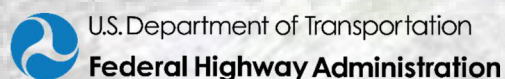


**Wetlands and Watercourses
Technical Memorandum**

for the

**State College Area Connector
Planning and Environmental Linkage
(PEL) Study**



AUGUST 13, 2021

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Appendix A: References

List of Acronyms

CWF	Cold Water Fishes
EV	Exceptional Value
HQ-CWF	High Quality-Cold Water Fishes
I-80	Interstate 80
I-99	Interstate 99
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
PA	Pennsylvania or Pennsylvania Route
PA DEP	Pennsylvania Department of Environmental Protection
PASDA	Pennsylvania Spatial Data Access
PEL	Planning and Environmental Linkage
PEM	Palustrine Emergent
PFBC	Pennsylvania Fish and Boat Commission
PFO	Palustrine Forested
POW	Palustrine Open-Water
PSS	Palustrine Scrub-Shrub
SCAC	State College Area Connector
SCCCTS	South Central Centre County Transportation Study
S.R.	State Route
SSURGO	Soil Survey Geographic Database
TSF	Trout Stocking
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 Introduction

The Planning and Environmental Linkage (PEL) Study for the State College Area Connector (SCAC) is intended to identify, evaluate, and recommend transportation improvements in the PEL Study Area. The PEL process allows early planning-level decisions to be carried forward into future transportation projects so that National Environmental Policy Act (NEPA) requirements are connected and planning analyses and decisions are not revisited. To ensure that the PEL Study results can be used in future NEPA projects, the PEL investigations will meet standards established by NEPA regulations and guidance as well as use consistent NEPA terms (e.g. purpose and need, alternatives, affected environment, environmental consequences, etc.). The PEL Study Area (Figure 1) is approximately 70 square miles (approximately 44,800 acres), extends through the southern portion of Centre County, and includes all or parts of six municipalities: Centre Hall Borough and Potter, Spring, Harris, College, and Benner Townships. The study area includes key transportation routes that provide access to regional destinations and beyond via major transportation routes such as United States (U.S.) 322, Pennsylvania (PA) State Route (S.R.) 144, PA 45, and Interstate 99 (I-99) which, in turn, provide access to nearby I-80. The initial data collection area is also shaped by the topography of the area. In general, the study area encompasses the southwestern portion of Penns Valley that extends between Nittany Mountain to the north and the Seven Mountains area of the Tussey Mountain range to the south. The limits of the study area will be refined as the process advances.

This document is intended to present a predictive wetland and watercourse evaluation to identify aquatic resource features within the PEL Study Area. Approximate locations of wetlands, including ponds and lakes, and watercourses will be used to identify and analyze potential aquatic resource impacts associated with proposed transportation improvement alternatives that may be developed during the PEL process. Additionally, this predictive information will assist with agency coordination regarding sensitive, threatened, and/or endangered species in the PEL Study Area. The future in-field identification and delineation assessments, to be conducted as part of any future NEPA project investigations, will be conducted using the Routine On-Site Wetland Delineation Method described in the U.S. Army Corps of Engineers (USACE) *Wetland Delineation*

Manual, Technical Report Y-87-1 (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (2012).

2.0 Methods

The predictive wetland and watercourse evaluation included a thorough review of available secondary source information such as topographic, hydric soil, National Wetland Inventory (NWI), and statewide floodplain mapping. Additionally, several Geographic Information System (GIS) datasets including Centre County Open Data, Pennsylvania Spatial Data Access (PASDA) – Modeled Primary Wetlands, and Soil Survey Geographic Database (SSUVGO) were also used to predict the location of potential aquatic resources. By combining these current and spatially accurate data sets, areas could be cross-referenced to identify intersections of hydric soils, potential sources of hydrology, and low-lying landscape positions that would typically be occupied by wetland and watercourse features. These references are included in the appendices.

Additionally, McCormick Taylor's *Route 322/144/45 Corridors Data Refresh Project, Centre County, PA– Secondary Source Wetland and Stream Resource Data Collection Memo* as well as their *Route 322/144/45 Corridors Data Refresh Project, Centre County, Pennsylvania – 2019 Data Refresh Report* were referenced and incorporated into the predictive wetland and watercourse assessment. The Data Collection Memo, dated June 2018, states that the purpose was to collect and present updated GIS data in order to predict what environmental features may have changed since the conclusion of the *South Central Centre County Transportation Study (SCCCTS)* in 2004. The memo also references the SCCCTS aquatic resource delineation data (2002 Delineation and 2004 Streams). These data sets were also merged into the predictive wetland mapping. Regulatory agencies generally consider wetland and watercourse delineations as valid for five years. While the SCCCTS delineations have long since expired, per the Data Collection Memo and Data Refresh Report, these data still provide detailed information available for use in the predictive model due to the fact that they were features collected and confirmed in the field.

Additionally, Modeled Primary Wetlands (2013), a PASDA data set obtained from the PA Department of Environmental Protection (PA DEP), were also merged into the predictive wetland assessment mapping. Per the University of Vermont Spatial Analysis Laboratory, which worked in conjunction with the PA DEP to develop the Modeled Primary Wetlands data, this dataset was developed to support land-cover mapping and modeling initiatives in the Commonwealth of PA to map wetland habitats. According to the Abstract, “the primary sources used to derive this modeled wetlands layer were 2006-2008 leaf-off LiDAR data, 2005-2008 leaf-off orthoimagery, 2013 high-resolution land-cover data, and moderate-resolution predictive wetlands maps incorporating topography, hydrological flow potential, and climate data. This dataset is considered current based on the 2013 land-cover map.”

3.0 Results

The following sections document the identification of different wetland, watercourse, and floodplain resources in the PEL Study Area. The identified wetlands, watercourses, and floodplain features are illustrated on Figure 3.

3.1 Wetlands

Potential wetland resources in the study area were identified through a thorough review of available secondary source data. The predictive wetland mapping, developed by merging the readily available secondary source data, identified approximately 1,217 acres of Palustrine Emergent (PEM), Palustrine Scrub-Shrub (PSS), Palustrine Forested (PFO), and Palustrine Open-Water (POW) wetlands within the PEL Study Area. The analysis determined that a majority of the predicted wetlands are concentrated in the southern portion of the study area with the highest density identified along the Sinking Creek drainage corridor(s). The aquatic resources are included on the enclosed Wetland and Watercourse mapping (Figure 3).

3.1.1 NWI Wetlands

The U.S. Fish and Wildlife’s (USFWS) NWI mapping identified 32 NWI classifications types. These classifications included PEM1A, PEM1Ad, PEM1B, PEM1C, PEM1E, PEM1/SS1A, PSS1A, PSS1C, PSS1E, PSS1Eh, PSS/EM1A, PSS/EM1C, PSS1/FO4C, PFO1A, PFO1C, PFO1/SS1A, PFO4A, PFO4E, and PFO5/SS1F as well as L1UBHh (Colyer Lake), PAB3Fh, PUBF, PUBFh, PUBFx, PUBHh, and PUBHx for POW systems. Of the 1,217 acres of predicted wetlands identified within the PEL Study Area, approximately 346.12 acres were identified as NWI wetland systems. Descriptions of the NWI wetland types, as well as approximate acreages for each within the study area, are included below in Table 1.

Table 1: NWI Wetlands

NWI CLASSIFICATION	DESCRIPTION	APPROXIMATE ACREAGE
PEM1A	Palustrine Emergent, Persistent, Temporarily Flooded	52.26
PEM1Ad	Palustrine Emergent, Persistent, Temporarily Flooded, Partly Drained/Ditched	4.10
PEM1B	Palustrine Emergent, Persistent, Seasonally Saturated	0.86
PEM1C	Palustrine Emergent, Persistent, Seasonally Flooded	12.74
PEM1E	Palustrine Emergent, Persistent, Seasonally Flooded/Saturated	1.42
PEM1/SS1A	Palustrine Emergent, Persistent/ Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Temporarily Flooded	2.96
PSS1A	Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Temporarily Flooded	16.42
PSS1C	Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded	4.99
PSS1E	Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated	0.38

Table 1: NWI Wetlands (Continued)

NWI CLASSIFICATION	DESCRIPTION	APPROXIMATE ACREAGE
PSS1Eh	Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded/Saturated, Diked/Impounded	1.46
PSS/EM1A	Palustrine Scrub-Shrub/Palustrine Emergent, Persistent, Temporarily Flooded	7.92
PSS/EM1C	Palustrine Scrub-Shrub/Palustrine Emergent, Persistent, Seasonally Flooded	6.40
PSS1/FO4C	Palustrine Scrub-Shrub, Broad-Leaved Deciduous/Palustrine Forested, Needle-Leaved Evergreen, Seasonally Flooded	1.25
PFO1A	Palustrine Forested, Broad-Leaved Deciduous, Temporarily Flooded	14.46
PFO1C	Palustrine Forested, Broad-Leaved Deciduous, Seasonally Flooded	3.11
PFO1/SS1A	Palustrine Forested, Broad-Leaved Deciduous/ Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Temporarily Flooded	21.90
PFO4A	Palustrine Forested, Needle-Leaved Evergreen, Temporarily Flooded	3.88
PFO4E	Palustrine Forested, Needle-Leaved Evergreen, Seasonally Flooded/Saturated	3.86
PFO5/SS1F	Palustrine Forested, Dead/ Palustrine Scrub-Shrub, Broad-Leaved Deciduous, Semipermanently Flooded	3.11
L1UBHh	(Colyer Lake) Lacustrine, Limnetic, Unconsolidated Bottom, Permanently Flooded, Diked/Impounded	75.65
PAB3Fh	Palustrine Aquatic Bed, Rooted Vascular, Semipermanently Flooded, Diked/Impounded	0.68

Table 1: NWI Wetlands (Continued)

NWI CLASSIFICATION	DESCRIPTION	APPROXIMATE ACREAGE
PUBF	Palustrine Unconsolidated Bottom, Semipermanently Flooded	0.18
PUBFh	Palustrine Unconsolidated Bottom, Semipermanently Flooded, Diked/Impounded	0.23
PUBFx	Palustrine Unconsolidated Bottom, Semipermanently Flooded, Excavated	0.22
PUBHh	Palustrine Unconsolidated Bottom, Permanently Flooded, Diked/Impounded	60.84
PUBHx	Palustrine Unconsolidated Bottom, Permanently Flooded, Excavated	44.84

3.1.2 Lakes and Ponds

Through cross analysis of the secondary source data, it was determined that the 2020 Centre County aquatic resource mapping was the most spatially accurate with respect to depicting POW systems on the aerial base. While many of these POW areas are correlated with an NWI classification, not all of the mapped POW systems were present on the NWI layer. Approximately 216 total acres of POW resources (i.e., lakes and ponds) were identified within the PEL Study Area – approximately 182.6 acres of which were identified on NWI mapping. The 2020 Centre County datum was used for both the aquatic resource mapping and the POW acreage calculations. It should be noted that several of these POWs are located within land uses consisting of quarry/mining activities, including the Hanson Aggregates property south/southeast of Lemont and the Glenn O. Hawbaker/Central Valley Aggregates properties east/northeast of Pleasant Gap.

Colyer Lake, a greater than 75-acre impoundment owned by the Commonwealth of PA and managed by the PA Fish and Boat Commission (PFBC), is located within the south-central portion of the PEL Study Area along Sinking Creek (See Figure 3). Colyer Lake is used for recreational

activities such as fishing, boating, and hiking. The lake is a result of a man-made dam constructed in the 1960s which intercepted and impounded Sinking Creek.

3.1.3 Soils

The U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service (NRCS) Web Soil Survey and Soil Survey Geographic Database (SSURGO) were used to identify the mapped soil units within the study area. Hydric ratings (major hydric soils) and hydric classification-presence (non-hydric soils which contain hydric inclusions) data were obtained through both the Web Soil Survey and the SSURGO sources and cross-referenced for consistency. By identifying areas mapped as hydric soils or as soils containing hydric inclusions, in concert with the other secondary source data, potential wetland locations could be predicted within the PEL Study Area. The datasets revealed that there are 11 major hydric soils as well as 31 non-hydric soils that contain hydric inclusions in the PEL Study Area. The mapped soil units are depicted on the enclosed soil mapping (Figure 2). A summary of all the mapped soil units and their hydric inclusions is presented in Table 2 below.

Table 2: Soils

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
AbB	Albrights silt loam, 3 to 8 percent slopes	No	Brinkerton
AcB	Albrights silt loam, 0 to 8 percent slopes, extremely stony	No	Atkins
AcC	Albrights silt loam, 8 to 15 percent slopes, extremely stony	No	*within floodplains
AIB	Allegheny silt loam, 2 to 8 percent slopes	No	No
AnB	Andover channery silt loam, 0 to 8 percent slopes	Yes	No

Table 2: Soils (Continued)

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
AnC	Andover channery silt loam, 8 to 15 percent slopes	Yes	No
AoB	Andover very stony loam, 0 to 8 percent slopes	Yes	No
AoC	Andover very stony loam, 8 to 15 percent slopes	Yes	No
At	Atkins silt loam, 0 to 3 percent slopes, frequently flooded	Yes	No
BkB	Berks channery silt loam, 3 to 8 percent slopes	No	Markes
BkC	Berks channery silt loam, 8 to 15 percent slopes	No	Markes
BkD	Berks channery silt loam, 15 to 25 percent slopes	No	Markes
BID	Berks channery silt loam, 8 to 25 percent slopes, extremely stony	No	Markes
BmF	Berks and Weikert soils, 25 to 70 percent slopes	No	No
BrA	Brinkerton silt loam, 0 to 3 percent slopes	Yes	Atkins
BrB	Brinkerton silt loam, 3 to 8 percent slopes	Yes	Atkins
BrC	Brinkerton silt loam, 8 to 15 percent slopes	Yes	Markes
BuB	Buchanan channery loam, 3 to 8 percent slopes	No	Andover
BuC	Buchanan channery loam, 8 to 15 percent slopes	No	Andover
BxB	Buchanan extremely stony loam, 0 to 8 percent slopes	No	Andover
BxD	Buchanan channery loam, 8 to 25 percent slopes, rubbly	No	Andover
Ch	Chagrin soils	No	Atkins, Melvin
CkA	Clarksburg silt loam, 0 to 3 percent slopes	No	Thorndale
CkB	Clarksburg silt loam, 3 to 8 percent slopes	No	Thorndale
CvB	Clymer very stony sandy loam, 0 to 8 percent slopes	No	No
CvD	Clymer very stony sandy loam, 8 to 25 percent slopes	No	No

Table 2: Soils (Continued)

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
Du	Dunning silty clay loam	Yes	Melvin
EdB	Edom silt loam, 2 to 8 percent slopes	No	No
EdC	Edom silt loam, 8 to 15 percent slopes	No	No
EdD	Edom silt loam, 15 to 25 percent slopes	No	No
ErB	Ernest channery silt loam, 3 to 8 percent slopes	No	Brinkerton
ErC	Ernest channery silt loam, 8 to 15 percent slopes	No	Brinkerton
HaA	Hagerstown silt loam, 0 to 3 percent slopes	No	No
HaB	Hagerstown silt loam, 3 to 8 percent slopes	No	No
HaC	Hagerstown silt loam, 8 to 15 percent slopes	No	No
HcB	Hagerstown silty clay loam, 3 to 8 percent slopes	No	No
HcC	Hagerstown silty clay loam, 8 to 15 percent slopes	No	No
HcD	Hagerstown silty clay loam, 15 to 25 percent slopes	No	No
HhB	Hazleton channery sandy loam, 3 to 8 percent slopes	No	No
HhC	Hazleton channery sandy loam, 8 to 15 percent slopes	No	No
HSB	Hazleton extremely stony sandy loam, gently sloping	No	No
HSD	Hazleton extremely stony sandy loam, moderately steep	No	No
HTF	Hazleton-Dekalb association, very steep	No	No
HuA	Hublersburg silt loam, 0 to 3 percent slopes	No	No
HuB	Hublersburg silt loam, 3 to 8 percent slopes	No	No
HuC	Hublersburg silt loam, 8 to 15 percent slopes	No	No
HuD	Hublersburg silt loam, 15 to 25 percent slopes	No	No
LaB	Laidig channery loam, 3 to 8 percent slopes	No	No

Table 2: Soils (Continued)

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
LaC	Laidig channery loam, 8 to 15 percent slopes	No	No
LaD	Laidig channery loam, 15 to 25 percent slopes	No	No
LcB	Laidig extremely stony loam, 0 to 8 percent slopes	No	No
LcD	Laidig extremely stony loam, 8 to 25 percent slopes	No	No
LDF	Laidig extremely stony loam, steep	No	No
LtB	Leetonia extremely stony loamy sand, 0 to 12 percent slopes	No	No
LvB	Leetonia sand, variant, 3 to 8 percent slopes	No	No
LvC	Leetonia sand, variant, 8 to 15 percent slopes	No	No
Lx	Lindside soils	No	Melvin
MeB	Meckesville silt loam, 3 to 8 percent slopes	No	No
MkB	Meckesville very stony silt loam, 0 to 8 percent slopes	No	No
Mm	Melvin silt loam	Yes	No
MnB	Millheim silt loam, 2 to 8 percent slopes	No	No
MnC	Millheim silt loam, 8 to 15 percent slopes	No	No
MnD	Millheim silt loam, 15 to 25 percent slopes	No	No
MoB	Monongahela silt loam, 2 to 8 percent slopes	No	Purdy
MrB	Morrison sandy loam, 2 to 8 percent slopes	No	No
MuA	Murrill channery silt loam, 0 to 3 percent slopes	No	No
MuB	Murrill channery silt loam, 3 to 8 percent slopes	No	No
MuC	Murrill channery silt loam, 8 to 15 percent slopes	No	No
MuD	Murrill channery silt loam, 15 to 25 percent slopes	No	No
MvB	Murrill very stony silt loam, 0 to 8 percent slopes	No	Andover

Table 2: Soils (Continued)

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
MvD	Murrill very stony silt loam, 8 to 25 percent slopes	No	Andover
No	Nolin silt loam, local alluvium, 0 to 5 percent slopes	No	Melvin
OhB	Opequon-Hagerstown complex, 3 to 8 percent slopes	No	No
OhC	Opequon-Hagerstown complex, 8 to 15 percent slopes	No	No
OhD	Opequon-Hagerstown complex, 15 to 25 percent slopes	No	No
ORF	Opequon-Hagerstown complex, steep	No	No
OxB	Opequon-Rock outcrop complex, 0 to 8 percent slopes	No	No
OxD	Opequon-Rock outcrop complex, 8 to 25 percent slopes	No	No
Ph	Philo loam, 0 to 3 percent slopes, occasionally flooded	No	Atkins
Pk	Philo and Atkins very stony soils	No	Atkins, Dunning
Pu	Purdy silt loam	Yes	Brinkerton
QU	Quarry	No	No
Ru	Rubble land	No	No
Ty	Tyler silt loam	No	Purdy
UmB	Ungers channery loam, 3 to 8 percent slopes	No	No
UmC	Ungers channery loam, 8 to 15 percent slopes	No	No
UmD	Ungers channery loam, 15 to 25 percent slopes	No	No
UnB	Ungers very stony loam, 0 to 8 percent slopes	No	No
UnD	Ungers very stony loam, 8 to 25 percent slopes	No	No
URB	Urban land-Hagerstown complex, gently sloping	No	No

Table 2: Soils (Continued)

Map Unit Symbol	Map Unit Name	Hydric	Hydric Inclusions
W	Water	No	No
WeC	Weikert shaly silt loam, 5 to 15 percent slopes	No	Markes
WeD	Weikert channery silt loam, 15 to 25 percent slopes	No	No
WhC	Wharton silt loam, 8 to 15 percent slopes	No	Armagh

3.2 Watercourses and Floodplains

The majority of the watercourses identified within the study area are located within two primary Drainage Basins: Bald Eagle Creek and Penns Creek; however, it should be noted that both Bald Eagle Creek and Penns Creek are located entirely outside of the limits of the PEL Study Area boundary. Within the study area limits, three primary watersheds are identified: Spring Creek (Bald Eagle Creek), Little Fishing Creek (Bald Eagle Creek), and Sinking Creek (Penns Creek).

In addition to the primary watersheds and drainage basins identified within the PEL Study Area, an approximately 0.35 square mile (approximately 224-acre) area at the southeastern limit of the study area, along the existing U.S. 322 corridor, was determined to be located within the Laurel Creek watershed and subsequently the Lower Juniata River Drainage Basin. This small area drains southeast to Laurel Creek, then southwest to the Laurel Creek Reservoir, before discharging southeast to Laurel Creek that then drains southeast to Honey Creek before its confluence with Kishacoquillas Creek several miles south of the study area. Kishacoquillas Creek ultimately drains to the Juniata River.

The identified watercourses, as well as the demarcation of the Bald Eagle Creek, Penns Creek, and Laurel Creek Drainage Basins, are included on the enclosed wetland and watercourse mapping (Figure 3). There are no Pennsylvania Water Trails designated within the PEL Study Area. Additionally, there are no Pennsylvania or federal Wild or Scenic Rivers within the PEL Study Area.

3.2.1 Trout Stream Listings

According to the PFBC, all of the primary watercourses (Spring Creek, Little Fishing Creek, and Sinking Creek) recognized within the study area are identified as Natural Reproduction Trout Streams (i.e., Wild Trout Streams). Additionally, all of the primary/named watercourses (presented in Table 3), with the exception of Sinking Creek, Britton Run, Kohler Valley Run, and Laurel Creek, are considered Class A Wild Trout Streams by the PFBC. Additionally, according to PA Code, Title 58, Chapter 57.11(4), “tributaries to wild trout streams are classified as Wild Trout Streams for their function as habitat for segments of wild trout populations, including nurseries and refuges, and in sustaining water quality necessary for Wild Trout.” The PFBC does not identify an upstream limit for Wild Trout Stream; thus, unnamed tributaries draining to Wild Trout Streams within the study area are also considered Wild Trout Streams. According to the PFBC, the in-stream time-of-year restriction for work in Wild Trout Streams is October 1 through December 31 (i.e. no work may occur within these streams from October 1 to December 31); however, the in-stream time-of-year restriction with respect to Class A Wild Trout Streams is expanded from October 1 through April 1 (i.e. no work may occur within these streams from October 1 to April 1). According to PA Code, Title 25, Chapter 105.17(1)(iii), all wetlands in or along the floodplain of a Wild Trout Stream and the floodplain of streams tributary thereto are considered Exceptional Value (EV) wetlands.

It should also be noted that Bald Eagle Creek, Sinking Creek, and Little Fishing Creek are identified as Stocked Trout Waters. According to the PFBC, tributaries that drain to a Stocked Trout reach are protected as Stocked Trout Waters within 0.5 mile upstream of the confluence with its receiving waters. It should be noted that exceptions may apply to streams and coordination with the PFBC would be conducted, as necessary, to determine protections and time-of-year restrictions for tributaries to Stocked Trout Waters. The in-stream time-of-year restriction for Stocked Trout Waters is March 1 through June 15 (i.e. no work may occur within these streams from March 1 to June 15).

3.2.2 Existing and Protected Water Uses

According to PA Code, Title 25, Chapter 93.9L, all watercourses identified within the PEL Study Area have protected water uses for Cold Water Fishes (CWF), High Quality-Cold Water Fishes (HQ-CWF), or Trout Stocking (TSF). It should be noted that Potter Run, a tributary to Sinking Creek, has a protected water use for CWF; however, according to the PA DEP’s Existing Water Uses list, Potter Run has an elevated status of HQ-CWF. A summary table of the identified streams, their drainage hierarchy, designated and existing water uses, and trout listings is included in Table 3 below.

Table 3: Watercourse Data

Watercourse (Per PA Code Ch. 93)	Designated Use	Existing Use	Stocked Trout	Wild Trout	Class A Wild Trout
3 - Bald Eagle Creek	TSF, MF	-	Yes	Yes	Yes
4 - Spring Creek	HQ-CWF, MF	-	-	Yes	Yes
5 - Cedar Run	HQ-CWF, MF	-	-	Yes	Yes
6 - Black Hawk Gap Run	HQ-CWF, MF	-	-	Yes	Yes
5 - Galbraith Run	HQ-CWF, MF	-	-	Yes	Yes
5 - Slab Cabin Run	HQ-CWF, MF	-	-	Yes	Yes
5 - Logan Branch	HQ-CWF, MF	-	-	Yes	Yes
6 - Gap Run	HQ-CWF, MF	-	-	Yes	Yes
4 - Fishing Creek	HQ-CWF, MF	-	-	Yes	Yes
5 - Little Fishing Creek	HQ-CWF, MF	-	Yes	Yes	Yes
2 - Penns Creek	CWF, MF	-	-	Yes	Yes
3 - Sinking Creek	CWF, MF	-	Yes	Yes	-

Table 3: Watercourse Data (Continued)

Watercourse (Per PA Code Ch. 93)	Designated Use	Existing Use	Stocked Trout	Wild Trout	Class A Wild Trout
4 - Potter Run	CWF, MF	HQ-CWF, MF	-	Yes	Yes
5 - Britton Run	CWF, MF	-	-	Yes	-
5 - Kohler Valley Run	CWF, MF	-	-	Yes	-
4 - Boal Gap Run	CWF, MF	-	-	Yes	Yes
3 - Muddy Creek	HQ-CWF, MF	-	-	Yes	Yes
2 – Juniata River	WWF, MF	-	-	No	-
3 - Kishacoquillas Creek	TSF, MF	-	-	Yes	Yes
4 - Honey Creek	HQ-CWF, MF	-	-	Yes	Yes
5 - Laurel Creek	HQ-CWF, MF	-	-	Yes	-

*Streams highlighted in Orange are located outside of the PEL Study Area.

3.2.3 Floodplains

A review of the eMapPA online application’s floodplains layer revealed that portions of the PEL Study Area associated with Sinking Creek, Boal Gap Run, Potter Run, Spring Creek, Slab Cabin Run, Cedar Run, Logan Branch, Gap Run, and Little Fishing Creek are located within the mapped Statewide Floodplain. It should be noted that while a 100-year floodplain exists, a Federal Emergency Management Agency (FEMA) 100-year floodplain layer is not mapped in Centre County, PA. As a result, the Statewide Floodplain layer was used for this study. A final assessment and review of the predicted wetland/ watercourse resource locations determined that a majority of the anticipated wetlands are located within mapped Statewide Floodplains. Due to the fact that all of the streams located within the PEL Study Area are identified as Wild Trout Streams, or tributaries thereto, all wetlands located within the mapped Statewide Floodplain would be considered EV wetlands.

4.0 Summary

The PEL Study Area included approximately 70 square miles (approximately 44,800 acres) in Centre County, PA. Approximately 1,545 acres of PEM, PSS, and PFO wetlands and approximately 216 acres of POW wetlands were identified using the off-site review of secondary sources. The predictive wetland analysis closely mirrors the existing watercourse data as presented by the Centre County 2020 Stream Mapping. Within the PEL Study Area, 94 mapped soils types were identified with 11 being classified as major hydric soils and 31 classified as non-hydric, but containing hydric inclusions.

Two main Drainage Basins, Bald Eagle Creek and Penns Creek, are the ultimate receiving waters for most watercourses identified within the PEL Study Area. Three primary watersheds (Sinking Creek, Spring Creek, and Little Fishing Creek) are the receiving waters of most small, unnamed tributaries within the PEL Study Area. Laurel Creek is the receiving waters for approximately 0.35 square mile in the southeastern portion of the study area. According to PA Code, Title 25, Chapter 93.9L, all watercourses identified within the PEL Study Area have protected water uses for CWF, HQ-CWF, or TSF (i.e., Designated Use). Potter Run has a protected water use for CWF; however, according to the PA DEP's Existing Water Uses list, Potter Run has an elevated status of HQ-CWF. Natural Reproduction Wild Trout and Class A Wild Trout designations were identified in portions of these three watersheds. Additionally, Stocked Trout designations were identified within the Sinking Creek and Little Fishing Creek watersheds. A review of the eMapPA online application's floodplains layer revealed that portions of the PEL Study Area associated with Sinking Creek, Boal Gap Run, Potter Run, Spring Creek, Slab Cabin Run, Cedar Run, Logan Branch, Gap Run, and Little Fishing Creek are located within the mapped Statewide Floodplain. Wetlands located within the floodplain of Wild Trout Streams, or within the floodplain of tributaries thereto, are considered EV.

This predictive wetland and watercourse evaluation is not designed to substitute any formal field investigations detailed in the *USACE Wetland Delineation Manual*, but rather to present data that is adequate for planning purposes. The information is presented as accurately as possible given

the many secondary source datasets available. In addition to planning and design purposes, this predictive wetland and watercourse evaluation will also assist biologists during wetland and watercourse identification and delineation efforts as well as with strategic in-field planning and preparation for future transportation improvement projects that may be developed as part of the NEPA and permitting process, following the PEL Study.

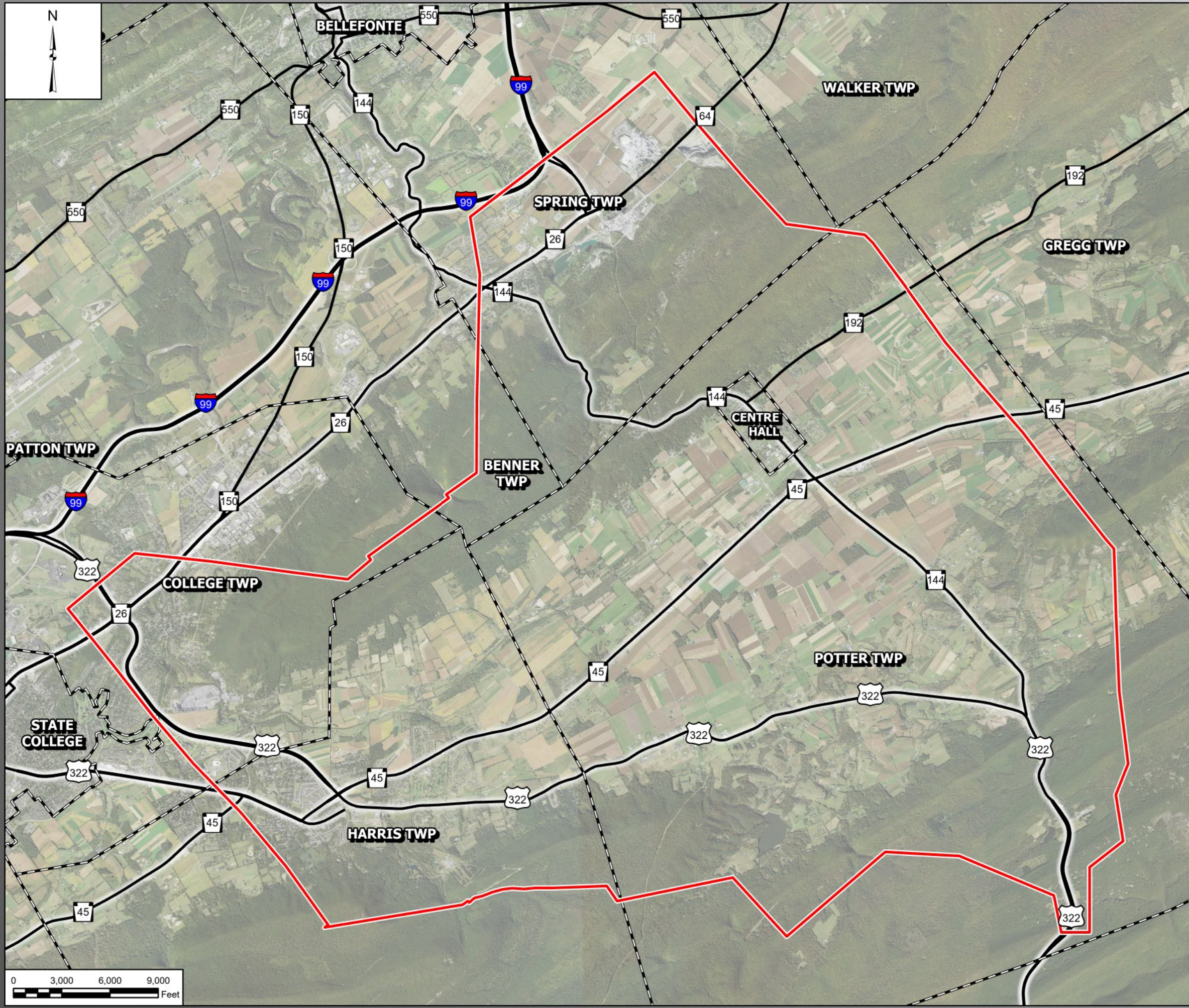
5.0 Preparers

Paul DeAngelo, Senior Principal, Department Manager, Environmental, Skelly and Loy, Inc., A Terracon Company

Doug Meneely, GIS Analyst, Skelly and Loy, Inc., A Terracon Company

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LEGEND

- PEL Study Area
- Municipal Boundaries



INDEX MAP



August 2021

State College Area Connector PEL Study

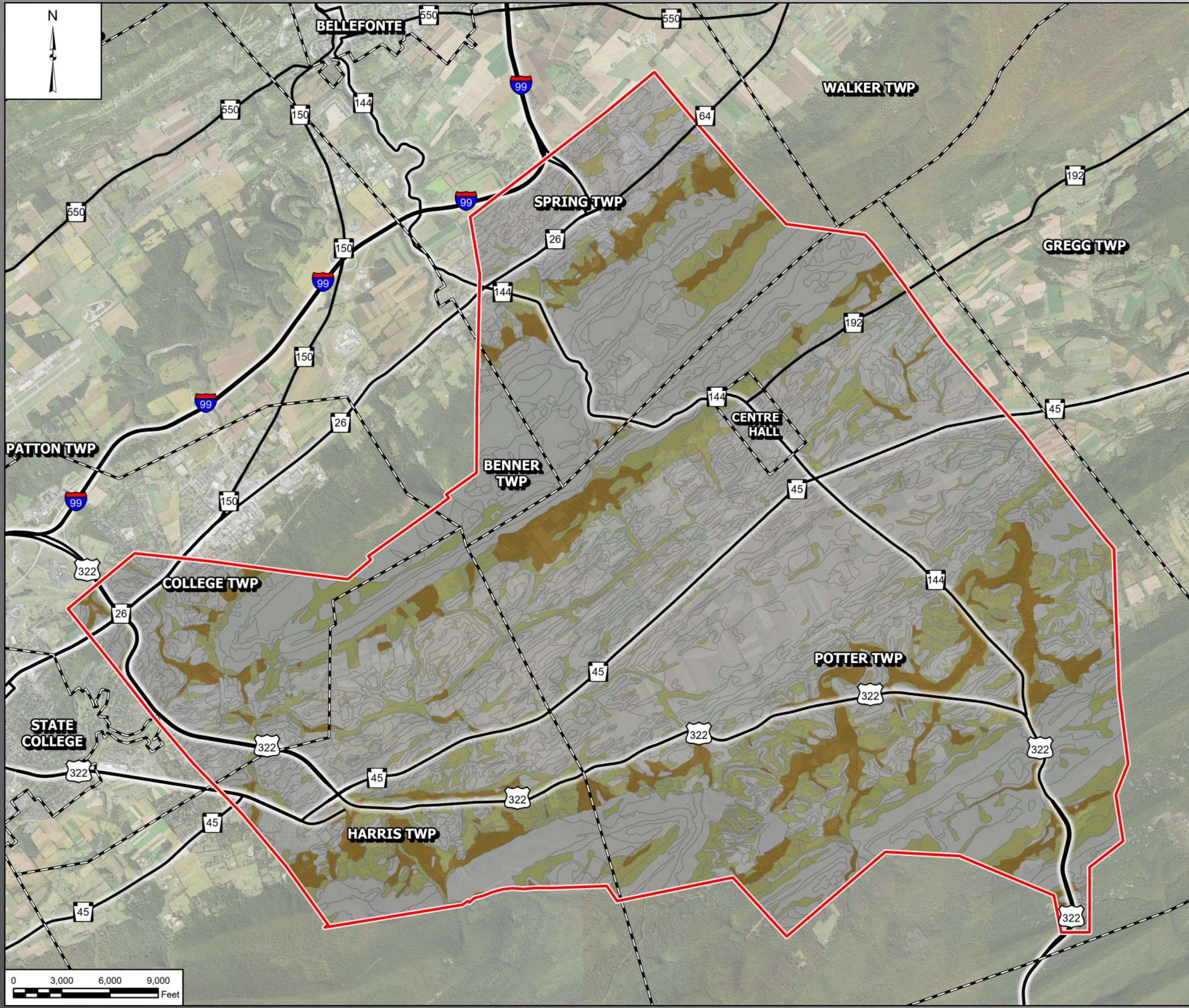
STUDY LOCATION

CENTRE HALL BOROUGH, BENNER, COLLEGE, HARRIS, POTTER, AND SPRING TOWNSHIPS
CENTRE COUNTY, PENNSYLVANIA

Figure 1

1 Inch = 6,000 Feet

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LEGEND

- PEL Study Area
- Municipal Boundaries
- Hydric Soils**
 - Hydric
 - Non-hydric, contains hydric inclusions
 - Non-hydric, no hydric inclusions



INDEX MAP



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State College Area Connector PEL Study

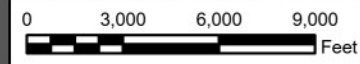
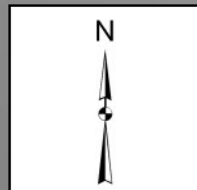
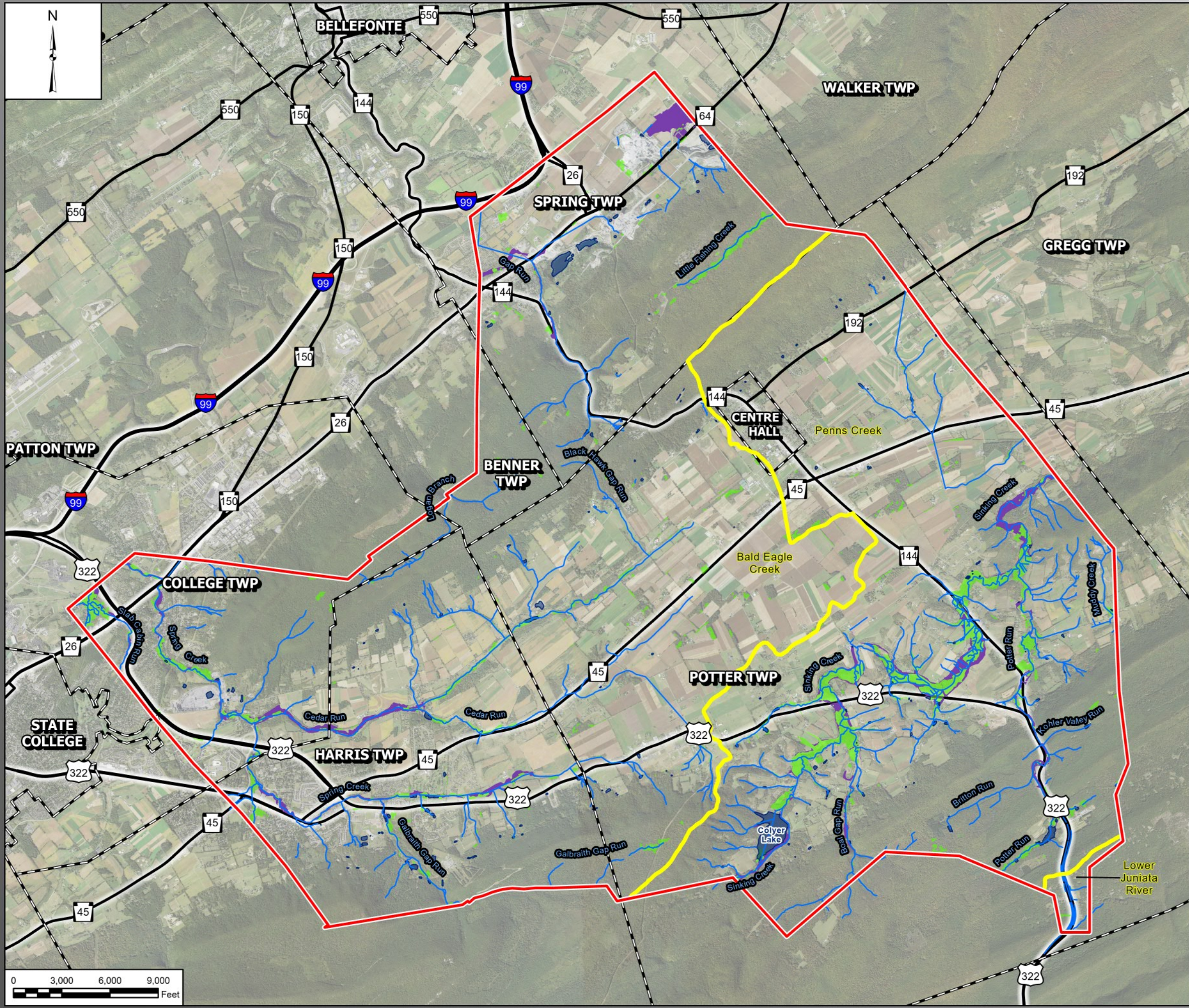
HYDRIC SOILS

CENTRE HALL BOROUGH, BENNER, COLLEGE, HARRIS, POTTER, AND SPRING TOWNSHIPS
CENTRE COUNTY, PENNSYLVANIA

Figure 2

1 Inch = 6,000 Feet

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LEGEND

- PEL Study Area
- Municipal Boundaries
- Watercourses
- Drainage Basins
- Wetlands
- Lakes and Ponds
- Floodplain



INDEX MAP



August 2021

State College Area Connector PEL Study
WETLANDS AND WATERCOURSES
 CENTRE HALL BOROUGH, BENNER, COLLEGE, HARRIS, POTTER, AND SPRING TOWNSHIPS
 CENTRE COUNTY, PENNSYLVANIA

Figure 3

1 Inch = 6,000 Feet

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APPENDIX A: REFERENCES

Appendix A: REFERENCES

Centre County Open Data

- Lakes and Ponds
<https://gisdatacentrecountygov.opendata.arcgis.com/datasets/CentreCountyGov::lakes-2?geometry=-77.875%2C40.756%2C-77.548%2C40.801>
February 2021.
<https://gisdata-centrecountygov.opendata.arcgis.com/datasets/CentreCountyGov::ponds>
February 2021.
- Soils
<https://gisdatacentrecountygov.opendata.arcgis.com/datasets/CentreCountyGov::ssurgo-soils-1?geometry=-80.372%2C40.607%2C-75.146%2C41.333>
February 2021.
- Streams/Hydrography
<https://gisdata-centrecountygov.opendata.arcgis.com/datasets/CentreCountyGov::hydrography-1>
February 2021.

Data Refresh Study Documents

- *Route 322/144/45 Corridors Data Refresh Project, Centre County, Pennsylvania – 2019 Data Refresh Report* (McCormick Taylor).
- *Route 322/144/45 Corridors Data Refresh Project, Centre County, PA– Secondary Source Wetland and Stream Resource Data Collection Memo* (McCormick Taylor, June 29, 2019).
- *South Central Centre County Transportation Study (SCCCTS) - 2002 Delineation and 2004 Streams.*

Pennsylvania Code, Title 25, Chapter 93 listing of protected water uses

<https://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/025/chapter93/s93.9l.html&d=reduce>
February 2021.

Pennsylvania Department of Environmental Protection (PA DEP)

- eMapPA online application
<http://www.depgis.state.pa.us/emappa>
February 2021.
- List of existing water uses
<http://files.dep.state.pa.us/Water/Drinking%20Water%20and%20Facility%20Regulation/WaterQualityPortalFiles/Existing%20Use/EU%20table%20list.pdf>
February 2021.

Pennsylvania Fish and Boat Commission (PFBC)

- Listing of Stocked Trout Waters, Wild Trout Waters (Natural Reproduction), and Class A Wild Trout Streams
<https://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Pages/TroutWaterClassifications.aspx>
February 2021.

Pennsylvania Spatial Data Access (PASDA)

- Modeled Primary Wetlands
<https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=3137>
February 2021.

Readily available (Internet) aerial photography

- <https://datacommons.maps.arcgis.com/apps/View/index.html?appid=10af5f75f9f94f01866359ba398cb6a9>
February 2021.
Google Earth, February 2021.

Soil Survey Geographic Database (SSUVGO)

- https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/?cid=nrcs142p2_053627
February 2021.

U.S. Army Corps of Engineers (USACE)

Wetland Delineation Manual, Technical Report Y-87-1 (1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Eastern Mountains and Piedmont (2012).

U.S. Department of Agriculture (USDA) - Natural Resources Conservation Service's (NRCS)

- Web Soil Survey; Centre County Soil Survey and the Pennsylvania County Listing of Hydric Soils <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
February 2021.

U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) mapping

- <https://www.fws.gov/wetlands/data/mapper.html>
February 2021.

U.S. Geological Survey (USGS) mapping

- Bellefonte, Centre Hall, Mingoville, Spring Mills, and State College
<https://www.mytopo.com/products/quad-maps-state.cfm?state=Pennsylvania>
 February 2021.

GIS DATA SOURCES

Layer Name	Figure	Source	Date
Hydric Soils	Figure 2: Hydric Soils	SSURGO web soil survey and Centre County Open Data	3/18/2020
Wetlands	Figure 3: Wetlands and Streams	All wetland sources combined by S&L	2021
Delineated wetlands (2002)		MTGIS Script	2002-2004
NWI Wetlands		MTGIS	2017
Modeled Wetlands			2013
Lakes and Ponds		Centre County Open Data, NWI, S&L	3/18/2020
Streams		All stream sources combined by S&L	2021
Hydrography (Lines)		Centre County Open Data	2020

**GIS DATA SOURCES
(Continued)**

Layer Name	Figure	Source	Date
CH93 Designated Use	Figure 3: Wetlands and Streams (Continued)	PASDA/Pennsylvania Department of Environmental Protection	2019
CH93 Existing Use		PASDA/Pennsylvania Department of Environmental Protection	2019
Stocked Trout Streams		PASDA/Pennsylvania Fish and Boat Commission	2020
Natural Reproduction Wild Trout Streams		PASDA/Pennsylvania Fish and Boat Commission	2020
Class A Trout Streams		PASDA/Pennsylvania Fish and Boat Commission	2020
Major Watersheds		Centre County Open Data	3/18/2020