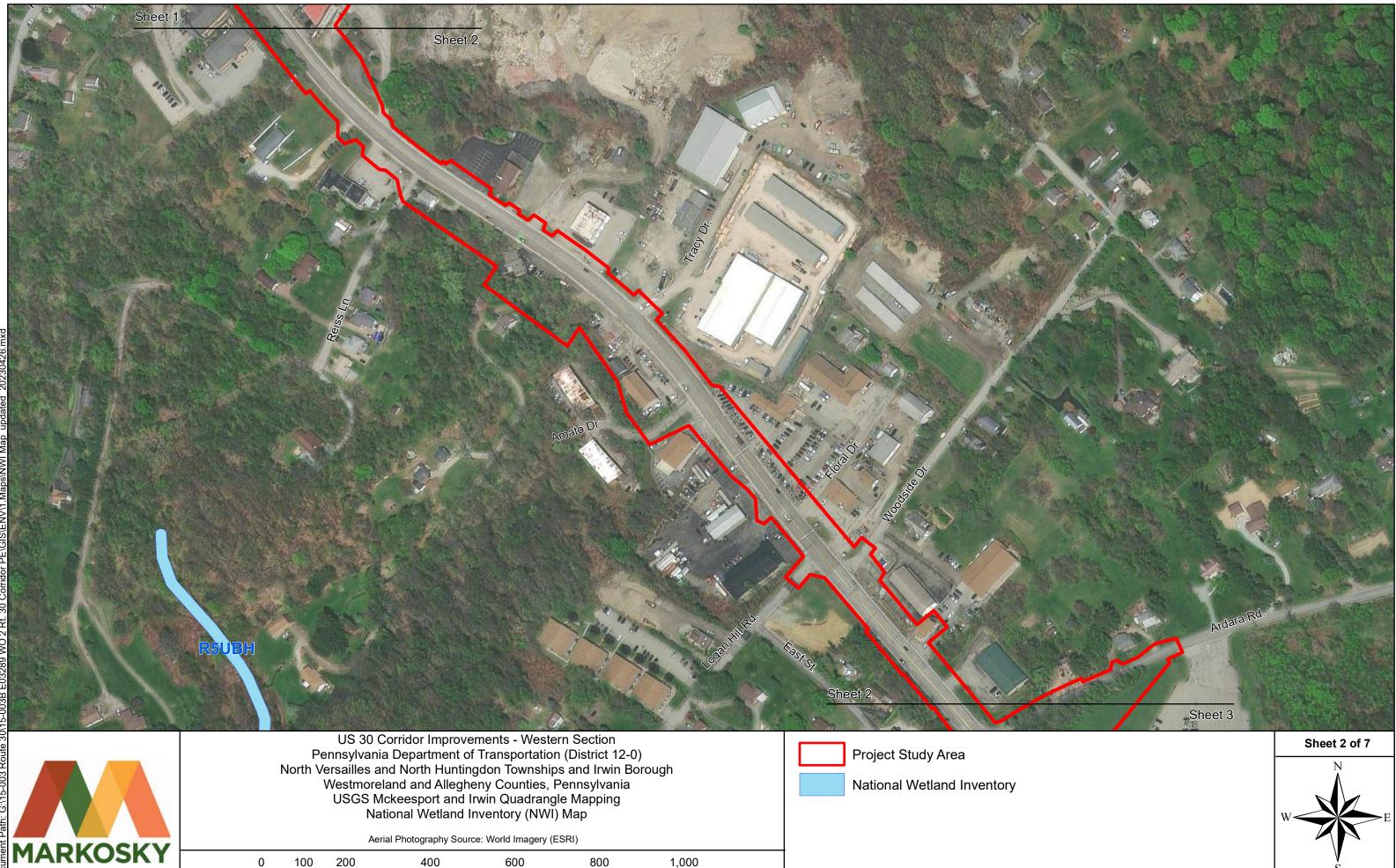
US 30 Corridor Improvements - Western Section

APPENDIX A Project Mapping

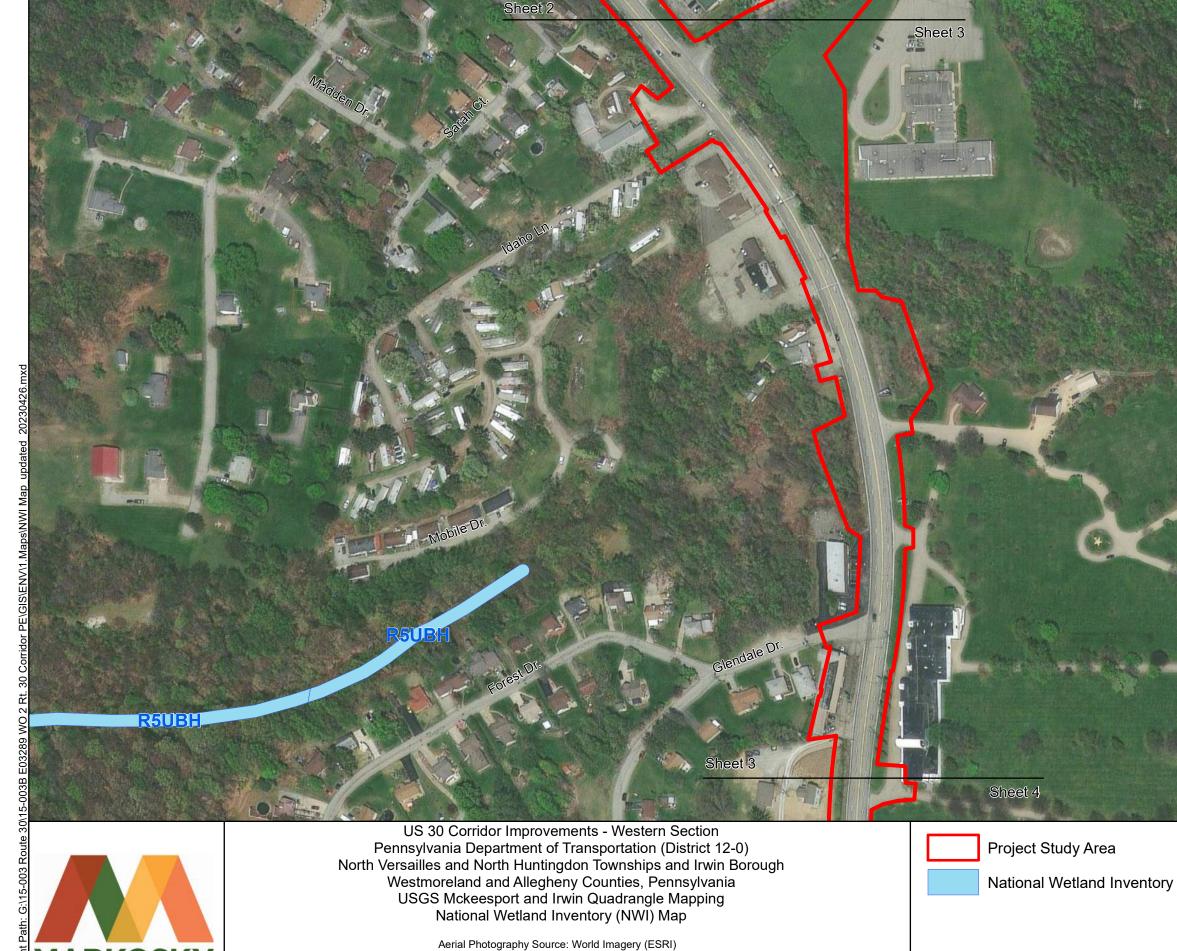




Date: 4/27/2023



1,000



MARKOSKY

200 800 0 100 400 600 1,000



Sheet 3 of 7



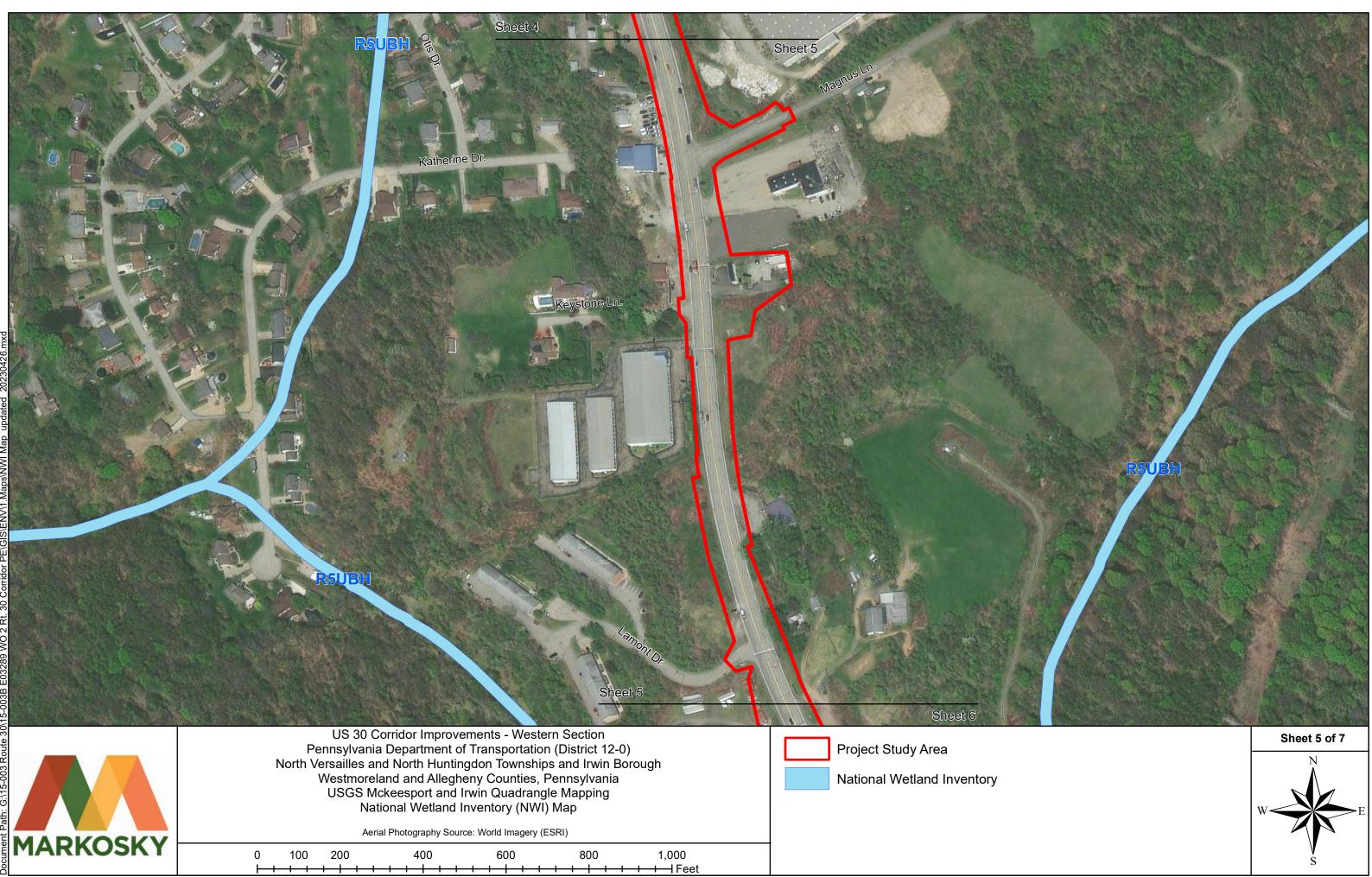


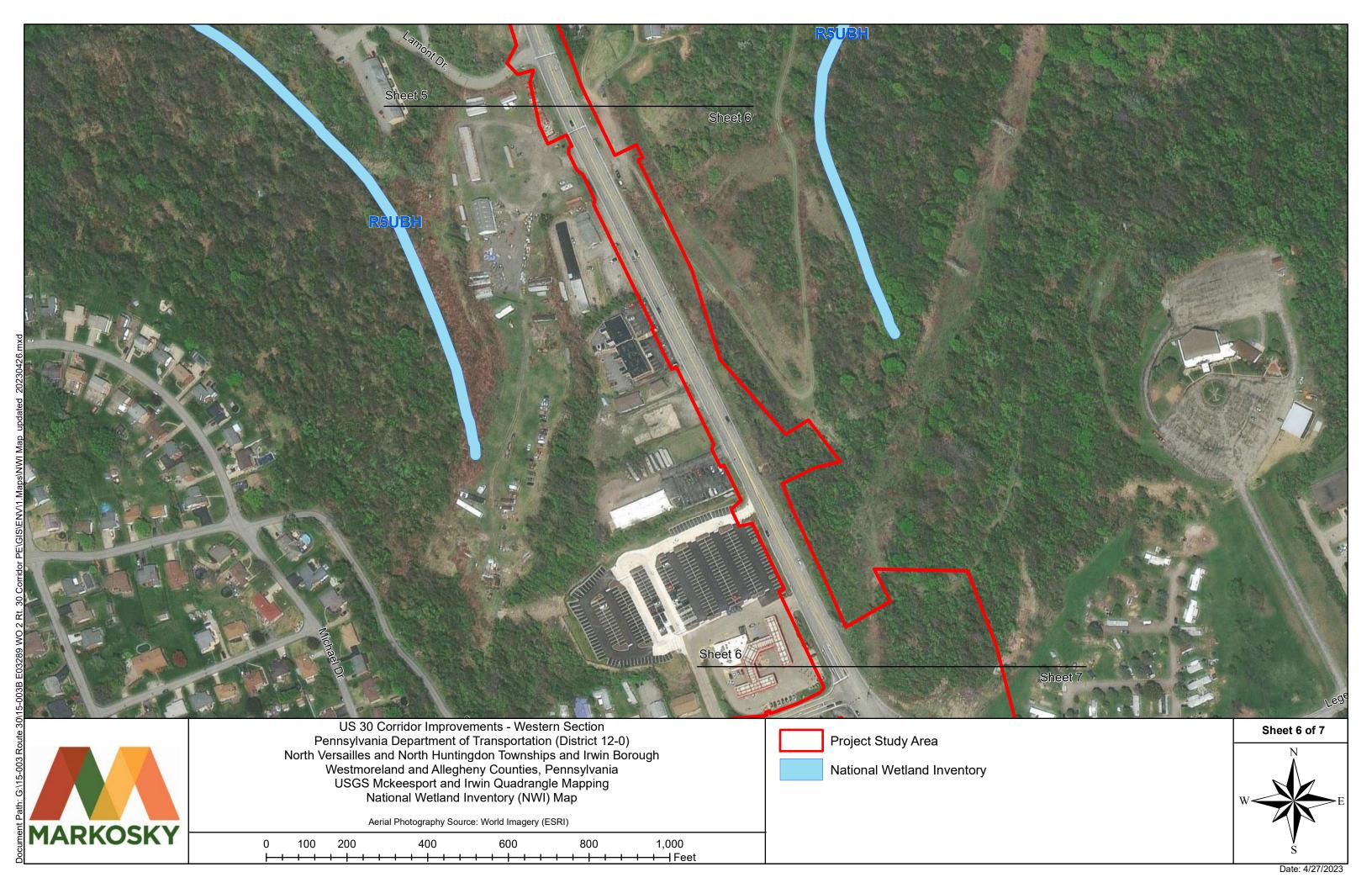
MARKOSKY

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Date: 4/27/2023







Westmoreland and Allegheny Counties, Pennsylvania USGS Mckeesport and Irwin Quadrangle Mapping National Wetland Inventory (NWI) Map

Aerial Photography Source: World Imagery (ESRI)

600

400

200

0

100

800

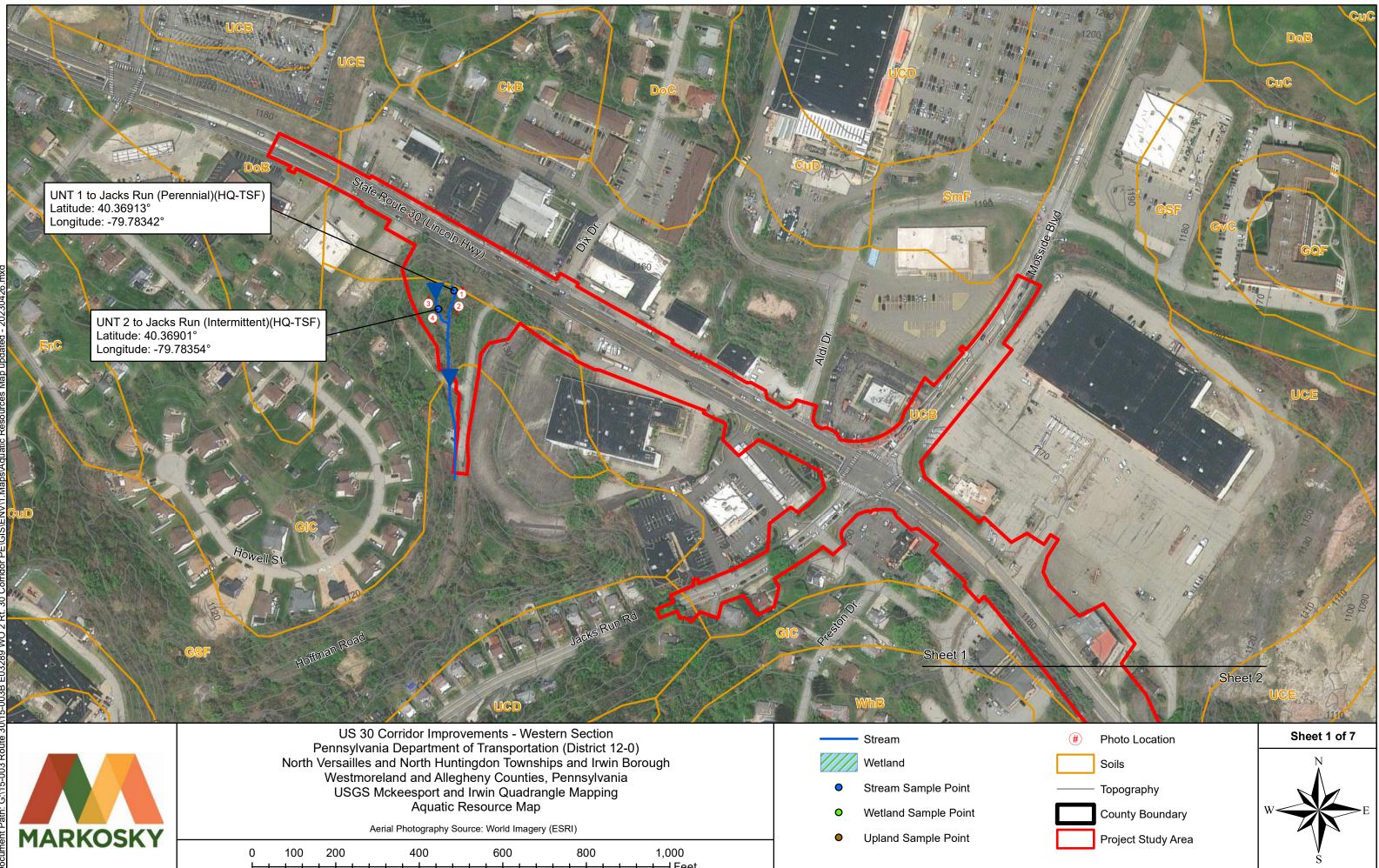
+ + + + + + + + + + + + + + + + + Feet

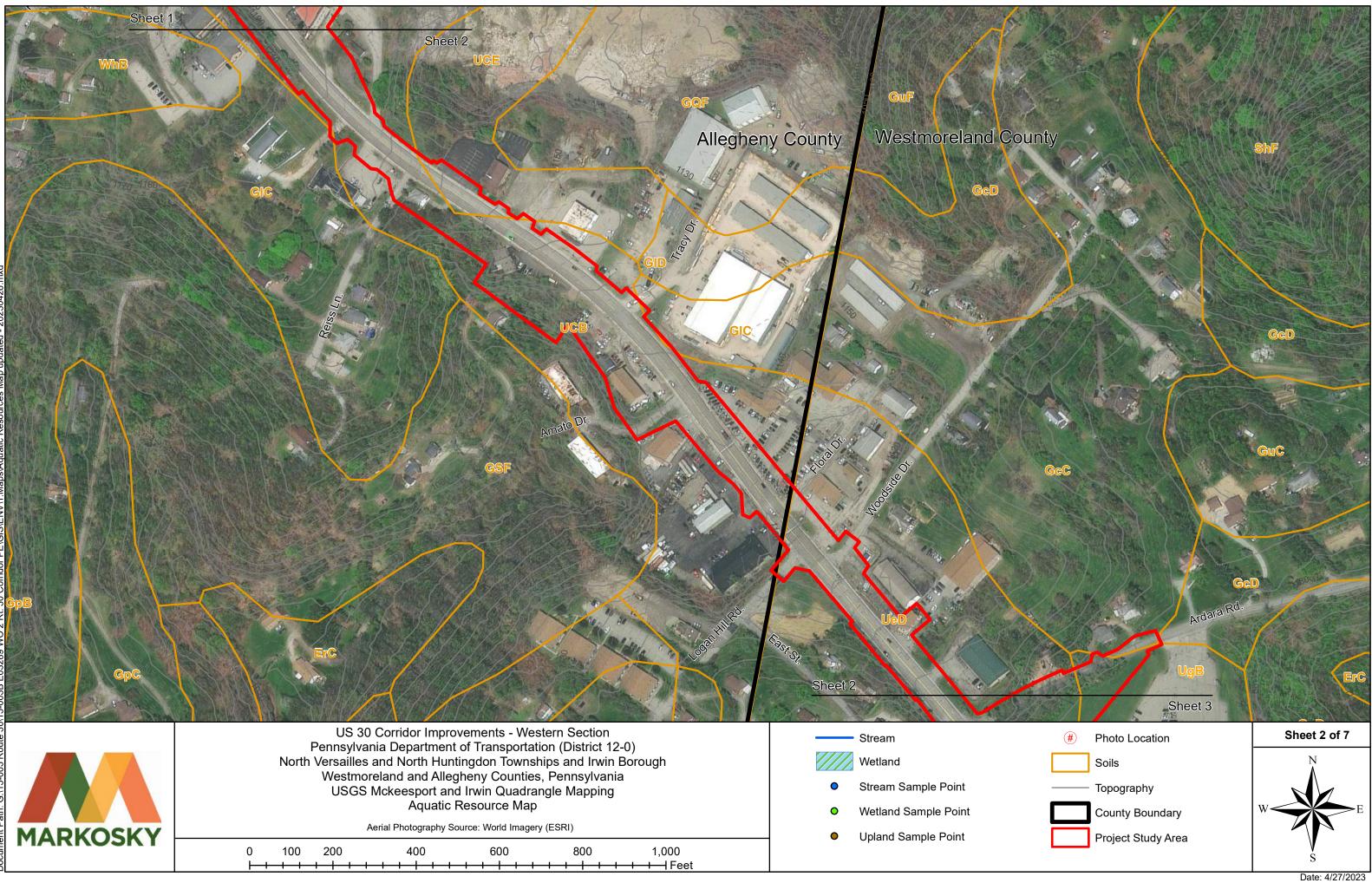
1,000

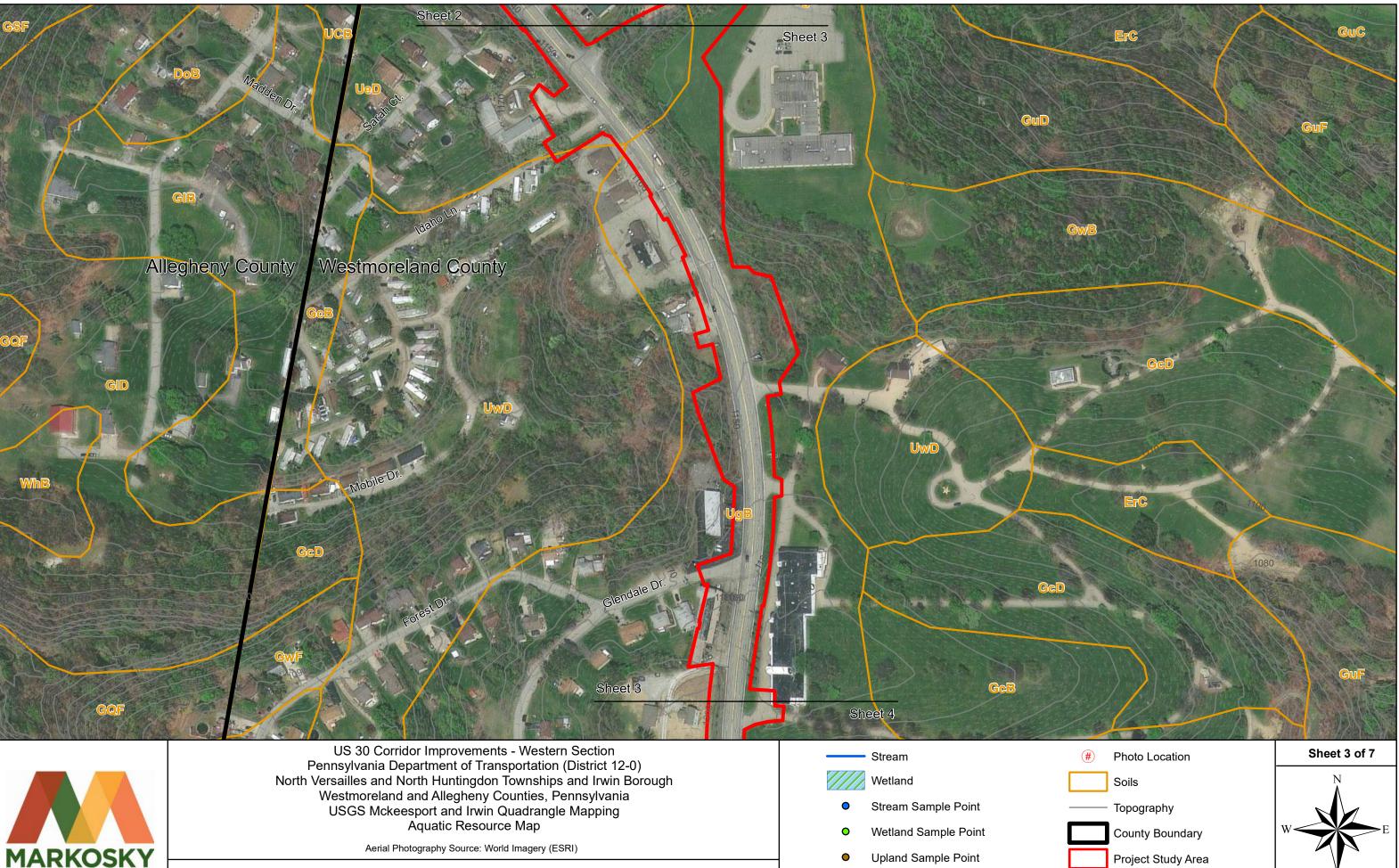
National Wetland Inventory



Date: 4/27/2023





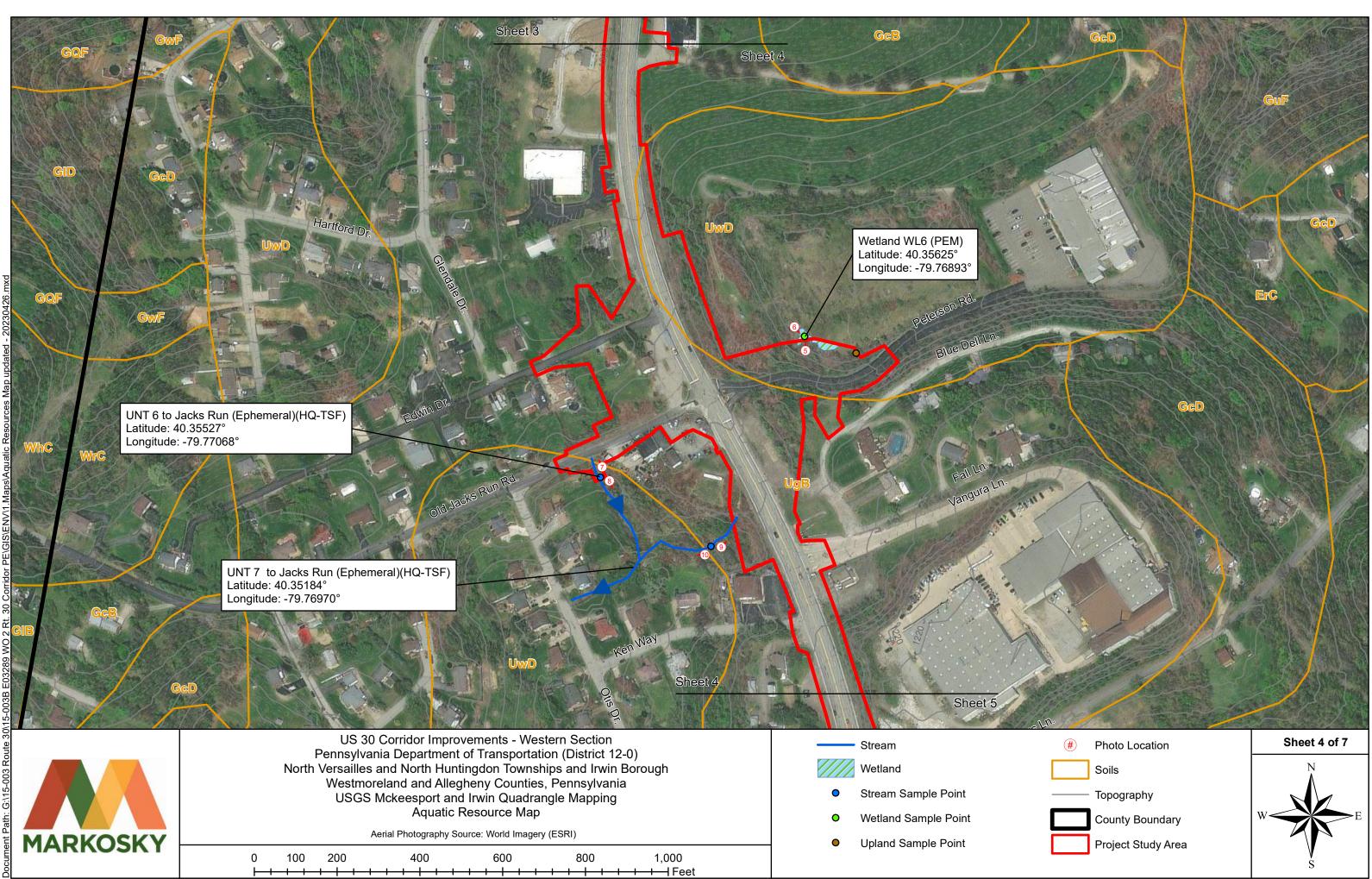




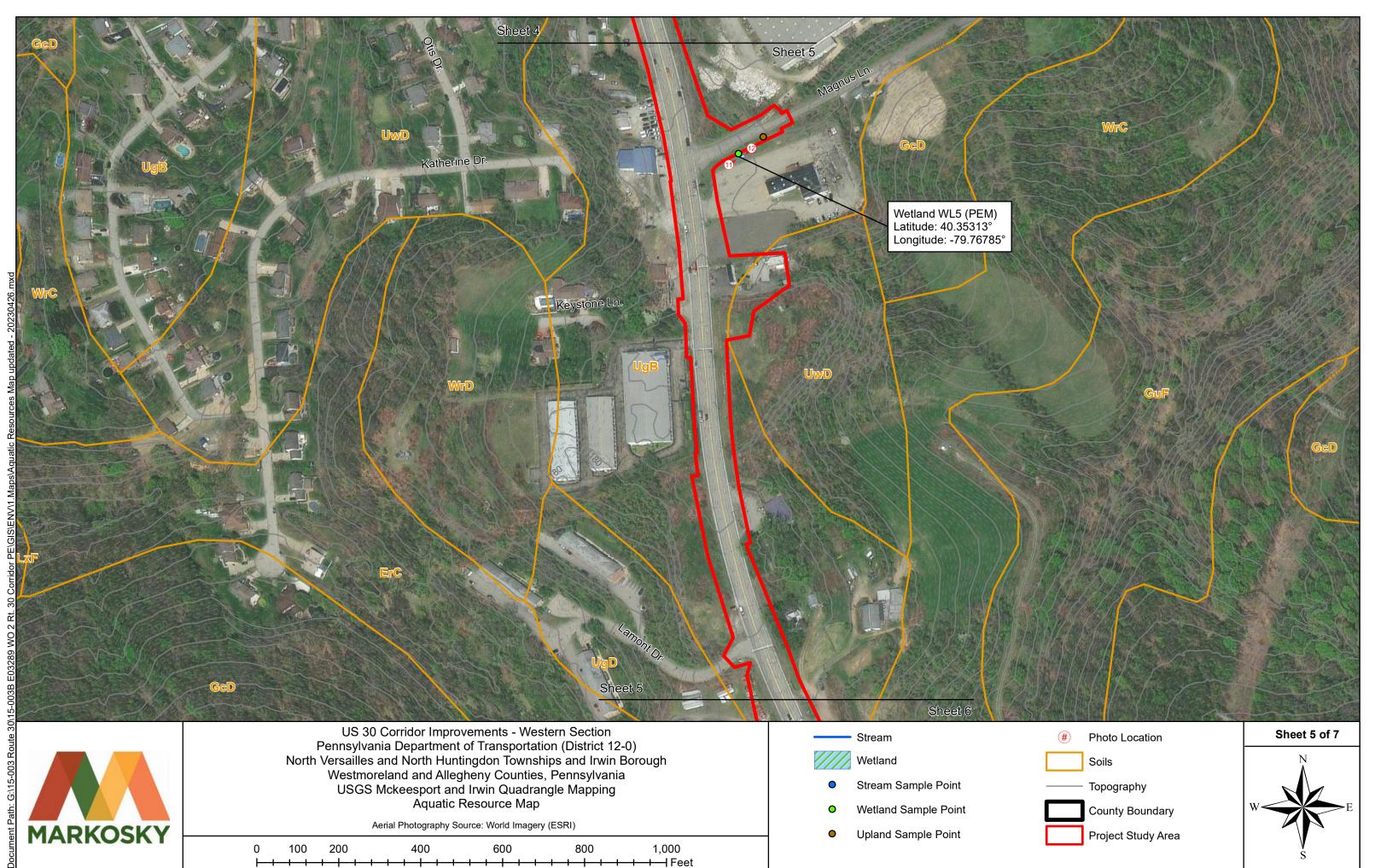
| US 30 Corridor Improvements - Western Section |
|---|
| Pennsylvania Department of Transportation (District 12-0) |
| North Versailles and North Huntingdon Townships and Irwin Borough |
| Westmoreland and Allegheny Counties, Pennsylvania |
| USGS Mckeesport and Irwin Quadrangle Mapping |
| Aquatic Resource Map |
| |

| Stream |
|---------|
| Wetland |

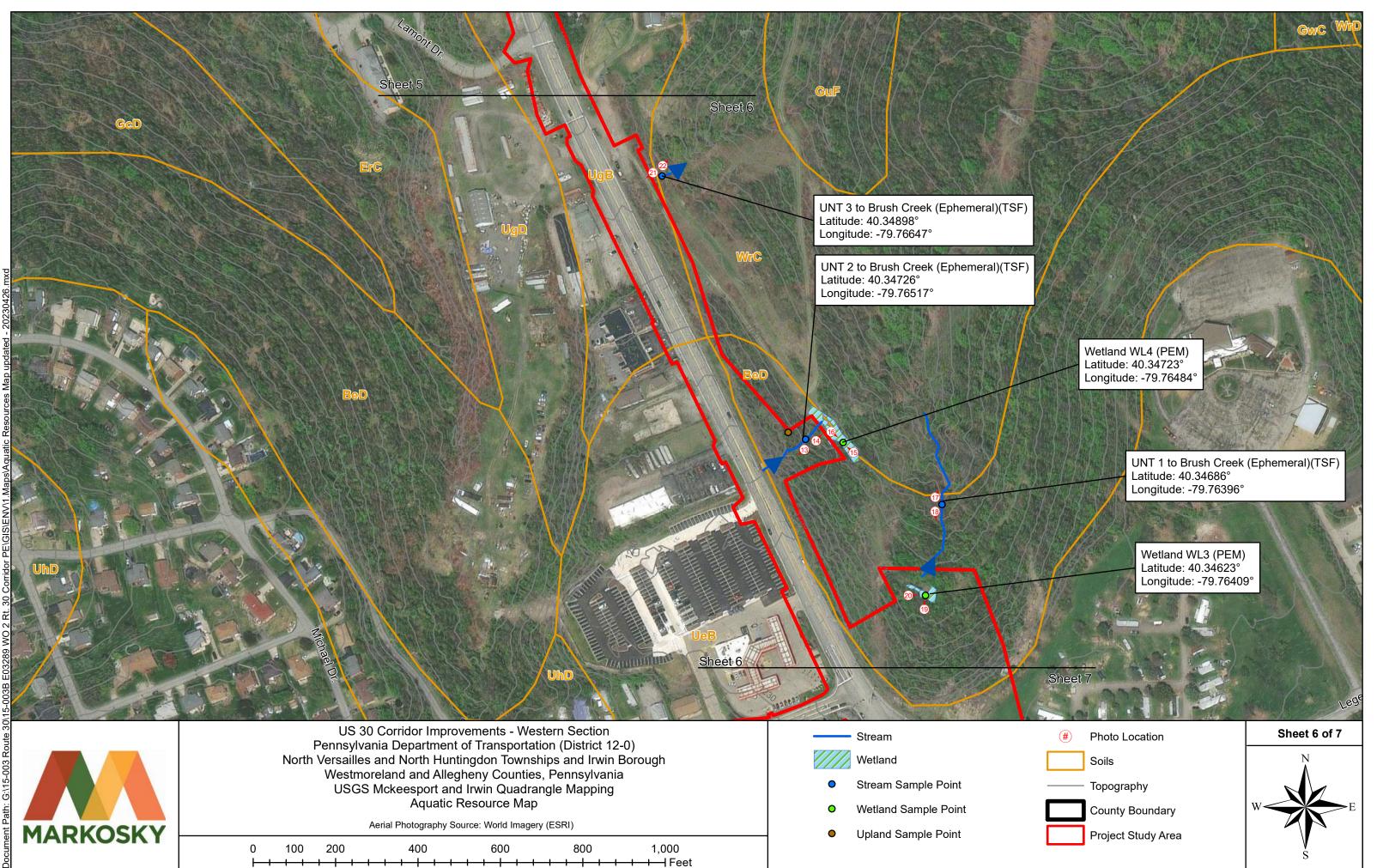
1,000



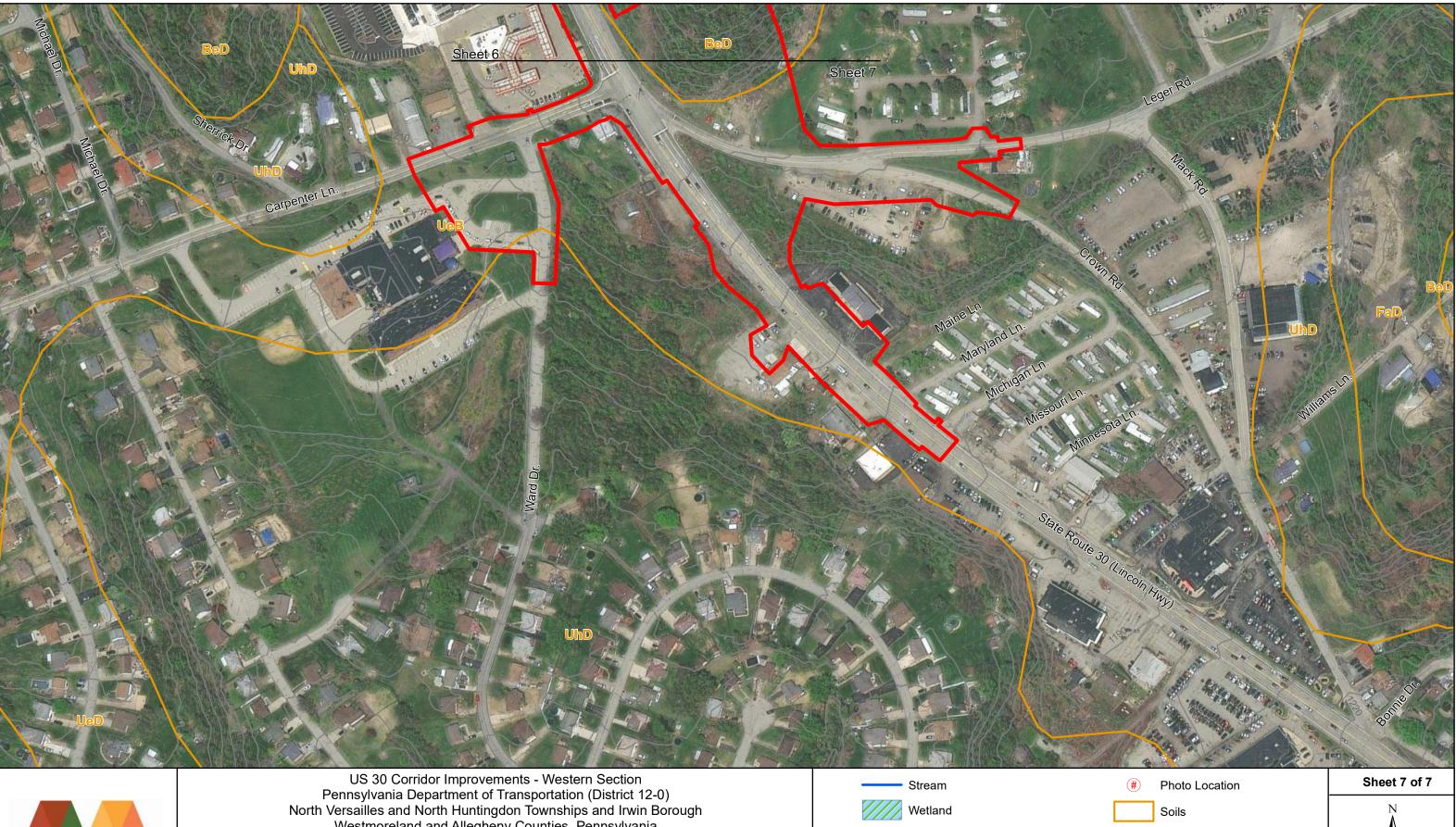
Date: 4/27/2023



Date: 4/27/2023



Date: 4/27/2023





Westmoreland and Allegheny Counties, Pennsylvania USGS Mckeesport and Irwin Quadrangle Mapping Aquatic Resource Map

Aerial Photography Source: World Imagery (ESRI)

Stream Sample Point 0 Wetland Sample Point 0



200 100 600 800 1,000 0 400





Date: 4/27/2023

US 30 Corridor Improvements - Western Section

APPENDIX B Wetland and Stream Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

| Project/Site: US 30 Corridor Improvements Project Applicant/Owner: PennDOT Engineering District 12-0 Investigator(s): ASB, ALK Landform (hillslope, terrace, etc. Depression Slope (%): 8% Lat 40.34623 Subregion (LRR or MLRA): LRR: East & Central Farming & Forest Region Soil Map Unit Name: BeD: Bethesda very channery silt loam, 8 to 25% slopes Are climatic / hydrologic conditions on the site typical for this time of year? Are Vegetation N Soil N Hydrology N significantly disturbed Are Vegetation N Soil N Hydrology N Are Vegetation N Soil N Hydrology N Are Vegetation N Soil N Hydrology N naturally problematic? | ? (if needed explain any answers in Remarks) |
|--|---|
| SUMMARY OF FINDINGS – Attach site map showing sampling point locations, Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Ves X No | Is the Sampled Area within a Wetland? Yes X No |
| HYDROLOGY | |
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) True Aquatic Plants (I High Water Table (A2) Hydrogen Sulfide Odd | or (C1) Drainage Patterns (B10) es on Living Roots (C3) Moss Trim Lines (B16) d Iron (C4) Dry-Season Water Table (C2) in in Tilled Soils (C6) Crayfish Burrows (C8) C7) Saturation Visible on Aerial Imagery (C9) |
| Field Observations Surface Water Present? Yes NoX Depth (inches) Water Table Present? Yes No Depth (inches) Saturation Present? Yes No Depth (inches) Including capillary fringe) | - Wetland Hydrology
- Present Yes X No
rface |
| Remarks: | Eastern Mountains and Piedmont – Version 2.0 |

VEGETATION – Use scientific names of plants.

Sampling Point WL3

| Tree Stratum (Plot size: <u>30'</u>) | Absolute %
Cover | Dominant
Species? | Indicator
Status | Dominance Test worksheet:
Number of Dominant Species That Are |
|---|---------------------|--------------------------------|---------------------|--|
| 1. Populus tremuloides – quaking aspen | 5 | Yes | FAC | OBL, FACW, or FAC: 2 (A) |
| 2 | | | | Total Number of Dominant Species |
| 3 | | | | Across All Strata: 2 (B) |
| 4 | | | | Percent of Dominant Species |
| | | | | That Are OBL, FACW, or FAC: 100% (A/B) |
| 5
6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| | 5 | = Total Cover | | OBL species x 1 = |
| 50% of Total Cover: | 2.5 | | 1 | FACW species x 2 = |
| | 2.0 | | ·! | FAC species x 3 = |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | FACU species x 4 = |
| 1 | | | | UPL speciesx 5 = |
| 2 | | | | Column Totals (A) (B) |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | Prevalence Index = B/A = |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | X 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ |
| 10 | | | | 4 - Morphological Adaptations ¹ |
| | 0 | = Total Cover | | (Provide supporting data in Remarks or on a |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | separate sheet) |
| Herb Stratum (Plot size: 5') | | | | Problematic Hydrophytic Vegetation ¹ |
| 1. Impatiens capensis – jewelweed | 40 | Yes | FACW | (Explain) |
| 2. Gramineae species - grass species* | 20* | - | | |
| 3. Solidago gigantea – late goldenrod | 5 | No | FACW | ¹ Indicators of hydric soil and wetland hydrology must be |
| 4. Typha latifolia - broadleaf cattail | 5 | No | OBL | present, unless disturbed or problematic. |
| 5. Rosa multiflora - multiflora rose | 5 | No | FACU | Definitions of Vegetation Strata: |
| 6 | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in |
| 7 | | | | diameter at breast height (DBH), regardless of height. |
| 8 | | | | Sapling/shrub - Woody plants, excluding vines, less than 3 in. |
| 9 | | | | DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | | | | Herb - All herbaceous (non-woody) plants, regardless of size, |
| 11. | | | | and woody plants less than 3.28 ft tall. |
| 12. | | | | Woody vines – All woody vines greater than 3.28 ft in height. |
| | 55 | = Total Cover | | |
| 50% of Total Cover: | 27.5 | 20% of Total Cover: | 11 | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | Hydrophytic |
| 6 | | | | Vegetation |
| | 0 | = Total Cover | | Present? Yes X No |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | |
| Pomarke: (Include photo pumbare bare or on a consiste | shoot \ | | | |
| Remarks: (Include photo numbers here or on a separate | sneet.) | | | |
| *Since the Gramineae species could not be properly identified | ed due to lack of | distinguishing characteristics | s, it was exclud | ed from the Hydrophytic Vegetation Tests. |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

SOIL

Γ

 Sampling Point
 WL3

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

 Matrix Color
 Redox Features

 (minicip)
 2(minicip)

٦

| Depth | Matrix Color | | Rede | ox Features | | | · · · · · · · · · · · · · · · · · · · | |
|---|----------------------|-------------|------------------------|-----------------------|-------------------|------------------|---------------------------------------|---|
| (inches) | (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 2.5Y 3/1 | 80 | 10YR 4/6 | 20 | С | Μ | Clay Loam | |
| 8-18 | 10YR 4/1 | 90 | 10YR 4/4 | 10 | С | М | Clay Loam | Small Rocks |
| | | | | | | | | |
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| | | | | | | | | |
| 17 | | DM Deduc | | | 21 | | Dens Linin v M Matri | |
| | tration, D=Depletion | , RM=Reduce | ed Matrix, MS=Maskee | a Sand Grains | s Loc | cation: PL= | Pore Lining, M=Matri | - |
| Hydric Soil Indicators
Histosol (A1) | | Dark | Surface (S7) | | | | | blematic Hydric Soils ³ :
(10) (MLRA 147) |
| Histic Epipedon (A2) | | | value Below Surface (| S8) (MI RA 1 | 47 148) | | Coast Prairie | |
| Black Histic (A3) | | | Dark Surface (S9) (M | | | | (MLRA 14 | |
| Hydrogen Sulfide (A4) | | | ny Gleyed Matrix (F2) | | ~) | | - | odplain Soils (F19) |
| Stratified Layers (A5) | | | leted Matrix (F3) | | | | (MLRA 1 | |
| 2 cm Muck (A10) (LRR | N) | | ox Dark Surface (F6) | | | | • | Dark Surface (TF12) |
| Depleted Below Dark Su | | | leted Dark Surface (F | 7) | | | | n in Remarks) |
| Thick Dark Surface (A12 | . , | · | ox Depressions (F8) | , | | | 、 . | , |
| Sandy Mucky Mineral (S | | | Manganese Masses (| F12) (LRR N , | | | | |
| (LRR N, MLRA 147, 14 | 8) | | RA 136) | | | | | |
| Sandy Gleyed Matrix (S | 4) | | oric Surface (F13) (ML | .RA 136, 122) | | | | of hydrophytic vegetation |
| Sandy Redox (S5) | | Pied | mont Floodplain Soils | (F19) (MLRA | 148) | | | I hydrology must be
ess disturbed or |
| Stripped Matrix (S6) | | Red | Parent Material (F21) | (MLRA127,14 | 17) | | problematic | |
| | | | | | | | | |
| Restrictive Layer (if observed) | | | | | | | | |
| Type <u>:</u> | | | | | | | | |
| Donth (inchor): | | | | | | | | |
| Depth (inches): | | | | | Hvdric S | Soil Presen | t? Yes <u>X</u> | No |
| | | | | | | | | |
| Remarks: | | | | | | | | |
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WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

| Project/Site: US 30 Corridor Improvements Project | City/County: Westmoreland Sampling Date: 12.6.19 | | | | |
|---|---|--|--|--|--|
| Applicant/Owner: PennDOT Engineering District 12-0 | State: Pennsylvania Sampling Point: WL4 | | | | |
| Investigator(s): ASB, ALK | Section, Township, Range: North Huntington Township | | | | |
| Landform (hillslope, terrace, etc. Hillslope | Local relief (concave, convex, none): concave | | | | |
| Slope (%): 15% Lat 40.34723° | Long: -79.76484° | | | | |
| Subregion (LRR or MLRA): LRR: East & Central Farming & Forest Region | Datum: North American Datum 1983 (NAD 83) | | | | |
| Soil Map Unit Name: BeD, WrC | NWI classification: <u>PEM</u> | | | | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) | | | | |
| Are Vegetation <u>N</u> Soil <u>N</u> Hydrology <u>N</u> significantly disturbed | ed? Are "Normal Circumstances" present? Yes X No | | | | |
| Are Vegetation <u>N</u> Soil <u>N</u> Hydrology <u>N</u> naturally problemati | ic? (if needed explain any answers in Remarks) | | | | |
| SUMMARY OF FINDINGS – Attach site map showing sampling point location | is, transects, important features, etc | | | | |
| Hydrophytic Vegetation Present? Yes X No | In the Sempled Area | | | | |
| Hydric Soil Present? Yes X No | Is the Sampled Area VesX No | | | | |
| Wetland Hydrology Present? Yes X No | | | | | |
| Remarks: | | | | | |
| *Tram road runs through wetland | | | | | |
| *Small upland inclusion present. | | | | | |
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| HYDROLOGY | | | | | |
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required) | | | | |
| Primary Indicators (minimum of one is required; check all that apply) | Surface Soil Cracks (B6) | | | | |
| X Surface Water (A1) True Aquatic Plants | s (B14) Sparsely Vegetated Concave Surface (B8) | | | | |
| High Water Table (A2) Hydrogen Sulfide O | dor (C1) X Drainage Patterns (B10) | | | | |
| Saturation (A3) Oxidized Rhizosphe | eres on Living Roots (C3) Moss Trim Lines (B16) | | | | |
| Water Marks (B1) Presence of Reduce | | | | | |
| Sediment Deposits (B2) Recent Iron Reduct | uction in Tilled Soils (C6) Crayfish Burrows (C8) | | | | |
| Drift Deposits (B3) Thin Muck Surface | | | | | |
| Algal Mat or Crust (B4) Other (Explain in Re | | | | | |
| Iron Deposits (B5) | Geomorphic Position (D2) | | | | |
| Inundation Visible on Aerial Imagery (B7) | Shallow Aquitard (D3) | | | | |
| Water-Stained Leaves (B9) | Microtopographic Relief (D4) | | | | |
| Aquatic Fauna (B13) | FAC-Neutral Test (D5) | | | | |
| Field Observations | | | | | |
| Surface Water Present? Yes X No Depth (inches) | 4" | | | | |
| Water Table Present? Yes <u>No X</u> Depth (inches) | Wetland Hydrology | | | | |
| Saturation Present? Yes <u>No X</u> Depth (inches) | | | | | |
| (Including capillary fringe) | | | | | |
| | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous in | ispections), il available: | | | | |
| | | | | | |
| | | | | | |
| Remarks: | | | | | |
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| US Army Corps of Engineers | Eastern Mountains and Piedmont – Version 2.0 | | | | |

VEGETATION – Use scientific names of plants.

Sampling Point WL4

| | | | 1 12 4 | |
|---|---------------------|--|---------------------|--|
| Tree Stratum (Plot size: <u>30'</u>) | Absolute %
Cover | Dominant
Species? | Indicator
Status | Dominance Test worksheet:
Number of Dominant Species That Are |
| 1. | | | | OBL, FACW, or FAC: (A) |
| 2 | | | | Total Number of Dominant Species |
| 3 | | | | Across All Strata: (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| | 0 | = Total Cover | | OBL species x 1 = |
| 50% of Total Cover: | 0 | -
20% of Total Cover: | 0 | FACW species x 2 = |
| | | - | | FAC species x 3 = |
| Sapling/Shrub Stratum (Plot size: <u>15</u>) | | | | FACU speciesx 4 = |
| 1. Cornus amomum - silky dogwood | 5 | Yes | FACW | UPL species x 5 = |
| 2 | | <u> </u> | | Column Totals(A)(B) |
| 3 | | <u> </u> | | |
| 4 | | | | |
| 5 | | | | Prevalence Index = B/A = |
| 6 | | <u> </u> | | Hydrophytic Vegetation Indicators: |
| 7 | | | | X 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is $\leq 3.0^{1}$ |
| 10 | | | | 4 - Morphological Adaptations ¹ |
| 500/ of Total Cover | | = Total Cover | 4 | (Provide supporting data in Remarks or on a
separate sheet) |
| 50% of Total Cover:
Herb Stratum (Plot size: 5') | 2.5 | 20% of Total Cover: | 1 | Problematic Hydrophytic Vegetation ¹ |
| 1. Typha latifolia - broadleaf cattail | 40 | Yes | OBL | (Explain) |
| 2. Gramineae species - grass species* | 20* | - | - | (Explain) |
| 3. Juncus effusus - soft rush | 10 |
No | FACW | |
| 4. Solidago gigantea – late goldenrod | 10 | No | FACW | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5. Rosa multiflora - multiflora rose | 5 | No No | FACU | Definitions of Vegetation Strata: |
| 6 | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in |
| 7 | | <u> </u> | | diameter at breast height (DBH), regardless of height. |
| 8 | | | | Sapling/shrub - Woody plants, excluding vines, less than 3 in. |
| 9 | | | | DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | | | | Herb - All herbaceous (non-woody) plants, regardless of size. |
| 11. | | | | and woody plants less than 3.28 ft tall. |
| 12. | | | | Woody vines – All woody vines greater than 3.28 ft in height. |
| | 65 | = Total Cover | | |
| 50% of Total Cover: | 32.5 | 20% of Total Cover: | 13 | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | <u> </u> | | |
| 4 | | <u> </u> | | |
| 5 | | <u> </u> | | Hydrophytic |
| 6 | | <u> </u> | | Vegetation |
| | 0 | _= Total Cover | | Present? Yes X No |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | |
| Remarks: (Include photo numbers here or on a separate | e sheet.) | | | |
| | , | | | |
| *0: | | e mana a tatta a tata a sa sa sa sa sa | | |
| *Since the Gramineae species could not be properly identified | ea que to lack of | r distinguishing characteristics | s, it was exclude | ea from the Hydrophytic vegetation lests. |
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| SOIL | | | | | | | | Sampling Point | WL4 |
|------|---|-------------------|--------------|------------------------|---------------------|-------------------|------------------|---------------------|--|
| | Profile Description | : (Describe to th | e depth need | ded to document the | indicator or | confirm th | ne absence | of indicators). | |
| | Depth | Matrix Color | - | Redo | ox Features | | | | |
| - | (inches) | (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| _ | 0-2 | 5Y 3/1 | 80 | 7.5YR 4/4 | 20 | С | М | Silt Loam | |
| - | 2-18 | 10YR 5/1 | 70 | 10YR 5/6 | 30 | С | М | Clay Loam | |
| - | | | | | | | | , | |
| - | | | | | | | | | |
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| _ | | | | | | | | | |
| - | ¹ Turney C. Concentre | tion D Doplotion | | ad Matrix MS Maakaa | l Cond Croin | 2 2 or | | Pore Lining, M=M | otriv |
| | Hydric Soil Indicators | | | ed Matrix, MS=Masked | a Sanu Grain | S L00 | Callon. PL=F | | Problematic Hydric Soils ³ : |
| | Histosol (A1) | | Darl | < Surface (S7) | | | | | (A10) (MLRA 147) |
| - | Histic Epipedon (A2) | | | value Below Surface (| S8) (MLRA 1 | 147, 148) | | | rie Redox (A16) |
| - | Black Histic (A3) | | | Dark Surface (S9) (M | | | | | 147, 148) |
| - | Hydrogen Sulfide (A4) | | | my Gleyed Matrix (F2) | | | | | Floodplain Soils (F19) |
| | Stratified Layers (A5) | | | leted Matrix (F3) | | | | (MLR/ | A 136, 147) |
| | 2 cm Muck (A10) (LRR N |) | Red | ox Dark Surface (F6) | | | | Very Shall | ow Dark Surface (TF12) |
| - | Depleted Below Dark Sur | face (A11) | Dep | leted Dark Surface (F7 | ") | | | Other (Exp | lain in Remarks) |
| - | Thick Dark Surface (A12) | | Red | ox Depressions (F8) | | | | | |
| - | Sandy Mucky Mineral (S1 | | Iron- | -Manganese Masses (I | F12) (LRR N | l, | | | |
| | (LRR N, MLRA 147, 148) | | | RA 136) | | | | 3 | |
| - | Sandy Gleyed Matrix (S4) | | | pric Surface (F13) (ML | | | | | ors of hydrophytic vegetation
and hydrology must be |
| - | Sandy Redox (S5)Piedmont Floodplain Soils (F19) (MLRA 148) present, u | | | | | | | unless disturbed or | |
| - | Stripped Matrix (S6) | | Red | Parent Material (F21) | WILRA127,1 | 47) | | problem | alic. |
| | | | | | | | | | |
| Rest | rictive Layer (if observed) | | | | | | | | |
| Туре | <u>.</u> | | | | | | | | |
| Dept | h (inches): | | | | | | | | |
| | . , | | | | | Hydric S | Soil Presen | t? Yes <u>)</u> | (No |
| Rem | orko | | | | | | | | |
| Rem | diks. | | | | | | | | |
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US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

| Project/Site: US 30 Corridor Improvements Project | City/County: Westmoreland Sampling Date: 9.17.19 | | | | | |
|---|---|--|--|--|--|--|
| Applicant/Owner: PennDOT Engineering District 12-0 | State: Pennsylvania Sampling Point: WL5 | | | | | |
| Investigator(s): ASB, ALK | Section, Township, Range: North Huntingdon Township | | | | | |
| Landform (hillslope, terrace, etc. Toe of Slope | Local relief (concave, convex, none): Concave | | | | | |
| Slope (%): <u>2%</u> Lat <u>40.35313</u> | Long: <u>-79.76785</u> | | | | | |
| Subregion (LRR or MLRA): LRR: East & Central Farming & Forest Region | Datum: North American Datum 1983 (NAD 83) | | | | | |
| Soil Map Unit Name: UgB: Upland land - Gilpin complex, 0 to 8% slopes | NWI classification: PEM | | | | | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) | | | | | |
| Are Vegetation <u>N</u> Soil <u>N</u> Hydrology <u>N</u> significantly distur | bed? Are "Normal Circumstances" present? Yes X No | | | | | |
| Are Vegetation <u>N</u> Soil <u>N</u> Hydrology <u>N</u> naturally problema | atic? (if needed explain any answers in Remarks) | | | | | |
| SUMMARY OF FINDINGS – Attach site map showing sampling point location | ons, transects, important features, etc | | | | | |
| Hydrophytic Vegetation Present? Yes X No | In the Sampled Area | | | | | |
| Hydric Soil Present? Yes X No | Is the Sampled Area
within a Wetland? Yes X No | | | | | |
| Wetland Hydrology Present? Yes X No | | | | | | |
| Remarks: | | | | | | |
| Formed along edge of parking lot. | | | | | | |
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| HYDROLOGY | | | | | | |
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required) | | | | | |
| Primary Indicators (minimum of one is required; check all that apply) | Surface Soil Cracks (B6) | | | | | |
| Surface Water (A1) True Aquatic Plan | ts (B14) Sparsely Vegetated Concave Surface (B8) | | | | | |
| High Water Table (A2) Hydrogen Sulfide | Odor (C1) Drainage Patterns (B10) | | | | | |
| | heres on Living Roots (C3) Moss Trim Lines (B16) | | | | | |
| Water Marks (B1) Presence of Redu | | | | | | |
| Sediment Deposits (B2) Recent Iron Redu | ction in Tilled Soils (C6) Crayfish Burrows (C8) | | | | | |
| Drift Deposits (B3) Thin Muck Surface | e (C7) Saturation Visible on Aerial Imagery (C9) | | | | | |
| Algal Mat or Crust (B4) Other (Explain in I | | | | | | |
| Iron Deposits (B5) | Geomorphic Position (D2) | | | | | |
| Inundation Visible on Aerial Imagery (B7) | Shallow Aquitard (D3) | | | | | |
| Water-Stained Leaves (B9) | Microtopographic Relief (D4) | | | | | |
| Aquatic Fauna (B13) | FAC-Neutral Test (D5) | | | | | |
| Field Observations | | | | | | |
| Field Observations | | | | | | |
| Surface Water Present? Yes NoX Depth (inches) Water Table Present? Yes NoX Depth (inches) | wetiand Hydrology | | | | | |
| | | | | | | |
| Saturation Present? Yes X No Depth (inches) (Including capillary fringe) | | | | | | |
| | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous | inspections), if available: | | | | | |
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| Remarks: | | | | | | |
| Remarks. | | | | | | |
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VEGETATION – Use scientific names of plants.

Sampling Point WL5

| | Absolute % | Dominant | Indicator | Dominance Test worksheet: |
|---|------------|---------------------|-----------|--|
| Tree Stratum (Plot size: <u>30'</u>) | Cover | Species? | Status | Number of Dominant Species That Are |
| 1 | | | | OBL, FACW, or FAC:(A) |
| 2 | | | | Total Number of Dominant Species |
| 3 | | | | Across All Strata:(B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| | - | = Total Cover | | OBL species x 1 = |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | FACW species x 2 = |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | FAC species X 3 =
FACU species X 4 = |
| 1. Populus tremuloides – quaking aspen | 1 | No | FAC | UPL species x 5 = |
| 2. <i>Rhus typhina</i> - staghorn sumac | 1 | No | UPL | Column Totals (A) (B) |
| | I | 110 | | |
| 3 | | | | |
| 4 | | | | Prevalence Index = B/A = |
| 5 | | | | Hydrophytic Vegetation Indicators: |
| 6 | | | | X 1 - Rapid Test for Hydrophytic Vegetation |
| 7 | | | | 2 - Dominance Test is >50% |
| 8 | | | | $3 - Prevalence Index is \leq 3.0^{1}$ |
| 9 | | | | 4 - Morphological Adaptations ¹ |
| 10 | 2 | = Total Cover | | (Provide supporting data in Remarks or on a |
| 50% of Total Cover: | - | | 0.4 | separate sheet) |
| Herb Stratum (Plot size: 5') | · | | | Problematic Hydrophytic Vegetation ¹ |
| 1. Typha latifolia - broadleaf cattail | 70 | Yes | OBL | (Explain) |
| 2. Eleocharis palustris - common spikerush | 5 | No | OBL | |
| 3 | | | | |
| 4 | | | | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 5 | | | | Definitions of Vegetation Strata: |
| 6 | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in |
| 7 | | | | diameter at breast height (DBH), regardless of height. |
| 8 | | | | Sapling/shrub - Woody plants, excluding vines, less than 3 in |
| 9 | | | | DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | | | | Herb - All herbaceous (non-woody) plants, regardless of size |
| 11 | | | | and woody plants less than 3.28 ft tall. |
| 12 | | | | Woody vines – All woody vines greater than 3.28 ft in height. |
| | 75 | = Total Cover | | |
| 50% of Total Cover: | 37.5 | 20% of Total Cover: | 15 | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | Hydrophytic |
| 6 | | | | Vegetation |
| 50% (7.4.10) | | = Total Cover | <u> </u> | Present? Yes X No |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | |
| Remarks: (Include photo numbers here or on a separate | e sheet.) | | | |
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| US Army Come of Environm | | | | Eastern Mountains and Piedmont – Version 2.0 |
| US Army Corps of Engineers | | | | Eastern wountains and Pleamont – Version 2.0 |

SOIL

Sampling Point WL5 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators). **Redox Features** Depth Matrix Color Type¹ Loc² (inches) (moist) % Color (moist) % Texture Remarks 0-16 10YR 2/2 95 5YR 4/6 5 С М Silt Loam ²Location: PL=Pore Lining, M=Matrix ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains Indicators for Problematic Hydric Soils³: Hydric Soil Indicators Dark Surface (S7) 2 cm Muck (A10) (MLRA 147) Histosol (A1) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16) Histic Epipedon (A2) Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148) (MLRA 147, 148) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Stratified Layers (A5) Depleted Matrix (F3) (MLRA 136, 147) 2 cm Muck (A10) (LRR N) X Redox Dark Surface (F6) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Other (Explain in Remarks) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) MLRA 136) ³ Indicators of hydrophytic vegetation Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) and wetland hydrology must be Piedmont Floodplain Soils (F19) (MLRA 148) Sandy Redox (S5) present, unless disturbed or Red Parent Material (F21)(MLRA127,147) problematic. Stripped Matrix (S6) Restrictive Layer (if observed) Type: Rock Depth (inches): 16" Hydric Soil Present? Yes X No_ Remarks:

US Army Corps of Engineers

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

| Project/Site: US 30 Corridor Improvements Project Applicant/Owner: PennDOT Engineering District 12-0 Investigator(s): ASB, ALK Landform (hillslope, terrace, etc. Depression Slope (%): 10% Lat 40.35625 Subregion (LRR or MLRA): LRR: East & Central Farming & Forest Region Soil Map Unit Name: UwD: Urban land - Upshur complex, 8 to 25% slopes Are climatic / hydrologic conditions on the site typical for this time of year? Are Vegetation N Soil N Hydrology N significantly disturbed? Are Vegetation N Soil N Hydrology N naturally problematic? | (if needed explain any answers in Remarks) |
|---|--|
| SUMMARY OF FINDINGS – Attach site map showing sampling point locations, Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No Remarks: Ves X No | Is the Sampled Area
within a Wetland? Yes X No |
| HYDROLOGY | |
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) X Surface Water (A1) True Aquatic Plants (E High Water Table (A2) Hydrogen Sulfide Odo X Saturation (A3) Oxidized Rhizosphere Water Marks (B1) Presence of Reduced Sediment Deposits (B2) Recent Iron Reductior Drift Deposits (B3) Thin Muck Surface (C Algal Mat or Crust (B4) Other (Explain in Rem Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Aquatic Fauna (B13) Aduatic Fauna (B13) | x Drainage Patterns (B10) x Drainage Patterns (B10) es on Living Roots (C3) Moss Trim Lines (B16) Hron (C4) Dry-Season Water Table (C2) n in Tilled Soils (C6) Crayfish Burrows (C8) C7) Saturation Visible on Aerial Imagery (C9) |
| Field Observations Surface Water Present? Yes X No Depth (inches) 1 Water Table Present? Yes No X Depth (inches) - Saturation Present? Yes X No Depth (inches) Saturation Present? Yes X No Depth (inches) Saturation Present? Yes X Uncluding capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective | |
| Remarks: | Eastern Mountains and Piedmont – Version 2.0 |

VEGETATION – Use scientific names of plants.

Sampling Point WL6

| | Absolute % | Dominant | Indicator | Dominance Test worksheet: |
|---|------------|---------------------|-----------|--|
| Tree Stratum (Plot size: <u>30'</u>) | Cover | Species? | Status | Number of Dominant Species That Are |
| 1 | | | | OBL, FACW, or FAC:(A) |
| 2 | | | | Total Number of Dominant Species |
| 3 | | | | Across All Strata: (B) |
| 4 | | | | Percent of Dominant Species |
| 5 | | | | That Are OBL, FACW, or FAC: (A/B) |
| 6 | | | | Prevalence Index worksheet: |
| 7 | | | | Total % Cover of: Multiply by: |
| | 0 | = Total Cover | | OBL species x 1 = |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | FACW species x 2 = |
| | | | | FAC species x 3 = |
| Sapling/Shrub Stratum (Plot size: 15') | | | | FACU species x 4 = |
| 1. Salix sericea - silky willow | 20 | Yes | OBL | UPL species x 5 = |
| 2 | | | | Column Totals(A)(B) |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | Prevalence Index = B/A = |
| 6 | | | | Hydrophytic Vegetation Indicators: |
| 7 | | | | X 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | | | 2 - Dominance Test is >50% |
| 9 | | | | 3 - Prevalence Index is ≤3.0 ¹ |
| 10 | | | | 4 - Morphological Adaptations ¹ |
| | 20 | = Total Cover | | (Provide supporting data in Remarks or on a |
| 50% of Total Cover: | 10 | 20% of Total Cover: | 4 | separate sheet) |
| Herb Stratum (Plot size: 5') | | | | Problematic Hydrophytic Vegetation ¹ |
| 1. <i>Typha latifolia</i> - broadleaf cattail | 20 | Yes | OBL | (Explain) |
| 2. Solidago gigantea – late goldenrod | 5 | No | FACW | |
| 3. <u>Scirpus cyperinus –</u> woolgrass | 5 | No | FACW | ¹ Indicators of hydric soil and wetland hydrology must be |
| 4. Eleocharis palustris - common spikerush | 2 | No | OBL | present, unless disturbed or problematic. |
| 5 | | | | Definitions of Vegetation Strata: |
| 6 | | | | Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in |
| 7 | | | | diameter at breast height (DBH), regardless of height. |
| 8 | | | | Sapling/shrub - Woody plants, excluding vines, less than 3 in |
| 9 | | | | DBH and greater than or equal to 3.28 ft (1 m) tall. |
| 10 | | | | Herb - All herbaceous (non-woody) plants, regardless of size |
| 11. | | | | and woody plants less than 3.28 ft tall. |
| 12. | | | | Woody vines – All woody vines greater than 3.28 ft in height. |
| | 32 | = Total Cover | | |
| 50% of Total Cover: | 16 | 20% of Total Cover: | 6.4 | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | | | | |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | Underschool a |
| 6 | | | | Hydrophytic
Vegetation |
| | 0 | = Total Cover | | Present? Yes X No |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | |
| | | | | |
| Remarks: | | | | |
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SOIL

Sampling Point WL6

| Profile Description: (D | escribe to the o | depth need | ed to document the | indicator or | confirm the | e absence o | of indicators). | |
|------------------------------------|------------------|------------|-------------------------------|---------------------|---------------------|------------------|-------------------------|--------------------------------------|
| Depth M | atrix Color | _ | Redox Features | | | | | |
| (inches) | (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-14 | 10YR 5/1 | 80 | 7.5YR 4/4 | 20 | С | М | Clay Loam | - |
| | | | | | | | | |
| | <u> </u> | | | | | | | |
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| | <u> </u> | | | | | | | |
| ¹ Type: C=Concentration | , D=Depletion, F | RM=Reduce | d Matrix, MS=Masked | Sand Grain | s ² Loca | ation: PL=P | ore Lining, M=Matri | |
| Hydric Soil Indicators | | | | | | | | blematic Hydric Soils ³ : |
| Histosol (A1) | | | Surface (S7) | | | | | (10) (MLRA 147) |
| Histic Epipedon (A2) | | | value Below Surface (| | | | Coast Prairie | |
| Black Histic (A3) | | | Dark Surface (S9) (M | LRA 147, 14 | 8) | | (MLRA 14 | |
| Hydrogen Sulfide (A4) | | | ny Gleyed Matrix (F2) | | | | | odplain Soils (F19) |
| Stratified Layers (A5) | | | eted Matrix (F3) | | | | (MLRA 1 | · · |
| 2 cm Muck (A10) (LRR N) | <i>.</i> | | x Dark Surface (F6) | | | | | Dark Surface (TF12) |
| Depleted Below Dark Surface | (A11) | | eted Dark Surface (F7 |) | | | Other (Explain | n in Remarks) |
| Thick Dark Surface (A12) | | | x Depressions (F8) | | | | | |
| Sandy Mucky Mineral (S1) | | | Manganese Masses (I | -12) (LRR N | , | | | |
| (LRR N, MLRA 147, 148) | | | A 136) | | | | ³ Indicators | of hydrophytic vegetation |
| Sandy Gleyed Matrix (S4) | | | ric Surface (F13) (ML | | | | | hydrology must be |
| Sandy Redox (S5) | | | mont Floodplain Soils | | | | | ess disturbed or |
| Stripped Matrix (S6) | | Red | Parent Material (F21) | WILKA127,1 | 47) | | problematic | |
| | | | | | | | | |
| Restrictive Layer (if observed) | | | | | | | | |
| Type <u>: Rock</u> | | | | | | | | |
| Depth (inches): 14 | | | | | | | | |
| | | | | | Hydric S | oil Present | ? Yes <u>X</u> | No |
| Remarks: | | | | | | | | |
| Remarks. | | | | | | | | |
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WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

| Project/Site: US 30 Corridor Improvements Project | _ City/County: Westmoreland Date: 9.17.19 |
|---|--|
| Applicant/Owner: PennDOT Engineering District 12-0 | State: Pennsylvania Sampling Point: UPL 2 |
| Investigator(s): ASB, ALK | Section, Township, Range: North Huntingdon Township |
| Landform (hillslope, terrace, etc. Depression | Local relief (concave, convex, none): Concave |
| Slope (%): 20% Lat 40.34729° | Long: -79.76533° |
| Subregion (LRR or MLRA): LRR: East & Central Farming & Forest Region | Datum: North American Datum 1983 (NAD 83) |
| Soil Map Unit Name: BeD: Bethesda very channery silt loam, 0 to 8% slopes | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation <u>N</u> Soil <u>N</u> Hydrology <u>N</u> significantly dist | turbed? Are "Normal Circumstances" present? Yes X No |
| Are Vegetation <u>N</u> Soil <u>N</u> Hydrology <u>N</u> naturally proble | matic? (if needed explain any answers in Remarks) |
| SUMMARY OF FINDINGS – Attach site map showing sampling point loca | itions, transects, important features, etc |
| Hydrophytic Vegetation Present? Yes X No | Is the Sampled Area |
| Hydric Soil Present? Yes NoX | within a Wetland? Yes <u>No X</u> |
| Wetland Hydrology Present? Yes No | |
| Remarks: | |
| Upland for Wetland WL3 and WL4 | |
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| HYDROLOGY | |
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required) |
| Primary Indicators (minimum of one is required; check all that apply) | Surface Soil Cracks (B6) |
| Surface Water (A1) True Aquatic Pl | |
| High Water Table (A2) Hydrogen Sulfic | |
| | spheres on Living Roots (C3) Moss Trim Lines (B16) |
| | educed Iron (C4) Dry-Season Water Table (C2) |
| | duction in Tilled Soils (C6) Crayfish Burrows (C8) |
| Drift Deposits (B3) Thin Muck Surf | |
| Algal Mat or Crust (B4) Other (Explain i | |
| Iron Deposits (B5) | Geomorphic Position (D2) |
| Inundation Visible on Aerial Imagery (B7) | Shallow Aquitard (D3) |
| Water-Stained Leaves (B9) | Microtopographic Relief (D4) |
| Aquatic Fauna (B13) | FAC-Neutral Test (D5) |
| | · · · · · |
| Field Observations | |
| Surface Water Present? Yes No X Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes No X Depth (inches) | <u> </u> |
| (Including capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previo | us inspections), if available: |
| | |
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| | |
| Remarks: | |
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 $\label{eq:VEGETATION} \textbf{VEGETATION} - \textbf{Use scientific names of plants}.$

Sampling Point UPL 2

| | Absolute % | Dominant | Indicator | Dominance Test worksheet: | |
|--|------------|---------------------------------------|-----------|--|---------------------------|
| Tree Stratum (Plot size: <u>30'</u>) | Cover | Species? | Status | Number of Dominant Species That Are | |
| 1. <i>Juglans nigra</i> - black walnut | 5 | Yes | FACU | OBL, FACW, or FAC: | 2 (A) |
| 2. Robinia pseudoacacia – black locust | 5 | Yes | FACU | Total Number of Dominant Species | |
| 3. <u>Acer platanoides</u> - Norway maple | 3 | No | FACU | Across All Strata: | <u>5</u> (B) |
| 4 | | · · · · · · · · · · · · · · · · · · · | | Percent of Dominant Species | |
| 5 | | · | | That Are OBL, FACW, or FAC: | 40% (A/B) |
| 6 | | | | Prevalence Index worksheet: | |
| 7 | | . <u> </u> | | Total % Cover of: Multiply by: | |
| | | = Total Cover | | OBL species x 1 = | 0 |
| 50% of Total Cover: | 6.5 | 20% of Total Cover: | 2.6 | FACW species $28 \times 2 =$ | 56 |
| Sapling/Shrub Stratum (Plot size: <u>15'</u>) | | | | FAC species 10 x 3 = FACU species 23 x 4 = | <u>30</u>
92 |
| 1 | | | | UPL species $0 \times 5 =$ | 0 |
| 2 | | | | Column Totals 61 (A) | 178 (B) |
| 3 | | | | 、/ | () |
| 4 | | | | | |
| 5 | | | | Prevalence Index = B/A = | 2.918033 |
| 6 | | | | Hydrophytic Vegetation Indicators: | |
| 7 | | | | 1 - Rapid Test for Hydrophyt | ic Vegetation |
| 8 | | · | | 2 - Dominance Test is >50% | - |
| 9 | | | | X 3 - Prevalence Index is $≤3.0^{1}$ | I |
| 10 | | | | 4 - Morphological Adaptation | າຣ ¹ |
| | 0 | = Total Cover | | (Provide supporting data in Remarks or | on a |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | separate sheet) | |
| Herb <u>Stratum (Plot size: 5')</u> | | | | Problematic Hydrophytic Veg | getation ¹ |
| 1. <i>Eupatorium pulosum</i> - rough boneset | 20 | Yes | FACW | (Explain) | |
| 2. Rosa multiflora - multiflora rose | 10 | Yes | FACU | | |
| 3. <u>Microstegium vimineum –</u> Japanaese stiltgrass | 10 | Yes | FAC | ¹ Indicators of hydric soil and wetland hydr | |
| 4. Persicaria maculosa - Lady's Thumb | 8 | No | FACW | present, unless disturbed or proble | ematic. |
| 5 | | | | Definitions of Vegetation Strata: | |
| 6 | | . <u> </u> | | Tree – Woody plants, excluding vines, 3 in. (
diameter at breast height (DBH), regardless of | |
| 7 | | | | diameter at breast height (DBH), regardless of | neight. |
| 8 | | · | | Sapling/shrub – Woody plants, excluding vir
DBH and greater than or equal to 3.28 ft (1 m) | |
| 9 | | | | | tan. |
| 10 | | <u></u> | | Herb – All herbaceous (non-woody) plants, | regardless of size, |
| 11 | | | | and woody plants less than 3.28 ft tall. | |
| 12 | | | | Woody vines – All woody vines greater than 3 | .28 ft in height. |
| | 48 | = Total Cover | | | |
| 50% of Total Cover: | 24 | 20% of Total Cover: | 9.6 | | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | | | | | |
| 1. Toxicodendron radicans - posion ivy | 2 | <u>No</u> | FAC | | |
| 2. <i>Ipomoea pandurata</i> - wild potato vine | 2 | No | FACU | | |
| 3 | | · | | | |
| 4 | | · | | | |
| 5 | | · | | Hydrophytic | |
| 6 | 4 | = Total Cover | | Vegetation
Present? Yes X | No |
| 50% of Total Cover: | 2 | 20% of Total Cover: | 0.8 | Present? Yes X | No |
| | Z | 20% 01 10(a) 000er. | 0.0 | | |
| Remarks: | | | | | |
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Sampling Point UPL 2 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators). **Redox Features** Depth Matrix Color Loc² (inches) (moist) % Color (moist) % Type¹ Texture Remarks 0-8 10YR 3/2 100 Silt Loam Rocks ²Location: PL=Pore Lining, M=Matrix ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains Indicators for Problematic Hydric Soils³: Hydric Soil Indicators Dark Surface (S7) 2 cm Muck (A10) (MLRA 147) Histosol (A1) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16) Histic Epipedon (A2) Thin Dark Surface (S9) (MLRA 147, 148) Black Histic (A3) (MLRA 147, 148) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Stratified Layers (A5) Depleted Matrix (F3) (MLRA 136, 147) 2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Other (Explain in Remarks) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) MLRA 136) ³ Indicators of hydrophytic vegetation Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) and wetland hydrology must be Piedmont Floodplain Soils (F19) (MLRA 148) Sandy Redox (S5) present, unless disturbed or Red Parent Material (F21)(MLRA127,147) problematic. Stripped Matrix (S6) Restrictive Layer (if observed) Type: Rock Depth (inches): 8" Hydric Soil Present? Yes No<u>X</u> Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

| Project/Site: US 30 Corridor Improvements Project | City/County: Westmoreland Date:9.17.19 |
|---|---|
| Applicant/Owner: PennDOT Engineering District 12-0 | State: Pennsylvania Sampling Point: UPL 3 |
| Investigator(s): ASB, ALK | Section, Township, Range: North Huntingdon Township |
| Landform (hillslope, terrace, etc. <u>Slope</u> | Local relief (concave, convex, none): Concave |
| Slope (%): 30% Lat 40.35326° | Long: -79.76774° |
| Subregion (LRR or MLRA): LRR: East & Central Farming & Forest Region | Datum: North American Datum 1983 (NAD 83) |
| Soil Map Unit Name: UgB - Urban land-Gilpin complex, 0 to 8 percent slopes | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation N Soil N Hydrology N significantly distur | bed? Are "Normal Circumstances" present? Yes X No |
| Are Vegetation N Soil N Hydrology N naturally problema | atic? (if needed explain any answers in Remarks) |
| SUMMARY OF FINDINGS – Attach site map showing sampling point location | ons, transects, important features, etc |
| Hydrophytic Vegetation Present? Yes No X | In the Sempled Area |
| Hydric Soil Present? Yes NoX | Is the Sampled Area No No |
| Wetland Hydrology Present? Yes No X | |
| Remarks: | |
| Upland for Wetland WL5 | |
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| | |
| HYDROLOGY | |
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required) |
| Primary Indicators (minimum of one is required; check all that apply) | Surface Soil Cracks (B6) |
| Surface Water (A1) True Aquatic Plan | |
| High Water Table (A2) Hydrogen Sulfide | |
| | heres on Living Roots (C3) Moss Trim Lines (B16) |
| Water Marks (B1) Presence of Redu | |
| · · · · · | ction in Tilled Soils (C6) Crayfish Burrows (C8) |
| Drift Deposits (B3) Thin Muck Surfac | |
| Algal Mat or Crust (B4) Other (Explain in I | |
| Iron Deposits (B5) | Geomorphic Position (D2) |
| Inundation Visible on Aerial Imagery (B7) | Shallow Aquitard (D3) |
| Water-Stained Leaves (B9) | Microtopographic Relief (D4) |
| Aquatic Fauna (B13) | FAC-Neutral Test (D5) |
| | |
| Field Observations | |
| Surface Water Present? Yes <u>No X</u> Depth (inches) | Wetland Hydrology |
| Water Table Present? Yes <u>No X</u> Depth (inches) | Present Yes No X |
| Saturation Present? Yes No X Depth (inches) | <u>.</u> |
| (Including capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous | inspections) if available |
| | |
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| Remarks: | |
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| VEGETATION – Use scientific names of plants. | | | | Sampling Point UPL 3 |
|---|---------------|-----------------------------|---------------|---|
| Tree Stretum (Districe: 20) | Absolute % | Dominant | Indicator | Dominance Test worksheet: |
| Tree <u>Stratum (Plot size: 30')</u>
1. <i>Populus tremuloides</i> – quaking aspen | Cover
1 | <u>Species?</u>
No | Status
FAC | Number of Dominant Species That Are
OBL, FACW, or FAC: 1 (A) |
| · _ · _ · _ · _ · · | I | | TAC | OBL, FACW, or FAC:(A)
Total Number of Dominant Species |
| 2 | | <u> </u> | | • |
| 3 | | - <u> </u> | ; | () |
| 4 | | · · | | Percent of Dominant Species |
| 5 | | - <u></u> · | | That Are OBL, FACW, or FAC: 50% (A/B) |
| 6 | | <u> </u> | | Prevalence Index worksheet: |
| 7 | | <u> </u> | | Total % Cover of: Multiply by: |
| | 1 | = Total Cover | | OBL species x 1 = |
| 50% of Total Cover: | 0.5 | 20% of Total Cover: | 0.2 | FACW species $0 \times 2 = 0$ |
| Conling/Chruh Stratum (Distaira) (15') | | | | FAC species $5 \times 3 = 15$ |
| Sapling/Shrub Stratum (Plot size: 15') | | | | FACU species $25 \times 4 = 100$ |
| 1 | | - <u></u> · | | UPL species $5 \times 5 = 25$ |
| 2 | | · · | | Column Totals <u>35</u> (A) <u>140</u> (B) |
| 3 | | · · | | |
| 4 | | - <u></u> . | | |
| 5 | | <u> </u> | | $Prevalence Index = \underline{B/A} = \underline{4}$ |
| 6 | | <u> </u> | | Hydrophytic Vegetation Indicators: |
| 7 | | | | 1 - Rapid Test for Hydrophytic Vegetation |
| 8 | | . <u></u> . | | 2 - Dominance Test is >50% |
| 9 | | <u> </u> | | 3 - Prevalence Index is ≤3.0 ¹ |
| 10 | | <u> </u> | | 4 - Morphological Adaptations ¹ |
| | 0 | = Total Cover | | (Provide supporting data in Remarks or on a |
| 50% of Total Cover: | 0 | 20% of Total Cover: | 0 | separate sheet) |
| Herb Stratum (Plot size: 5') | | . . | | Problematic Hydrophytic Vegetation ¹ |
| 1. Solidago altissima - tall goldenrod | 20 | Yes | FACU | (Explain) |
| 2. Gramineae species - grass species* | 20* | <u> </u> | - | |
| 3. Erigeron philadelphicus - Philadelphia fleabane | 5 | No | FACU | ¹ Indicators of hydric soil and wetland hydrology must be |
| 4. Daucus carota - Queen Anne's lace | 5 | No | UPL | present, unless disturbed or problematic. |
| 5 | | | | Definitions of Vegetation Strata: |
| 6 | | | | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more |
| 7 | | | | diameter at breast height (DBH), regardless of height. |
| 8 | | | | Sapling/shrub - Woody plants, excluding vines, less than 3 in |
| 9. | | - <u> </u> | | DBH and greater than or equal to 3.28 ft (1 m) tall. |
| | | · | | Here All berbasseus (per weeds) plants, recordings of size |
| | | - <u></u> . | | Herb – All herbaceous (non-woody) plants, regardless of size
and woody plants less than 3.28 ft tall. |
| 11 | | · · | | |
| 12 | | · · | | Woody vines – All woody vines greater than 3.28 ft in height. |
| | 30 | = Total Cover | | |
| 50% of Total Cover: | 15 | 20% of Total Cover: | 6 | |
| Woody Vine Stratum (Plot size: <u>30'</u>) | F | Vaa | FAC | |
| 1. <u>Toxicodendron radicans</u> - posion ivy | 5 | Yes | FAC | |
| 2 | | <u> </u> | | |
| 3 | | <u> </u> | | |
| 4 | | · | | |
| 5 | | <u> </u> | | Hydrophytic |
| 6 | | | | Vegetation |
| | 5 | = Total Cover | | Present? Yes <u>No X</u> |
| 50% of Total Cover: | 2.5 | 20% of Total Cover: | 1 | |
| Remarks: | | | | |
| | | | | |
| *Since the Gramineae species could not be identified due | e to the lack | of distinguishing character | ristics, | |
| it was excluded from the hydrophytic vegetation tests | | | | |
| | | | | |

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Sampling Point UPL 3 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators). **Redox Features** Depth Matrix Color Loc² (inches) (moist) % Color (moist) % Type¹ Texture Remarks 0-8 10YR 3/1 100 Silt Loam Rock ²Location: PL=Pore Lining, M=Matrix ¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains Indicators for Problematic Hydric Soils³: Hydric Soil Indicators Dark Surface (S7) 2 cm Muck (A10) (MLRA 147) Histosol (A1) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16) Histic Epipedon (A2) Thin Dark Surface (S9) (MLRA 147, 148) Black Histic (A3) (MLRA 147, 148) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F19) Stratified Layers (A5) Depleted Matrix (F3) (MLRA 136, 147) 2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Very Shallow Dark Surface (TF12) Depleted Below Dark Surface (A11) Other (Explain in Remarks) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Iron-Manganese Masses (F12) (LRR N, Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) MLRA 136) ³ Indicators of hydrophytic vegetation Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) and wetland hydrology must be Piedmont Floodplain Soils (F19) (MLRA 148) Sandy Redox (S5) present, unless disturbed or Red Parent Material (F21)(MLRA127,147) problematic. Stripped Matrix (S6) Restrictive Layer (if observed) Type: Rock Depth (inches): 8" Hydric Soil Present? Yes No<u>X</u> Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

| Project/Site: US 30 Corridor Improvements Project Applicant/Owner: PennDOT Engineering District 12-0 Investigator(s): ASB, ALK Landform (hillslope, terrace, etc. Slope Slope (%): 6% Lat 40.35614° Subregion (LRR or MLRA): LRR: East & Central Farming & Forest Region Soil Map Unit Name: UwD - Urban land-Wharton complex, 8 to 25 percent slopes Are climatic / hydrologic conditions on the site typical for this time of year? Are Vegetation N Soil N Hydrology N significantly disturbed Are Vegetation N Soil N Hydrology N Summary OF FINDINGS – Attach site map showing sampling point locations | ? (if needed explain any answers in Remarks) |
|--|---|
| Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Xes No | Is the Sampled Area
within a Wetland? Yes NoX |
| Upland for Wetland WL6 | |
| HYDROLOGY | |
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) | Interface Interface Interface |
| Field Observations Surface Water Present? Yes No _X Depth (inches) Water Table Present? Yes No _X Depth (inches) Saturation Present? Yes No _X Depth (inches) (Including capillary fringe) | Wetland Hydrology Present Yes No X |
| | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins | |
| US Army Corps of Engineers | Eastern Mountains and Piedmont – Version 2.0 |

| Absolute %
Cover | Dominant
Species? | Indicator
Status | Dominance Test worksheet:
Number of Dominant Species That Are | |
|---------------------|---|---|--|--|
| 10 | Yes | FACU | OBL, FACW, or FAC: | 0 (A) |
| | | | Total Number of Dominant Species | |
| | | | Across All Strata: | 3 (B) |
| | | | Percent of Dominant Species | |
| | | | That Are OBL, FACW, or FAC: | 0% (A/B) |
| | | | Prevalence Index worksheet: | |
| | | | Total % Cover of: Multiply by: | |
| 10 | = Total Cover | | | 0 |
| | - | 2 | · · · · · · · · · · · · · · · · · · · | 0 |
| | - | | FAC species 0 x 3 = | 0 |
| | | | | 124 |
| | <u> </u> | | | 0 |
| | | | Column Totals <u>31</u> (A) | 124 (B) |
| | | | | |
| | | | | |
| | | | Prevalence Index = B/A = | 4 |
| | <u> </u> | | Hydrophytic Vegetation Indicators: | |
| | <u> </u> | | 1 - Rapid Test for Hydrophytic | Vegetation |
| | <u> </u> | | 2 - Dominance Test is >50% | |
| | <u> </u> | | | 4 |
| | · | | 4 - Morphological Adaptations | 1 |
| | - | <u>,</u> | (Provide supporting data in Remarks or on
separate sheet) | 1 a |
| 0 | 20% of Total Cover: | 0 | Problematic Hydrophytic Vega | station ¹ |
| 60* | - | | | etation |
| | | | (Explain) | |
| | | | | |
| | | | ¹ Indicators of hydric soil and wetland hydrol | |
| I | | 1700 | | nauc. |
| | - <u> </u> | | • | • · · · · |
| | | | Tree – Woody plants, excluding vines, 3 in. (7. diameter at breast height (DBH), regardless of he | |
| | - <u> </u> | | | - |
| | - <u> </u> | | | |
| | | | | |
| | <u> </u> | | Herb – All herbaceous (non-woody) plants, re | egardless of size |
| | <u> </u> | | | |
| | | | Woody vines – All woody vines greater than 3.2 | 8 ft in height. |
| 21 | = Total Cover | | | |
| 10.5 | 20% of Total Cover: | 4.2 | | |
| | | | | |
| | - <u> </u> | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | Hydrophytic | |
| | Tatal Causa | | Vegetation
Present? Yes | No. V |
| 0 | = Total Cover | | Present? Yes | |
| 0 | 20% of Total Cover: | 0 | | No <u>X</u> |
| | 10
5
5
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0
0 | 10 = Total Cover 5 20% of Total Cover: 0 = Total Cover 1 No 1 No 1 No 1 = Total Cover 1 = Total Cover | 10 = Total Cover 5 20% of Total Cover: 2 | Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total Xover of: Support Total Cover Support Column Total Cover: Prevalence Index worksheet: Total Xover of: Support Column Total Cover: Prevalence Index = B/A = UPL species UPL species Oa = Total Cover Oa = Total Cover |

VEGETATION – Use scientific names of plants.

Sampling Point UPL 4

SOII

| SOIL | | | | | | | Sampling Point | UPL 4 |
|---------------------------------|-------------------------|--------------|------------------------|--------------|--------------------|------------------|------------------------|---|
| Profile Description | on: (Describe to the | e depth need | ded to document the | indicator or | confirm th | e absence | of indicators). | |
| - | - | | | x Features | | | ,- | |
| Depth
(inches) | Matrix Color
(moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| | | | <u>.</u> | | | | | I CEITIAI NO |
| 0-2 | 10YR 3/2 | 100 | | | - | - | Silt Loam | |
| 2-12 | 10YR 3/2 | 90 | 10YR 4/3 | 10 | С | Μ | Silt ILoam | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | . <u></u> | | | | <u> </u> | | | |
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| | | | | | <u> </u> | | | |
| | | | | | | | | |
| ¹ Type: C=Concent | ration, D=Depletion | , RM=Reduc | ed Matrix, MS=Masked | Sand Grain | s ² Loc | ation: PL= | Pore Lining, M=Mat | rix |
| Hydric Soil Indicators | | | · | | | | | oblematic Hydric Soils ³ : |
| Histosol (A1) | | Darl | k Surface (S7) | | | | | A10) (MLRA 147) |
| Histic Epipedon (A2) | | | value Below Surface (| S8) (MLRA 1 | 47, 148) | | | e Redox (A16) |
| Black Histic (A3) | | | Dark Surface (S9) (M | | | | | 147, 148) |
| Hydrogen Sulfide (A4) | | | my Gleyed Matrix (F2) | | •, | | • | oodplain Soils (F19) |
| Stratified Layers (A5) | | | leted Matrix (F3) | | | | | 136, 147) |
| 2 cm Muck (A10) (LRR | N) | | ox Dark Surface (F6) | | | | - | v Dark Surface (TF12) |
| Depleted Below Dark Su | - | | leted Dark Surface (F7 | 7) | | | | ain in Remarks) |
| | | | |) | | | | |
| Thick Dark Surface (A12 | - | | ox Depressions (F8) | | | | | |
| Sandy Mucky Mineral (S | | | -Manganese Masses (| F12) (LRR N | , | | | |
| (LRR N, MLRA 147, 14 | | | RA 136) | | | | ³ Indicator | s of hydrophytic vegetation |
| Sandy Gleyed Matrix (S4 | 4) | | pric Surface (F13) (ML | | | | | s of hydrophytic vegetation
nd hydrology must be |
| Sandy Redox (S5) | | | mont Floodplain Soils | | - | | present, u | nless disturbed or |
| Stripped Matrix (S6) | | Red | Parent Material (F21) | (MLRA127,1 | 47) | | problemat | ic. |
| | | | | | | | | |
| Restrictive Layer (if observed) | | | | | | | | |
| Type: Rock | | | | | | | | |
| | | | | | | | | |
| Depth (inches): 12" | | | | | | | | |
| | | | | | Hydric S | Soil Preser | t? Yes <u>X</u> | No |
| Demoder | | | | | | | | |
| Remarks: | | | | | | | | |
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| | | | | | | | US 30 Corridor |
|-----------------|-----------|-------------|--------------------------|----------|--------------------|------------|----------------------|
| STREAM | NAME: | | UNT 1 to Jacks Run | | PROJEC | | Improvements |
| DRAINAGE | BASIN: | | Jacks Run (101382) | | INVEST | IGATORS: | ASB, ALK |
| | | | | | | DATE: | 9.17.19 |
| PHYSICAL PAR | RAMETE | RS: | | | | | |
| SUBSTRATE TYP | PES: | | | | | | |
| BEC | OROCK | | | | CLAY | | % Embeddedness |
| 30% BOU | ULDERS 1 | .0 IN | | | SAND | | 30% |
| 60% COE | BBLE (2.5 | -10 IN) | | 10% | SILT | | |
| GRA | AVEL (<2. | 5 IN) | | | MUCK | | |
| DET | FRITUS | | | | OTHER | | |
| PERENNIAL ST | REAM | х | INTERMITTEN | τ strfam | | FD | HEMERAL: |
| F EREINIAE 31 | | Λ | | I JINLAN | • | LF | |
| MACROINVER | TEBRAT | ES: | | | | | |
| EPH | HEMEROP | PTERA (Ma | yfly) | | | A (Moth) | |
| NEU | JROPTER | A (Lacewi | ngs) | | AMPHIPODA | A (Scud) | |
| TRI0 | CHOPTEF | RA (Caddis | fly) | | | A (Water I | Beetle) |
| PLE | COPTER | ۹ (Stonefly |) | | MEGALOPTI | ERA (Hellg | rammite) |
| HEN | MIPTERA | (Leafhopp | ers) | | GASTROPOL | DA (Snail) | |
| DIP | TERA (Tr | ue Fly) | | | PLANARIIDA | E (Flatwo | rm) |
| OD | ONATA (I | Dragonfly, | Damselfly) | | HIRUDINEA | (Leech) | |
| ISO | PODA (So | owbug) | | | BIVALVIA (N | 1olluscs) | |
| DEC | CAPODA | (Crayfish) | | | HYDRACHNI | DIA (Mite | s) |
| <u> </u> | MACRO | NIVERTEB | ATES | | FIN FISH | | |
| | | | CROSS SECTIO | | GRAM | | |
| | | | (NOT TO | D SCALE) | | | |
| | | | | | | | |
| | | | | | | | |
| LEFT DESCENI | DING | | | | | | RIGHT DESCENDING |
| BANK (FT |) | | | | | | BANK (FT) |
| (include prima | ry and | - | 18 | 8' | \longrightarrow | | (include primary and |
| secondary bar | - | 5 | 14 | | ./ | 111 | secondary banks in |
| ,
the drawin | | c1 | 2. | | | 6 | , the drawing) |
| | 0, | ΣŢ | (<u>(</u>) | > .7" | \sim | V | 0, |
| | | | | - | | | |
| | | | | | | | |
| | L | | WIDT | | | | l |
| | | | (TOP OF BANK T | | BANK) | | |
| | | | , | | -1 | | |
| BANK | WIDTH | 18' | WATER WIDTH | 3' | N | O WATER | - |
| CHANNEL | - | 5-6' | WATER DEPTH | | _ | | |
| | - | | ertebrates may be attrib | | _
umed poor wat | er quality | |

by urbanization within the project area

| STREAM NAME: | UNT 2 to Jac | ACE WATER SURV | | PROJECT: | US 30 Corridor
Improvements |
|----------------------|------------------------|--------------------|----------------|-------------|--------------------------------|
| DRAINAGE BASIN: | | | - | GATORS: | ASB, ALK |
| | | , | - | DATE: | 9.17.19 |
| PHYSICAL PARAMET | ERS: | | | - | |
| SUBSTRATE TYPES: | | | | | |
| BEDROCK | | | CLAY | ç | % Embeddedness |
| BOULDERS | , 10 IN | | SAND | _ | 5% |
| COBBLE (2 | | 20% | SILT | | |
| GRAVEL (< | 2.5 IN) | 40% | MUCK | | |
| 20% DETRITUS | | | OTHER | | |
| PERENNIAL STREAM: | INTER | MITTENT STREAM: | X | EPH | IEMERAL: |
| MACROINVERTEBRA | TES: | | | | |
| | OPTERA (Mayfly) | | LEPIDOPTER | A (Moth) | |
| | ERA (Lacewings) | | -
AMPHIPODA | (Scud) | |
| TRICHOPTE | ERA (Caddisfly) | | COLEOPTER | A (Water B | eetle) |
| PLECOPTER | RA (Stonefly) | | MEGALOPTE | RA (Hellgr | ammite) |
| HEMIPTER | A (Leafhoppers) | | GASTROPOD | A (Snail) | |
| DIPTERA (1 | True Fly) | | PLANARIIDA | E (Flatwori | m) |
| ODONATA | (Dragonfly, Damselfly) | | HIRUDINEA (| Leech) | |
| ISOPODA (| Sowbug) | | BIVALVIA (M | olluscs) | |
| DECAPODA | A (Crayfish) | | HYDRACHNII | DIA (Mites |) |
| | ONIVERTEBRATES | | FIN FISH | | |
| | CROSS | SECTIONAL DIAG | RAM | | |
| | 1 | (NOT TO SCALE) | | | |
| | | | | | |
| | | 2 (| | | |
| LEFT DESCENDING | | | | | RIGHT DESCENDING |
| BANK (FT) | | 147 | | | BANK (FT) |
| (include primary and | 21 | | | | (include primary and |
| secondary banks in | 5 | 8" | | | secondary banks in |
| the drawing) | ` | V En | a | | the drawing) |
| | | <u> </u> | | | |
| | | | | | |
| | | | | | |
| | | WIDTH (FT) | | | |
| | | F BANK TO TOP OF E | SANK) | | |
| BANK WIDTH | 2' WATEF | R WIDTH 8" | NI | O WATER | _ |
| CHANNEL DEPTH | | R DEPTH 1 " | - | | - |
| | VATE | | - | | |
| Notes. See | | | | | |

| | John Ace Wi | | | | US 30 Co | rridor |
|---|---|-------------------|------------------------|--|--------------|--------|
| STREAM NAME: | | | PROJECT: | | | |
| DRAINAGE BASIN: Jacks Run (101382) | | INVESTIC | DATORS: _ | ASB, / | | |
| | | | | DATE: _ | 9.17. | 19 |
| PHYSICAL PARAMETERS
SUBSTRATE TYPES: | | | | | | |
| BEDROCK | | | CLAY | o | % Embedde | dnocc |
| BOULDERS 10 | INI | 20% | CLAY
SAND | 7 | 10% | uness |
| | | | SAND
SILT | _ | 10% | |
| <u> </u> | | 15% | MUCK | | | |
| 25% DETRITUS | IN) | | OTHER | | | |
| DETRITUS | | | | | | |
| PERENNIAL STREAM: | INTERMITTEN | IT STREAN | 1: | EPH | IEMERAL: | х |
| MACROINVERTEBRATES | | | | | | |
| EPHEMEROPTE | | | LEPIDOPTERA | (Moth) | | |
| NEUROPTERA (| | | AMPHIPODA | . , | | |
| TRICHOPTERA | | | | • • | eetle) | |
| PLECOPTERA (S | | | | _COLEOPTERA (Water Beetle)
MEGALOPTERA (Hellgrammite) | | |
| HEMIPTERA (Le | | | | GASTROPODA (Snail) | | |
| DIPTERA (True Fly) | | | PLANARIIDAE (Flatworm) | | | |
| ODONATA (Dragonfly, Damselfly) | | HIRUDINEA (Leech) | | | | |
| ISOPODA (Sowbug) | | | BIVALVIA (Molluscs) | | | |
| DECAPODA (Cr | • | | HYDRACHNIDIA (Mites) | | | |
| | aynsny | | | in (inites) | 1 | |
| | /ERTEBRATES | | FIN FISH | | | |
| | CROSS SECTIO | NAL DIA | GRAM | | | |
| | | O SCALE) | | | | |
| | | 0 00/(22) | | 1 | | |
| | | | | _ | | |
| LEFT DESCENDING | 120000000000000000000000000000000000000 | | | 10 | RIGHT DES | FNDING |
| BANK (FT) | | | | | BANK | |
| (include primary and | ALE | | 7/A | <u> </u> | (include pri | |
| secondary banks in | | | 1 101 | | secondary | - |
| the drawing) | 91 | , | / 10 | | the drav | |
| the unawing) | V | / | V | | the una | wing) |
| | | - | | 5. C | | |
| | | | | 2.5 | | |
| | | TH (FT) | | | | |
| | | | | | | |
| | (TOP OF BANK | | DAINN | | | |
| BANK WIDTH | 8' WATER WIDTH | N/A | NO | WATER | Pooled | |
| | 4-8' WATER DEPTH | | | | | |
| | cated in channel approx. 30 yar | · · |
eam of studv area | limit. | | |

Notes: Water located in channel approx. 30 yards downstream of study area limit.

| STREAM NAME: | UNT 7 to Jacks Run | PROJECT: | US 30 Corridor
Improvements | |
|--|--------------------|----------------------|--------------------------------|--|
| DRAINAGE BASIN: Jacks Run (101382) | | INVESTIGATORS: | ASB, JMG | |
| | | DATE: | - | |
| PHYSICAL PARAMETERS | : | | | |
| SUBSTRATE TYPES: | | | | |
| BEDROCK | | CLAY | % Embeddedness | |
| 10% BOULDERS 10 | IN | SAND | 20% | |
| 80% COBBLE (2.5-1 | 0 IN) | SILT | | |
| GRAVEL (<2.5 | IN) | MUCK | | |
| 10% DETRITUS | | OTHER | | |
| PERENNIAL STREAM: | INTERMITTENT ST | REAM: EF | PHEMERAL: X | |
| MACROINVERTEBRATES |
:: | | | |
| EPHEMEROPTI | | LEPIDOPTERA (Moth) | | |
| NEUROPTERA | | AMPHIPODA (Scud) | | |
| TRICHOPTERA | | COLEOPTERA (Water | Beetle) | |
| · · · · · · · · · · · · · · · · · | | MEGALOPTERA (Hellg | RA (Hellgrammite) | |
| | | GASTROPODA (Snail) | | |
| DIPTERA (True Fly) PLANARIIDAE (Flatworm) | | orm) | | |
| ODONATA (Dragonfly, Damselfly) HIRUDINEA (Leech) | | | | |
| ISOPODA (Sowbug) BIVALVIA (Molluscs) | | | | |
| DECAPODA (Cr | rayfish) | HYDRACHNIDIA (Mites) | | |
| | /ERTEBRATES | FIN FISH | | |
| | CROSS SECTIONAL | | | |
| | (NOT TO SC | - | | |
| | (| , | | |
| | | | | |
| LEFT DESCENDING | , , | | RIGHT DESCENDING | |
| BANK (FT) | | >/ | BANK (FT) | |
| (include primary and | \wedge | | (include primary and | |
| secondary banks in | | / | secondary banks in | |
| the drawing) | | | the drawing) | |
| | | | | |
| | | | | |
| | | _, | | |
| | WIDTH (F | • | | |
| | (TOP OF BANK TO TO | UP OF BANK) | | |
| BANK WIDTH | 6' WATER WIDTH | N/A NO WATER | x | |
| CHANNEL DEPTH | | N/A NO WATEN | | |

| | SURFACE V | WATER SURV | /E¥ | US 30 Corridor | |
|-------------------------------------|-----------------------------------|-------------|----------------------------|----------------------|--|
| STREAM NAME: | STREAM NAME: UNT 1 to Brush Creek | | PROJECT | | |
| DRAINAGE BASIN: Brush Creek (21275) | | 5) | -
INVESTIGATORS | | |
| | | |
DATE | 9.5.19 | |
| PHYSICAL PARAMET | ERS: | | | | |
| SUBSTRATE TYPES: | | | | | |
| BEDROCK | | | CLAY | % Embeddedness | |
| 5% BOULDERS | 5 10 IN | 15% | SAND | 20% | |
| 20% COBBLE (2 | 5-10 IN) | 15% | SILT | | |
| 40% GRAVEL (< | 2.5 IN) | | MUCK | | |
| 5% DETRITUS | | | OTHER | | |
| PERENNIAL STREAM: | INTERMITT | ENT STREAM | : E | PHEMERAL: X | |
| | | | | | |
| MACROINVERTEBRA | ATES: | | | | |
| | OPTERA (Mayfly) | | LEPIDOPTERA (Moth | 1) | |
| | ERA (Lacewings) | | AMPHIPODA (Scud) | , | |
| | ERA (Caddisfly) | | COLEOPTERA (Wate | r Beetle) | |
| | RA (Stonefly) | | MEGALOPTERA (Hellgrammite) | | |
| HEMIPTERA (Leafhoppers) | | | GASTROPODA (Snail) | | |
| DIPTERA (True Fly) | | | PLANARIIDAE (Flatworm) | | |
| ODONATA (Dragonfly, Damselfly) | | | HIRUDINEA (Leech) | | |
| ISOPODA (Sowbug) | | | BIVALVIA (Molluscs) | | |
| DECAPODA (Crayfish) | | | HYDRACHNIDIA (Mites) | | |
| | | | - | | |
| X NO MACRONIVERTEBRATES | | | FIN FISH | | |
| | CROSS SECT | IONAL DIAG | iRAM | | |
| | (NOT | TO SCALE) | | | |
| | | | | | |
| | | | | | |
| LEFT DESCENDING | | 3' | | RIGHT DESCENDING | |
| BANK (FT) | F- | | -1 | BANK (FT) | |
| (include primary and | 1 | | 1.000 | (include primary and | |
| secondary banks in | | | | secondary banks in | |
| the drawing) | 21 | | | the drawing) | |
| 0. | - 7 / | | | | |
| | | | | | |
| | | | | | |
| | WI | DTH (FT) | | _ | |
| | (TOP OF BANI | K TO TOP OF | BANK) | | |
| | | | | D V | |
| BANK WIDTH | | | NO WATE | R | |
| CHANNEL DEPTH | 2' WATER DEP | TH N/A | - | | |

| | | _ | | US 30 Corridor | |
|-----------------------------------|--------------------------|------------------------|----------------------------|----------------------|--|
| STREAM NAME: UNT 2 to Brush Creek | | | PROJECT: | | |
| DRAINAGE BASIN: | | | INVESTIGATORS: | - | |
| | | | DATE: | 9.17.19 | |
| PHYSICAL PARAMETERS | : | | | | |
| SUBSTRATE TYPES: | | | | | |
| BEDROCK | | CLAY | | % Embeddedness | |
| BOULDERS 10 | IN | <u> 20% </u> SANE |) | 10% | |
| 40% COBBLE (2.5-1 | 0 IN) | SILT | | | |
| 20% GRAVEL (<2.5 | IN) | MUC | К | | |
| 20% DETRITUS | | OTHE | ER | | |
| PERENNIAL STREAM: | | NT STREAM: | EP | PHEMERAL: X | |
| MACROINVERTEBRATES | 5: | | | | |
| EPHEMEROPT | ERA (Mayfly) | LEPIC | OOPTERA (Moth) | | |
| NEUROPTERA | (Lacewings) | AMP | AMPHIPODA (Scud) | | |
| TRICHOPTERA | (Caddisfly) | COLE | COLEOPTERA (Water Beetle) | | |
| PLECOPTERA (| Stonefly) | MEG | MEGALOPTERA (Hellgrammite) | | |
| HEMIPTERA (L | eafhoppers) | GAST | GASTROPODA (Snail) | | |
| DIPTERA (True Fly) | | PLAN | PLANARIIDAE (Flatworm) | | |
| ODONATA (Dragonfly, Damselfly) | | HIRU | HIRUDINEA (Leech) | | |
| ISOPODA (Sowbug) | | BIVA | LVIA (Molluscs) | | |
| DECAPODA (Crayfish) | | HYDF | HYDRACHNIDIA (Mites) | | |
| | VERTEBRATES | FIN F | ISH | | |
| | CROSS SECTION | ONAL DIAGRAM | | | |
| | (NOT T | O SCALE) | | | |
| | | | | | |
| | | | | | |
| LEFT DESCENDING | - 1 | 2' | | RIGHT DESCENDING | |
| BANK (FT) | 15- | L | > _ | BANK (FT) | |
| (include primary and | TY | | 1 | (include primary and | |
| secondary banks in | $\langle 1 \rangle$ | | 1.1.1 | secondary banks in | |
| the drawing) | 6 | | 14 | the drawing) | |
| | * | | J | | |
| | | | v | | |
| | | | | | |
| | WID | TH (FT) | | 1 | |
| | | TO TOP OF BANK) | | | |
| | | | | | |
| BANK WIDTH | 12' WATER WIDTH | H N/A | NO WATER | х | |
| | 6-4' WATER DEPTH | <u> </u> | | | |
| | e accumulated in channel | <u>,</u> | | | |

| | JUNIAL W | ATEN SON | | US 30 Corridor | |
|-------------------------------------|------------------------------|---------------|---------------------------------------|----------------------|--|
| STREAM NAME: UNT 3 to Brush Creek | | PROJECT | · · · · · · · · · · · · · · · · · · · | | |
| DRAINAGE BASIN: Brush Creek (21275) | | INVESTIGATORS | , | | |
| | | | DATE | 12.6.19 | |
| PHYSICAL PARAMETERS | ,
, | | | | |
| SUBSTRATE TYPES: | | | | | |
| BEDROCK | | 20% | _CLAY | % Embeddedness | |
| 20% BOULDERS 10 | | 10% | _SAND | 20% | |
| 30% COBBLE (2.5-10 | | | _SILT | | |
| 20% GRAVEL (<2.5 I | N) | | _MUCK | | |
| DETRITUS | | | OTHER | | |
| PERENNIAL STREAM: | INTERMITTE | NT STREAM | : EI | PHEMERAL: X | |
| MACROINVERTEBRATES | : | | | | |
| EPHEMEROPTE | ERA (Mayfly) | | LEPIDOPTERA (Moth) | | |
| NEUROPTERA | Lacewings) | | AMPHIPODA (Scud) | | |
| TRICHOPTERA | (Caddisfly) | |
COLEOPTERA (Water | Beetle) | |
| PLECOPTERA (S | Stonefly) | | | grammite) | |
| HEMIPTERA (Le | eafhoppers) | | GASTROPODA (Snail) | | |
| DIPTERA (True Fly) | | | –
PLANARIIDAE (Flatworm) | | |
| ODONATA (Dragonfly, Damselfly) | | | –
HIRUDINEA (Leech) | | |
| ISOPODA (Sow | bug) | | | | |
| DECAPODA (Cr | ayfish) | | HYDRACHNIDIA (Mites) | | |
| | 'ERTEBRATES | | FIN FISH | | |
| | CROSS SECTION | | GRAM | | |
| 1 | (NOT | TO SCALE) | | 1 | |
| | | | | | |
| | | | | | |
| LEFT DESCENDING | | | | RIGHT DESCENDING | |
| BANK (FT) | | 31 | | BANK (FT) | |
| (include primary and | | 5 | \rightarrow $-$ | (include primary and | |
| secondary banks in | X | | | secondary banks in | |
| the drawing) | | 2' | 12' | the drawing) | |
| | | m | 31" V | | |
| | | | | | |
| | | | |] | |
| | | OTH (FT) | | | |
| | (TOP OF BANK | IO IOP OF | BANK) | | |
| BANK WIDTH | 3' WATER WIDT | H 2' | NO WATER | 2 _ | |
| CHANNEL DEPTH | 2' WATER DEPT | | | · | |
| | PP discharges to the channel | ··· <u> </u> | _ | | |
| NULES. 12 IIICH C | in discharges to the channel | | | | |

US 30 Corridor Improvements - Western Section

APPENDIX C Resource Photographs



Photo 1: UNT 1 to Jacks Run – Facing Upstream (9.17.19)



Photo 2: UNT 1 to Jacks Run – Facing Downstream (9.17.19)





Photo 3: UNT 2 to Jacks Run – Facing Upstream (9.17.19)



Photo 4: UNT 2 to Jacks Run – Facing Downstream (9.17.19)





Photo 5: Wetland WL6 – Facing North (9.17.19)



Photo 6: Wetland WL6 - Facing Southeast (9.17.19)





Photo 7: UNT 6 to Jacks Run – Facing Upstream (9.17.19)



Photo 8: UNT 6 to Jacks Run – Facing Downstream (9.17.19)





Photo 9: UNT 7 to Jacks Run - Facing Upstream (9.5.19)



Photo 10: UNT 7 to Jacks Run – Facing Downstream (9.5.19)





Photo 11: Wetland WL5 - Facing Northeast (9.17.19)



Photo 12: Wetland WL5 – Facing Southwest (9.17.19)





Photo 13: UNT 2 to Brush Creek – Facing Upstream (9.17.19)



Photo 14: UNT 2 to Brush Creek - Facing Downstream (9.17.19)





Photo 15: Wetland WL4 - Facing Northwest (12.6.19)



Photo 16: Wetland WL4 – Facing Southeast (12.6.19)





Photo 17: UNT 1 to Brush Creek - Facing Upstream (9.5.19)



Photo 18: UNT 1 to Brush Creek - Facing Downstream (9.5.19)





Photo 19: Wetland WL3 – Facing North (9.17.19)



Photo 20: Wetland WL3 – Facing East (9.17.19)





Photo 21: UNT 3 to Brush Creek - Facing Upstream (12.6.19)



Photo 22: UNT 3 to Brush Creek - Facing Downstream (12.6.19)

