

# **POLLUTANT REDUCTION PLAN (PRP)**

## **BUSHKILL TOWNSHIP NORTHAMPTON COUNTY PENNSYLVANIA**

**July 18, 2018  
(Revised March 31, 2020)  
(Revised January 8, 2024)**



**PREPARED BY:**

**BUSHKILL TOWNSHIP  
1114 BUSHKILL CENTER ROAD  
NAZARETH, PA 18064**

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## I. Introduction

Bushkill Township is a rural community located along the southern base of the Blue Mountain between the Boroughs of Wind Gap, Stockertown, and Nazareth in Northampton County, Pennsylvania. The Township is approximately 25.25 square miles in size with a total population of approximately 8,178 according to the 2010 census. Approximately 6,651 acres (10.39 square miles) is classified as Urbanized Area (UA), in accordance with the most recent U.S. Census data. The portion of the UA that contributes stormwater to known stormwater outfalls into streams is approximately 294.82 acres (0.46 square miles); this area is known as the Planning Area for the development of this Pollutant Reduction Plan (PRP). Within the Township, there are approximately 35.67 miles of State Highways and approximately 58.24 miles of Local Township Roads.

This Pollutant Reduction Plan (PRP) was developed for the Township as a requirement of Permit PAI#132219 for their Municipal Separate Storm Sewer System (MS4). The PRP outlines the actions the Township will take to address pollutant loads to the streams within the Township and downstream waterways. These actions include public participation, mapping of outfalls and other discharges, calculation of pollutant loads, implementation of stormwater Best Management Practices (BMPs), and undertaking operations and maintenance (O&M) activities.

## II. Public Participation

Public participation is an essential part of the PRP because it enhances buy-in from residents, business owners, and landowners that may have an impact on pollutant discharges, can uncover missing elements or errors in calculations, and builds cooperative partnerships among the Township and other entities.

The Township advertised the development of the original PRP via Public Notice on July 16, 2018, in the Express Times. The notice ran for 1 day and stated the PRP was available for review and comment from July 18, 2018, through August 17, 2018, from 8:00 am to 4:00 pm at the Township Building. A digital copy was also made available on the Township website. Proof of publication with a copy of the public notice is provided in Appendix A. The public was given 30 days to provide comments on the contents of the PRP. The Township also held a public meeting on August 2, 2018, to receive verbal commentary on the contents of the PRP. A presentation about the PRP was provided by the Township EAC during the regularly scheduled Supervisors' meeting held on August 2, 2018, providing an additional opportunity for comment by the Supervisors and the public.

The Township advertised the development of the revised PRP via Public Notice on February XX, 2024, in the Express Times. The notice ran for 1 day and stated the revised PRP was available for review and comment from February XX, 2024, through March XX, 2024, from 8:00 am to 4:00 pm at the Township Building. A digital copy was also made available on the Township website. Proof of publication with a copy of the public notice is provided in Appendix A. The public was given 30 days to provide comments on the contents of the revised PRP. A presentation about the revised PRP was provided by the Township EAC during the regularly scheduled Supervisors' meeting held on March 7, 2024, providing an additional opportunity for comment by the Supervisors and the public.

## A. Public Notice Language

Public Notice Language – Original PRP:

### **PUBLIC NOTICE**

NOTICE IS HEREBY GIVEN that the Bushkill Township Board of Supervisors will receive public comments on the proposed Pollutant Reduction Plan (PRP) required for the 2018-2023 NPDES Municipal Separate Storm Sewer Systems (MS4) Permit.

The proposed PRP is available for review at the Township Office located at 1114 Bushkill Center Road, Nazareth, PA 18064, from 8:00 a.m. to 4:00 p.m., Monday through Friday, July 18 through August 17, 2018. Digital copies are also available at [www.bushkilltownship.com](http://www.bushkilltownship.com). Requests for copies may be made by contacting the Township at 610-759-1250 or [harr3271@bushkilltownship.com](mailto:harr3271@bushkilltownship.com).

The Township will accept written comments for 30 calendar days from the date of this notice, must be postmarked no later than August 17, 2018, and addressed to Brian Harris, Township Manager, at the address listed above. Email comments may also be submitted to [harr3271@bushkilltownship.com](mailto:harr3271@bushkilltownship.com).

The email subject line shall include “Comments – Bushkill Township PRP.” The Township Board of Supervisors will provide an opportunity for interested parties to provide comments during their regularly scheduled meeting on August 2, 2018, at 6:00 p.m. at the address listed above.

Brian Harris, Township Manager

Public Notice Language – Revised PRP:

### **PUBLIC NOTICE**

NOTICE IS HEREBY GIVEN that the Bushkill Township Board of Supervisors will receive public comments on the proposed Pollutant Reduction Plan (PRP) required for the 2019-2024 NPDES Municipal Separate Storm Sewer Systems (MS4) Permit.

The proposed PRP is available for review at the Township Office located at 1114 Bushkill Center Road, Nazareth, PA 18064, from 8:00 a.m. to 4:00 p.m., Monday through Friday, February **XX** through March **YY**, 2024. Digital copies are also available at [www.bushkilltownship.com](http://www.bushkilltownship.com). Requests for copies may be made by contacting the Township at 610-759-1250 or [kreider@bushkilltownship.com](mailto:kreider@bushkilltownship.com).

The Township will accept written comments for 30 calendar days from the date of this notice, must be postmarked no later than February **XX**, 2024, and addressed to Belinda Roberts, Township Manager, at the address listed above. Email comments may also be submitted to [kreider@bushkilltownship.com](mailto:kreider@bushkilltownship.com) until February **XX**, 2024.

The email subject line shall include “Comments – Bushkill Township PRP.” The Township Board of Supervisors will provide an opportunity for interested parties to provide comments during their regularly scheduled meeting on March 7, 2024, at 6:00 p.m. at the address listed above.

Belinda Roberts  
Township Manager

## **B. List of Public Comments**

No public comments were received by the Township on the original PRP.

No public comments on the revised PRP were received by the Township. A public presentation on the revised plan was provided by the Township EAC on XXXXXX, 2024, at which the following comments and/or questions were posed by attendees:

1. XXXX?
2. XXXX?
3. XXXX?

## **C. List of Comments and Record of Consideration**

No public comments were received by the Township on the original PRP, and therefore no amendments based on public comments were necessary.

The initial submission of the original Pollutant Reduction Plan was reviewed by the Pennsylvania Department of Environmental Protection (PA DEP), with the following comments and recommendations, dated May 1, 2019, for consideration:

- The existing load calculations show that approximately 223.16 acres of the township were included in the planning area. When using USGS’s StreamStats interactive map to delineate the portions within the township, the result was approximately 1,220 acres. This shows that approximately 1,000 acres were parsed out from the planning area. All parsed areas must be shown on a map and an explanation must be provided in the PRP for each site that demonstrates there is no municipally-sourced flow in the discharge. Please revise the PRP to include this information and/or add any appropriate sections of the township to the planning area. Parsing guidelines can be found in Attachment A of the DEP’s PRP instructions document (doc No. 3800-PM-BCW0100k).
- Several municipal streets and portions of municipal streets were not included in the PRP planning area (e.g. Hillendale Avenue, Cherry Hill Road, Young Road, W. Beil Avenue, Gower Road, Knauss Road, and many others). Since municipal streets are considered MS4 conveyances, they should be included in the planning area along with all areas that drain to them.
- After performing a brief search on Google Maps Street View, several stormwater inlets were found that were not included on the maps submitted to DEP. Please note that the identification of inlets and all other stormwater infrastructure is a requirement of the

permit (MCM #3, BMP #3) and is also required to develop an accurate PRP. A few Street View pictures are enclosed with this letter.

In consideration of these comments and additional field and desktop review of materials and conditions, the original plan was revised as follows:

- Two (2) additional points of MS4 regulated discharge were added to the plans within the Bushkill Creek Watershed, in accordance with the most recent PA DEP guidance, which increased the Planning Area from 223.16 acres to 254.45 acres (since revised to be 294.82 acres).
- Portions of the Urbanized Area determined to not qualify as Planning Area for Bushkill Township, were “parsed out,” as shown on Figure 1, with appropriate supporting notation provided for each area. Many of the Township roadways mentioned in the comment letter do not have shoulders, curbs, or stormwater infrastructure and do not concentrate stormwater as discharges into surface waters. Therefore, these roadways were parsed out of the Planning Area. Inlets along Hillendale and Siegfried Avenues and their respective drainage areas were added to the Planning Area, as previously noted.
- The Planning Area for the Shoeneck Creek Watershed (which is part of the Bushkill Creek HUC 12 Watershed) was corrected to exclude Urbanized Area that was previously and mistakenly included as Planning Area, being outside of the Shoeneck Creek Watershed.

The following list includes responses in consideration of comments from the public presentation of the revised plan to the Township:

1. XXXX? Response: XXXX.
2. XXXX? Response: XXXX.
3. XXXX? Response: XXXX.

### III. Mapping

#### A. Bushkill Township’s Urbanized Area and MS4 Responsibilities

The Township is located within two (2) HUC12 watersheds, including the Bushkill Creek Watershed and the East Branch Monocacy Creek Watershed (see Figures 1 and 2). The Township’s Urbanized Area (UA) is found in both HUC12 Watersheds and contains sixty-four (64) MS4 regulated discharges with a total drainage area of 958.86 acres (1.50 square miles), as shown in Figure 1. Remaining lands within the UA are either State parkland or are in private ownership (non-municipal) or have been determined to not produce concentrated discharges of stormwater runoff to or from municipal land or infrastructure into “waters of the Commonwealth/United States.” These excluded areas are labeled as “Parsed Out Area” on the MS4 Outfall Location Map, as presented in Figure 1, with a table on the map indicating the supporting descriptions for exclusion of each area from the Planning Area. The Planning Area within the UA is limited to the drainage areas of only eighteen (18) MS4 regulated discharges within the watersheds of the Shoeneck Creek and the unnamed tributary to the East Branch Monocacy Creek, which are the only streams impaired by siltation associated with urban runoff. Bushkill Creek, with exception of the sub-watershed of the Shoeneck Creek, is only impaired by

pathogens, including downstream reaches within five (5) miles, and therefore is not subject to sediment removal requirements. The total drainage area for Planning Area is 294.82 acres (0.46 square miles).

# MS4 Outfall Locations Bushkill Township, Northampton County



Figure 1: Map of Urbanized Area (UA) for Bushkill Township



## B. Land Uses within the MS4 Planning Area

Land uses within the MS4 Planning Area are comprised of primarily residential and agriculture, with lesser areas of open land, forest, commercial, institutional, and industrial land uses. The land uses determined through the use of MapShed modeling software are summarized below in Table 1 and are shown in Appendix B.

*Table 1. Land Use Areas within the MS4 Planning Area for Bushkill Township*

Land Use Type	Bushkill Creek HUC12 Area (acres)	East Branch Monocacy Creek HUC12 Area (acres)	Total MS4 Planning Area (acres)
Hay/Pasture	---	1.00	1.00
Cropland	79.60	59.91	139.51
Mixed Forest	0.13	10.00	10.13
Water	1.10	---	1.10
Low-Density Residential	20.37	49.72	70.09
Medium-Density Residential	21.72	27.79	49.51
High-Density Residential	---	---	---
Low-Density Mixed Urban	7.20	0.23	7.43
Medium-Density Mixed Urban	---	0.20	0.20
High-Density Mixed Urban	2.60	3.20	5.80
Open Land	4.85	5.20	10.05
<b>TOTAL MS4 PLANNING AREA</b>	<b>137.58</b>	<b>157.24</b>	<b>294.82</b>

## C. MS4 Zone

The Township has only two (2) MS4 Zones, with the respective Urbanized Areas draining into the Bushkill Creek and East Branch Monocacy Creek HUC12 Watersheds. The majority of the Township and the Urbanized Areas are within the Bushkill Creek HUC12 Watershed. A smaller and more rural Urbanized Area is found in the southwestern corner of the Township which drains into the East Branch Monocacy Creek HUC12 Watershed. Urbanized Areas are comprised primarily of croplands and low and medium density residential land uses, with lesser areas classified as forest, open land, low density mixed urban, medium density mixed urban, high density residential, high density mixed urban, and hay/pasture. Based on field evaluations conducted during 2003-2018, there are many smaller land areas within the Township's Urbanized Areas that do not contribute concentrated flows to Township-owned or operated facilities, or which do not contribute concentrated flows from Township-owned or operated facilities into nearby streams, and therefore do not have MS4 regulated outfalls and are not part of the Planning Area for the development of this Pollutant Reduction Plan. There are also considerable open space lands and preserved farmlands within the Urbanized Area which do not have any MS4 regulated outfalls. The mapping provided in Appendix B shows the MS4 regulated outfalls and respective drainage areas within Bushkill Township.

## D. Surface Waters

Ultimately, all stormwater discharges from the Urbanized Area (UA) in the Township are to the Monocacy Creek, Lehigh River, Bushkill Creek, and Delaware River. The Monocacy Creek (including East Branch Monocacy Creek) is classified as High Quality – Cold Water Fishes (HQ-CWF) and Migratory Fishes (MF) and is listed as being impaired for recreational use due to pathogens and for aquatic life use due to siltation and habitat alterations. The Lehigh River is classified as Warm Water Fishes (WWF) and Migratory Fishes (MF) and is listed as being impaired for aquatic life use due to siltation, suspended solids, and organic enrichment/low dissolved oxygen, and for fish consumption due to PCBs. The Bushkill Creek is classified as High Quality - Cold Water Fishes (HQ-CWF) and Migratory Fishes (MF) and is listed as being impaired only for recreational use due to pathogens. The Delaware River is classified as Warm Water Fishes (WWF) and Migratory Fishes (MF) and is listed as being impaired for fish consumption due to mercury.

MS4 outfall discharges within the Township are either directly into the Bushkill Creek or are found in the drainage areas of smaller contributory streams, including: Shoeneck Creek (WWF, MF), Sobers Run (EV, MF), unnamed tributaries to Bushkill Creek (HQ-CWF, MF), and unnamed tributaries to the East Branch Monocacy Creek (HQ-CWF, MF) to the Lehigh River (WWF, MF). The only streams listed for impairment by sediments are Shoeneck Creek and the Unnamed Tributary to East Branch Monocacy Creek. The Monocacy Creek, to which the East Branch Monocacy Creek discharges, is located entirely outside of Bushkill Township. The Pennsylvania Department of Environmental Protection (DEP) has included these waterways on their MS4 Requirements Table, last revised March 5, 2018, as indicated below in Table 2:

*Table 2. MS4 Requirements Table for Bushkill Township*

MS4 Name	NPDES ID	Individual Permit Required	Reason	Impaired Downstream Waters Names	Requirement(s)	Other Cause(s) of Impairment
Bushkill Township	PAI132219	Yes	IP	East Branch Monocacy Creek	Appendix E-Siltation	None
				Monocacy Creek	Appendix E-Siltation	Other Habitat Alterations (4c)
				Bushkill Creek	Appendix B-Pathogens	None
				Shoeneck Creek	Appendix E-Siltation	Water/Flow Variability (4c)

NOTE: In watersheds where sediment is listed as a concern, the MS4 permittee must reduce sediment loading by 10 percent; where nutrients are listed as a concern, the MS4 permittee must reduce phosphorus by 5 percent and nitrogen by 3 percent. PA DEP assumes that the 5 percent reduction for phosphorus to be met with the 10 percent reduction in sediment.

## IV. Pollutant Loadings

### A. Methods

MapShed Version 1.5.1 was used to calculate the existing sediment load within the designated MS4 Planning Area of Bushkill Township. Loads from individual drainage areas were aggregated for each of the two (2) HUC12 watersheds within the Urbanized Area of Bushkill Township (see

Figure 2). Urbanized Areas with MS4 outfalls into streams impaired by siltation, however, are only found within the East Branch Monocacy Creek HUC12 and within the Shoeneck Creek drainage area of the Bushkill Creek HUC12. All other MS4 regulated outfalls within the Township drain to streams that are not listed as being impaired by sediments, including downstream reaches within five (5) miles. Planning Areas within the Township were modeled respectively for each of the two (2) HUC12 watersheds.

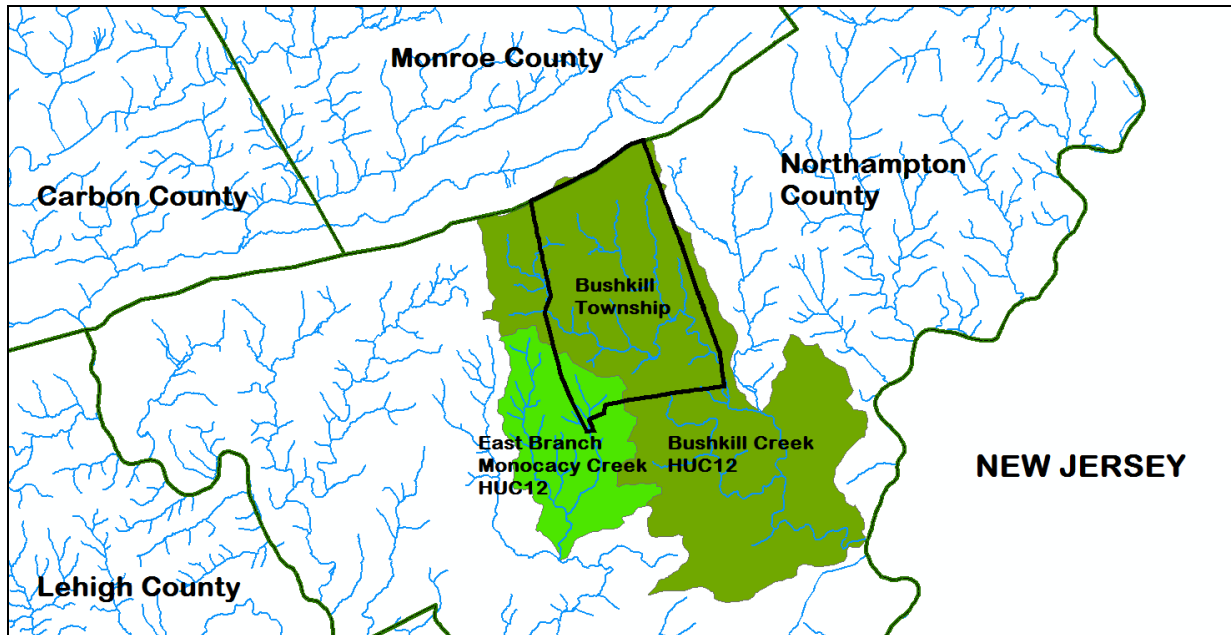


Figure 2: Map of MapShed Basin for Bushkill Township

## B. Existing Stormwater BMPs in the Planning Area

Bushkill Township was historically an agricultural community located between the Boroughs of Wind Gap and Nazareth. In recent decades, many farms were converted to residential development and other land uses such as commercial, recreational, and institutional. Route 33 was constructed along the Township’s eastern boundary during the 1950s and was then connected to Interstate 78 during the early 2000s, improving access to the Township and driving land development primarily as a bedroom community for the New York City and Northern New Jersey metropolitan areas. The majority of the newer land development activities required varying degrees of stormwater management and water quality protection, including older facilities aimed largely at conveyance and flood protection to newer facilities aimed at improving and protecting water quality. Bushkill Township required groundwater infiltration from all structures, primarily through the use of “drywells” since the 1980s, to help sustain groundwater and reduce peak flows and nonpoint source pollution. Conversion of agricultural lands to more stable land uses with improved stormwater management likely has contributed to the Bushkill Creek being listed as “attaining” for sediment pollution. Conversely, the lack of conversion and ongoing agricultural land use in the East Branch Monocacy Creek (subwatershed of the Monocacy Creek) and Shoeneck Creek (subwatershed of the Bushkill Creek) watersheds, as well as ongoing quarry activity and urbanized land use in the Shoeneck Creek watershed, has contributed to a listing of

non-attaining for sediment pollution. These older land uses did not have good stormwater management or sediment pollution control.

### C. Pollutant Load Calculation

To model the existing sediment load for the MS4 Planning Areas in Bushkill Township using the MapShed program, base model runs were completed for the Bushkill Creek and East Branch Monocacy Creek HUC12 watersheds. The Urbanized Area of the Township is primarily within the Bushkill Creek HUC12 watershed, with the remainder being a relatively small area within the East Branch Monocacy Creek HUC12 watershed. Sediment impairment, however, is only listed for the Shoeneck Creek subwatershed of the Bushkill Creek and the East Branch Monocacy Creek. The Bushkill Creek drains and discharges directly into the Delaware River near the City of Easton. The East Branch Monocacy Creek drains and discharges into the Monocacy Creek, which in turn discharges into the Lehigh River and then into the Delaware River in the City of Easton. Therefore, the base model runs were conducted separately for these two distinct watersheds.

MapShed was used to determine land uses and sediment runoff coefficients, or loading rates, for the Urbanized Area and Planning Areas within Bushkill Township. ArcMap was then used to develop drainage areas to all previously identified MS4 outfalls, for which the same land use data were applied to determine the sediment load for the Planning Area within the Urbanized Area. The Existing Pollutant Loading for sediment was then calculated for the Planning Area using the previously derived land use loading coefficients. See Table 3, below, for land use loading rates and respective pollutant load calculations.

Following a thorough review of mapping and records, as well as field evaluations, the overall Planning Area does not contain any active, functioning, and maintained stormwater Best Management Practices designed and implemented for water quality improvement. Therefore, no credit for sediment loading reduction was applied to the calculation of the Existing Sediment Load from the Planning Area.

*Table 3. MapShed Sediment Land Use Loading Rates and Calculated Pollutant Loads for Planning Areas within the Bushkill Creek and East Branch Monocacy Creek HUC12 Watershed Areas*

Land Cover	Sediment Loading Rate (lbs/ac/yr)	Area (ac)	Sediment Load (lbs/yr)
<b>Bushkill Creek HUC12</b>			
Cropland	971.7	79.60	77,351.25
Mixed Forest	8.8	0.13	1.14
Water	4.0	1.10	4.41
Low-Density Residential	39.0	20.37	794.57
Medium-Density Residential	170.0	21.72	3,691.97
Low-Density Mixed Urban	39.0	7.20	280.91
High Density Mixed Urban	170.0	2.60	442.66
Open Land	124.5	4.85	603.41
<b>Subtotal</b>		<b>137.58</b>	<b>83,170.32</b>

<b>East Branch Monocacy Creek HUC12</b>			
Hay/Pasture	196.2	1.00	196.20
Cropland	1,915.0	59.91	114,727.65
Mixed Forest	17.2	10.00	172.00
Low-Density Residential	39.7	49.72	1,973.88
Medium-Density Residential	170.0	27.79	4,724.30
Low-Density Mixed Urban	39.7	0.23	9.13
Medium-Density Mixed Urban	169.9	0.20	33.98
High-Density Mixed Urban	170.0	3.20	544.00
Open Land	216.0	5.20	1,123.20
<b>Subtotal</b>		<b>157.24</b>	<b>123,504.35</b>
<b>TOTAL</b>		<b>294.82</b>	<b>206,674.66</b>

Based on these existing load calculations, it was determined that the Township's total existing sediment loading is 206,674.66 lbs/year.

#### **D. Pollutant Load Reduction Requirements**

Based on these existing load calculations it was determined that the Township's existing sediment loading is 206,674.66 lbs/year. Based on the MS4 Program requirement to reduce sediment pollution by at least 10% from the Planning Area, the minimum sediment reduction required is 20,667.47 lbs/year, as summarized below in Table 4.

*Table 4. Pollutant Load Reduction Requirements for the MS4 Planning Area within Bushkill Township*

<b>Planning Area Name</b>	<b>Total Acres</b>	<b>Land Use Sediment Load (lbs)</b>
<b>Bushkill Creek HUC12 Watershed</b>		
Existing Load	137.58	83,170.32
Existing BMP Load Reduction	0	0
Finalized Existing Load		83,170.32
Required 10% Reduction		8,317.03
<b>East Branch Monocacy Creek HUC12 Watershed</b>		
Existing Load	157.24	123,504.35
Existing BMP Load Reduction	0	0
Final Existing Load		123,504.35
Required 10% Reduction		12,350.4
<b>TOTAL FINAL EXISTING LOAD</b>		<b>206,674.66</b>
<b>TOTAL REQUIRED 10% REDUCTION</b>		<b>20,667.47</b>

## **V. BMPs Selected to Achieve the Minimum Required Reductions in Pollutant Loading**

Based on the 10% sediment load reduction targets established above, Bushkill Township has identified potential BMPs to meet the minimum load reductions during the next 5-year permit term. BMPs for stormwater management were determined, based on available public land, existing facilities, and potential for pollutant removal. All potential stormwater BMPs listed in the BMP Effectiveness Values table provided by PA DEP were considered. A list of the BMPs selected for Bushkill Township to meet sediment loading reduction goals is provided below in Table 5, with a location map provided in Appendix D.

### **A. Summary of Alternatives and Selection of BMPs**

The Township identified and evaluated BMPs, according to the following criteria:

- Sediment reduction
- Cost-effectiveness of pollutant reduction
- Ownership (public vs. private land, single party vs. multi-party ownership)
- Funding and workforce availability
- Community benefit (site accessibility, flooding relief, aesthetics, etc.)
- Connectivity to other completed or prospective stormwater BMPs
- Timeframe to implement

The purpose of the evaluation was to determine the most cost-effective BMPs that would benefit water quality and the community. The highest priority BMPs are included in this PRP. The BMPs selected are a list of good opportunities that the Township has identified and may use to meet their required sediment reduction. The Township is not committing to implementing all the BMPs listed in this PRP, as that would exceed their required reduction. The actual implemented BMPs will be based on further site evaluation, negotiations with stakeholders, detailed design criteria, permitting complexity, and cost. The plan will be adjusted and revised, as new opportunities arise and as necessary to accomplish reduction goals with the most cost-effective BMPs.

The Township will continuously evaluate cost-effective opportunities to meet required reductions. These could include working jointly with other municipalities on a joint project if viable opportunities arise. The Township will also evaluate opportunities to work with future private developers or land development applicants where cooperative efforts merit consideration. As new opportunities are selected for implementation to meet sediment reduction requirements, this PRP will be amended, advertised for public comment, and resubmitted to PA DEP.

### **B. Pollutant Removals**

The total minimum sediment reduction required for the Township is 20,667.47 lbs/year, with 8,317.0 lbs/year and 12,350.4 lbs/year for the Bushkill Creek and East Branch Monocacy Creek HUC12 Watersheds, respectively, as shown above in Table 4.

Since MapShed was used to determine pollutant loading coefficients for the land uses within the Township and to calculate the existing loads, the same data were used to calculate the load reductions resulting from the implementation of the prospective stormwater BMPs. Sediment removal efficiency values were taken from the PA DEP BMP Effectiveness Values table (3800-PM-BCW0100M) and applied to the pollutant loadings calculated for each prospective BMP to determine the reductions expected for each prospective BMP. Watersheds for prospective BMPs were developed in ArcMap using available Geographic Information Systems (GIS) data, including parcels, 2-foot Lidar topography, buildings, and land use data.

For the Planning Area within the Bushkill Creek HUC12 watershed, three (3) prospective BMPs would remove sediment at 32,232.7 lbs/year, which subtracted from the required sediment reduction of 8,317.0 lbs/year results in a surplus removal value of 23,915.7 lbs/year, assuming that all potential BMPs would be implemented.

For the Planning Area within the East Branch Monocacy Creek HUC12 watershed, five (5) prospective BMPs would remove sediment at 65,788.9 lbs/year, which subtracted from the required sediment reduction of 12,350.4 lbs/year results in a surplus removal value of 53,438.5 lbs/year, assuming that all potential BMPs would be implemented.

The stormwater BMPs listed in Table 5 will be considered for implementation by the Township to meet their required sediment reduction. The Township is not committing to implement each BMP listed. BMPs will be chosen based on additional evaluation of cost-benefit once more detailed planning has been completed. The combination of selected BMPs will meet the required 10% reduction for sediment load from the Planning Area within the Township and will be implemented by the next 5-year permit term, or as formally extended. A summary of all the currently prospective BMPs and how they meet the required 10% load reduction is shown below in Table 5. Calculations for BMP sediment load reductions are provided in Appendix C. BMP project locations are shown in Appendix D. BMP designs will be added to this PRP as Appendix E, as they are completed, approved, and implemented.

To meet the current sediment removal requirement of 10% for the entire Planning Area, the Township intends to implement the following stormwater management BMPs:

- BMPs 060 and 061 for Agricultural Conversions in the Shoeneck Creek Watershed on 52.1 acres on the Heintzelman Farm that is Township-owned (see Section IV.B. of this Plan) to remove 30,871.9 lbs/year of sediment through permanent conversion of conventional to “no till, high residue” farming practices. Implementation of this BMP will exceed the Township’s 10% reduction requirement for the Bushkill Creek HUC12 Watershed, with a surplus of 22,554.9 lbs/year.
- BMPs 048 and 048A for Agricultural Conversions in the East Branch Monocacy Creek HUC12 Watershed on 31.0 acres on the Beltz Farm that is Township-owned (see Section IV.B. of this Plan) to remove 36,244.1 lbs/year of sediment through permanent conversion of conventional to “no till, high residue” farming practices. Implementation of this BMP will exceed the Township’s 10% reduction requirement for the Bushkill Creek Watershed, with a surplus of 23,893.7 lbs/year.

Since 2005, Bushkill Township acquired two (2) farms for Open Space Preservation, identified as the Heintzelman Farm (PINs J7-8-3C, J7-8-3, and J7-8-24) and the Beltz Farm (PIN J7-2-22) the former being located in the Shoeneck Creek Watershed along West Beil Road and the latter being located in the UNT to East Branch Monocacy Creek Watershed along Knauss Road. The farmable acreage on both farms have remained in active agriculture with conventional farming practices under leases to local farmers since acquisition and neither has agricultural restrictions through deed language, easements, or approved agricultural plans (e.g., Conservation Plan, Nutrient Management Plan, etc.). Normal requirements for nutrient management and drainage control apply. Copy of the current Conservation Plans are included as Appendix F – Conservation Plans. For the purposes of this Plan, the preexisting condition for farming practices is considered to be “No-till, Low Residue,” noting that the Conservation Plan for the Beltz Farm called only for “No-till” farming and there was not a plan developed for the Heintzelman Farm base on input from the Northampton County Conservation District. Following recent discussions with PA DEP, a Conservation Plan for the Heintzelman Farm was developed and contains the same provisions as those specified for the Beltz Farm. It should be noted that Bushkill Township has had different leaseholders for these farms for the past several years since acquisition, with everything from conventional plowing through “No-till, Low Residue” farming being practiced. In anticipation of using the Agricultural BMP, “No-till, High Residue” farming for both farms as part of this Pollutant Reduction Plan, the Township’s most recent lease agreement was developed to require this practice, specifically as, “No-till, High Residue Minimum Soil Disturbance (HRMSD) farming per USDA-NRCS and Chesapeake Bay Program guidance and specifications shall be performed on the leased area.” See Appendix G – Sample Lease Agreement.

Bushkill Township, as the landowner for these farms, will employ the advanced farming practice of “No-till, High Residue” farming to further improve sediment removal from agricultural runoff by an additional 61% removal over the current 18% removal associated with “No-till, Low Residue” farming. This additional sediment removal accounts for an additional 36,244.1 lbs/year of sediment removal for the 31.0 acres of crop farm field area that drains to the BMPs 048 and 048A discharge points at the Beltz Farm and 30,871.9 lbs/year of sediment removal for the 52.1 acres of crop farm field area that drains to the BMPs 060 and 061 discharge points at the Heintzelman Farm. The Township will require the “No-till, High Residue” practice for the entire farm in all future lease agreements with local farmers (see Appendix G – Sample Lease Agreement). Copies of applicable lease agreements and evaluations of conditions and sediment removal will be included as part of MS4 annual reports to demonstrate ongoing compliance.

If crop farming would ever be discontinued for any portion of the farm fields within the drainage areas to BMPs 048, 048A, 060, and 061, the Township would immediately establish the farm fields as managed meadow which would have a lower sediment export coefficient than “No-till, High Residue” farming, as necessary to meet the 10% sediment reduction goal established for this Pollutant Reduction Plan. Any such change would be discussed with PA DEP and reported in the respective MS4 annual reports.

### **C. Operation and Maintenance Requirements**

With regard to existing and future stormwater BMPs that may be constructed on private property and not managed by the Township, the Township’s Stormwater Management Ordinance requires



legally binding Operation and Maintenance (O&M) provisions which must be completed for facilities not dedicated to or accepted by the Township. The Township's MS4 permit indicates and requires regular inspection by facility owners and Township staff at least one (1) time during each 5-year permit term. The Stormwater Management Ordinance also specifies regular inspection intervals by the owners, who are responsible for maintenance under various situations. Operation and Maintenance requirements for all stormwater management BMPs implemented for meeting the required MS4 Program pollutant reductions, including responsible parties, activities, and schedules are listed below in Table 5. The Township will be responsible for implementation of selected BMPs, as well as for regular inspections, sediment removal, and reconstruction of facilities, as needed to maintain full efficiency and functionality for sediment removal.

Table 5. Summary of Prospective BMPs in the Planning Areas of Bushkill Township

BMP ID	BMP Type	Sediment Load Reduction (lbs/yr)	Percent of Total Reduction	Landowner	Installation Responsibility	Funding Mechanism	Operation & Maintenance Responsibility	Operation & Maintenance Activities/Schedule
<b>Bushkill Creek HUC12 Watershed</b>								
039	Bioretention Basin A/B Soils w/Underdrain	1,360.8	4.22%	Terrence G Field and Tara Budinetz 227 Heather Lane Nazareth, PA 18064-8204 Parcel ID: J8-1-9Q	Township	Stormwater Fee/Grant Funds	Township	Monthly, perform trash removal, inspect outlet for obstructions/clogging, and inspect inlet grates. Quarterly, street sweep parking lot. Annually, skim sand media and pump oil and grit from sediment chamber (once 50% full). Every two to three years, replace sand media (or as needed).
060	Agricultural Conversion	13,105.4	40.66%	Bushkill Township 1114 Bushkill Center Road Nazareth, PA 18064 Parcel ID: J7-8-3C and J7-8-24	Township/ Farmer (lessee)	Stormwater Fee/Grant Funds/General Fund	Township/ Farmer (lessee)	High Residue Minimum Soil Disturbance (HRMSD) farming per USDA-NRCS and Chesapeake Bay Program guidance and specifications.
061	Agricultural Conversion	17,766.6	55.12%	Bushkill Township 1114 Bushkill Center Road Nazareth, PA 18064 Parcel ID: J7-8-3C and J7-8-3	Township/ Farmer (lessee)	Stormwater Fee/Grant Funds/General Fund	Township/ Farmer (lessee)	High Residue Minimum Soil Disturbance (HRMSD) farming per USDA-NRCS and Chesapeake Bay Program guidance and specifications.
Subtotals		32,232.7	100.00%					
<b>East Branch Monocacy Creek HUC12 Watershed</b>								
046	Bioretention Swale	26,951	40.97%	David Belzner and Deborah Christian 221 Gower Road Parcel ID: J7-6-4C Marisol Passy 217 Gower Road Parcel ID: J7-6-4D Enrique and Amy Lirag 213 Gower Road Parcel ID: J7-6-4E Steven and Lynda Guarino 209 Gower Road Parcel ID: J7-6-4F Brian Andres and Mary Allocco 205 Gower Road Nazareth, PA 18064-8780 Parcel ID: J7-6-4G	Township	Stormwater Fee/Grant Funds	Township	Annually, cut back perennial plants. Twice per year, check vegetation for condition, remove woody vegetation, remove accumulated sediments.
047	Bioretention Basin A/B Soils w/Underdrain	2,354.2	3.58%	Richard and Brianna Villani 482 Arthurs Court Nazareth, PA 18064-8816 Parcel ID: J7-2-23F	Township	Stormwater Fee/Grant Funds	Township	Monthly, perform trash removal, inspect outlet for obstructions/clogging, and inspect inlet grates. Quarterly, street sweep parking lot. Annually, skim sand media and pump oil and grit from sediment chamber (once 50% full). Every two to three years, replace sand media (or as needed).
048	Agricultural Conversion	25,052.9	38.08%	Bushkill Township 1114 Bushkill Center Road Nazareth, PA 18064 Parcel ID: J7-2-22	Township/ Farmer (lessee)	Stormwater Fee/Grant Funds/General Fund	Township/ Farmer (lessee)	High Residue Minimum Soil Disturbance (HRMSD) farming per USDA-NRCS and Chesapeake Bay Program guidance and specifications.
048A	Agricultural Conversion	11,191.2	17.01%	Bushkill Township 1114 Bushkill Center Road Nazareth, PA 18064 Parcel ID: J7-2-22	Township/ Farmer (lessee)	Stormwater Fee/Grant Funds/General Fund	Township/ Farmer (lessee)	High Residue Minimum Soil Disturbance (HRMSD) farming per USDA-NRCS and Chesapeake Bay Program guidance and specifications.
050	Bioretention Basin A/B Soils w/Underdrain	239.5	0.36%	William and Marsha McGuire 504 Nolf Road Nazareth, PA 18064-8889 Parcel ID: J7-2-6A	Township	Stormwater Fee/Grant Funds	Township	Monthly, perform trash removal, inspect outlet for obstructions/clogging, and inspect inlet grates. Quarterly, street sweep parking lot. Annually, skim sand media and pump oil and grit from sediment chamber (once 50% full). Every two to three years, replace sand media (or as needed).
Subtotals		65,788.9	100.00%					
<b>TOTALS</b>		<b>98,021.6</b>	<b>100.00%</b>					

## **VI. Summary**

Bushkill Township plans to complete the planning and permitting stages of the listed projects by early-2024 to help ensure completion within the five-year permit term, or as dictated by their approved permit. The Township desires to ensure that the projects will be designed to meet the current and upcoming requirements and reduction goals, which may mean that this PRP will be revised as design and permitting are completed. Additional BMPs will be added to the plan, as necessary or as opportunities present, to improve stormwater management within the Township. Updates on each of the proposed BMPs and the implementation status of the PRP will be included in all future MS4 reporting submitted to PA DEP. The Township is currently evaluating implementation of a stormwater fee to fund the installation of all prospective BMPs. Whenever practicable, the Township will apply for available funding for stormwater improvements. Fee revenues may serve as matching funds for potential grant funding where required. The Township may also use money from other available sources.

## **Appendix A**

### **Public Notice**

1164657  
4572022

**PUBLIC NOTICE**

NOTICE IS HEREBY GIVEN that the **Bushkill Township Board of Supervisors** will receive public comments on the proposed Pollutant Reduction Plan (PRP) required for the 2018-2023 NPDES Municipal Separate Storm Sewer Systems (MS4) Permit.

The proposed PRP is available for review at the Township Office located at 1114 Bushkill Center Road, Nazareth, PA 18064, from 8:00 a.m. to 4:00 p.m., Monday through Friday, July 18 through August 17, 2018. Digital copies are also available at [www.bushkilltownship.com](http://www.bushkilltownship.com). Requests for copies may be made by contacting the Township at 610-759-1250 or [harr3271@bushkilltownship.com](mailto:harr3271@bushkilltownship.com).

The Township will accept written comments for 30 calendar days from the date of this notice, must be postmarked no later than August 17, 2018, and addressed to Brian Harris, Township Manager, at the address listed above. Email comments may also be submitted to [harr3271@bushkilltownship.com](mailto:harr3271@bushkilltownship.com).

The email subject line shall include "Comments - Bushkill Township PRP". The Township Board of Supervisors will provide an opportunity for interested parties to provide comments during their regularly scheduled meeting on August 2, 2018, at 6:00 p.m. at the address listed above.

Brian Harris, Township Manager

**AFFIDAVIT**

State of Pennsylvania  
County of Northampton

**Amanda Duane**, being duly sworn, says that (s)he is connected with The Express Times, a newspaper circulating in Lehigh and Northampton Counties, Pennsylvania, and that a notice of which the annexed is a true copy was published on the following dates in said newspaper: 7/16/18

Amanda Duane

**Amanda Duane**

Sworn to before me this 18<sup>th</sup>  
day of July, 2018.

Cathy D. Shephard

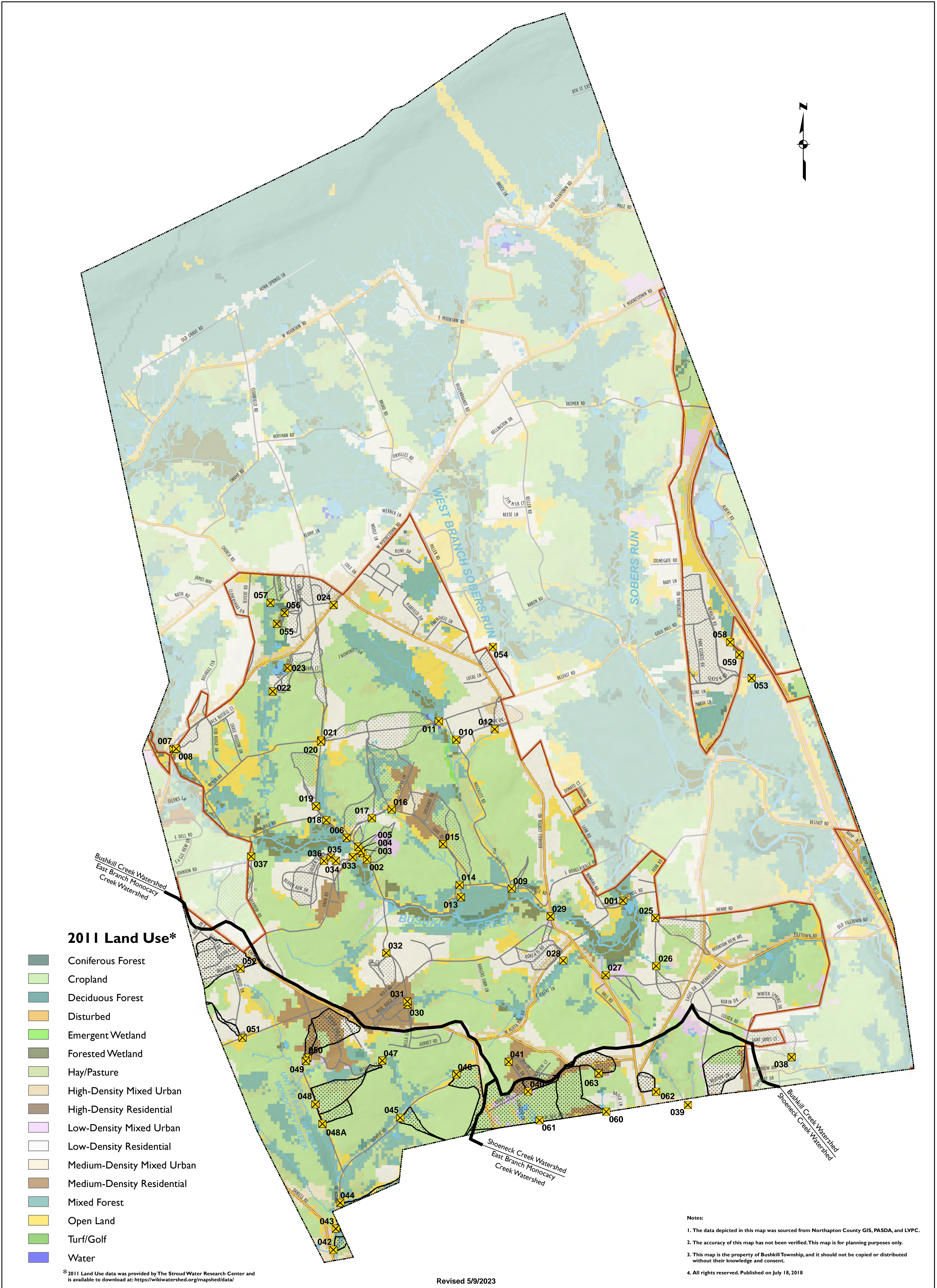
**NOTARY PUBLIC**

COMMONWEALTH OF PENNSYLVANIA  
NOTARIAL SEAL  
Cathy D. Shephard, Notary Public  
City of Easton, Northampton County  
My Commission Expires April 24, 2019  
PENNSYLVANIA ASSOCIATION OF NOTARIES

## **Appendix B**

### **MapShed 2011 Land Use and MS4 Planning Area**

# Land Use - 2011 | Bushkill Township, Northampton County



## **Appendix C**

### **Calculations for Prospective BMP Sediment Load Reductions**



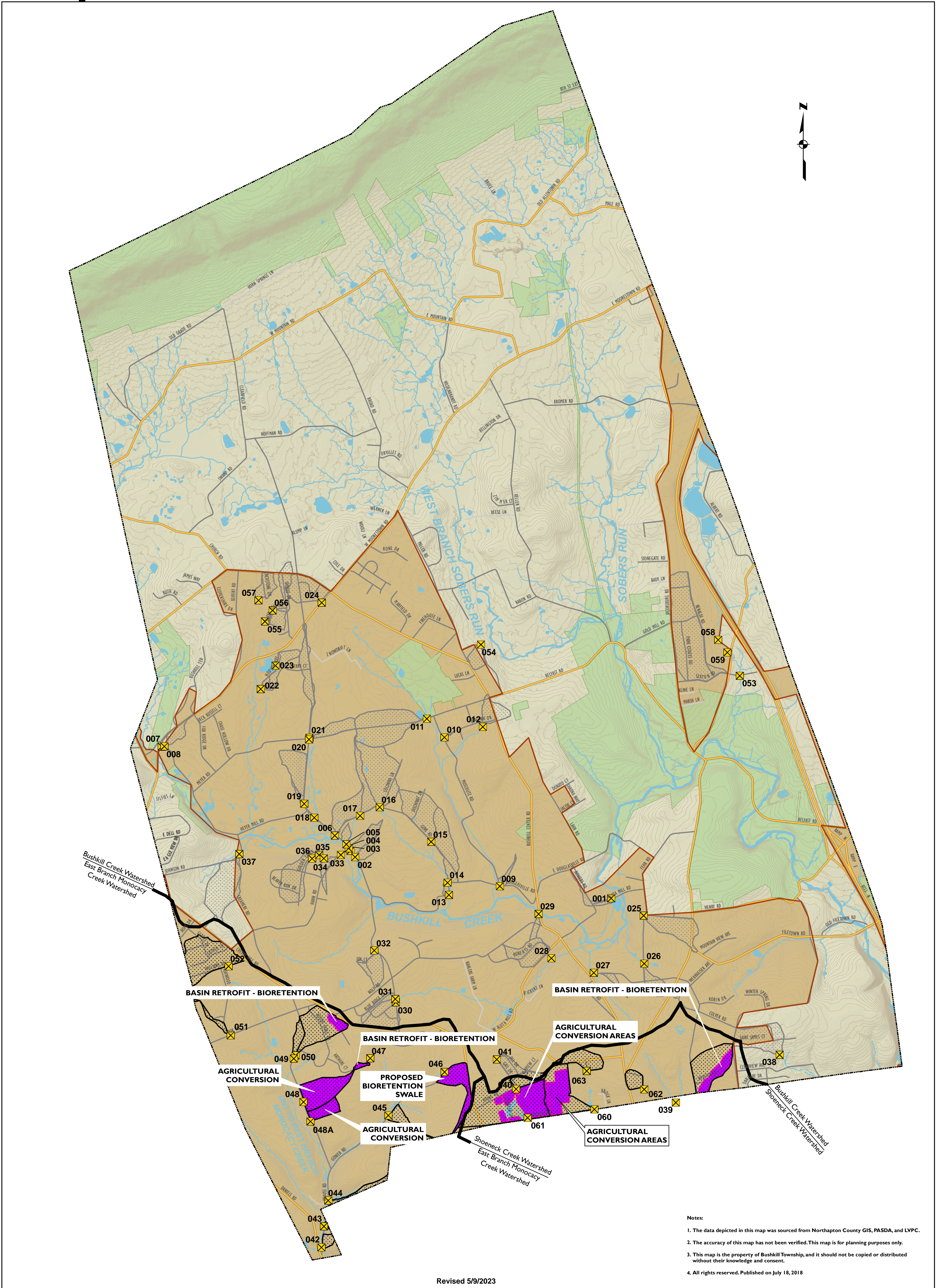
BMP ID	Area (acres)	Land Use Code	Land Use Description	Coeff (lbs/ac/yr)	Existing Sediment Load - Landuse (lbs/yr)	Existing Total Sediment Load (lbs/yr)	BMP Type	Sediment Load Reduction Coeff (percent)	Sediment Load Reduction (lbs/yr)
<b>BUSHKILL CREEK WATERSHED</b>									
39	1.0781995	5	Cropland	971.7	1,047.7	1,701.0	Bioretention Basin A/B soil w/Underdrain	0.8	1,360.8
	8.39745077	17	Low-Density Residential	39.0	327.3				
	1.91727901	18	Medium-Density Residential	170.0	326.0				
60	22.109964	4	Cropland	971.7	21,484.2	21,484.2	Ag Conversion No-till High Residue	0.61	13,105.4
61	29.973755	4	Cropland	971.7	29,125.5	29,125.5	Ag Conversion No-till High Residue	0.61	17,766.6
<b>EAST BRANCH MONOCACY CREEK WATERSHED</b>									
46	0.00728777	20	Medium-Density Mixed Urban	170.0	1.2	29,993.9	Bioretention Swale	0.9	26,951.1
	0.01376048	9	Mixed Forest	17.2	0.2				
	2.6305236	3	High-Density Mixed Urban	170.0	447.2				
	15.3097742	5	Cropland	1,915.0	29,318.9				
	1.04751662	21	Open Land	216.0	226.3				
47	1.53254934	5	Cropland	1,915.0	2,934.9	2,942.7	Bioretention Basin A/B soil w/Underdrain	0.8	2,354.2
	0.03979756	4	Hay/Pasture	196.2	7.8				
48	21.446119	5	Cropland	1,915.0	41,070.3	41,070.3	Ag Conversion No-till High Residue	0.61	25,052.9
48A	9.58002	5	Cropland	1,915.0	18,346.2	18,346.2	Ag Conversion No-till High Residue	0.61	11,191.2
50	4.06344344	17	Low-Density Residential	39.7	161.1	299.3	Bioretention Basin A/B soil w/Underdrain	0.8	239.5
	0.41642915	18	Medium-Density Residential	170.0	70.8				
	0.39639525	3	High-Density Mixed Urban	170.0	67.4				

## **Appendix D**

### **Prospective BMP Locations and Watersheds**

# Proposed BMP Locations

Bushkill Township, Northampton County



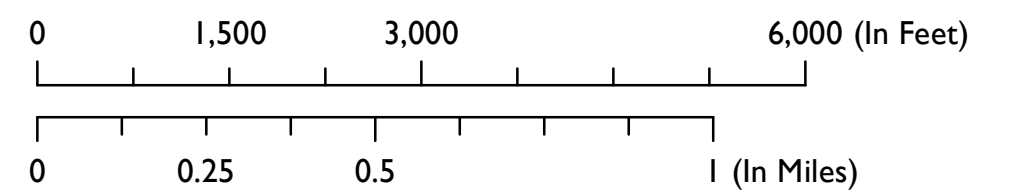
Notes:

1. The data depicted in this map was sourced from Northampton County GIS, PASDA, and LVPC.
2. The accuracy of this map has not been verified. This map is for planning purposes only.
3. This map is the property of Bushkill Township, and it should not be copied or distributed without their knowledge and consent.
4. All rights reserved. Published on July 18, 2018

Revised 5/9/2023

## LEGEND

- |                       |                |                       |                                 |
|-----------------------|----------------|-----------------------|---------------------------------|
| Regulated MS4 Outfall | State Highway  | 10ft. LiDAR Contour   | Planning Area                   |
| Municipal Boundary    | Local Road     | Park                  | Regulated MS4 Outfall Watershed |
| Private Road          | Statewide Line | Urbanized Area - 2010 | Proposed BMP Watershed          |



## **Appendix E**

### **Project Designs**

*(to be updated as prepared)*

## **Appendix F**

**Conservation Plans – BMPs 048, 048A, 060, and 061**



BETHLEHEM SERVICE CENTER  
 3910 ADLER PLACE, SUITE 110  
 BETHLEHEM, PA 18017  
 (484) 635-3789

## Conservation Plan

ROBERT C OSWALD  
 3220 LONGLEY RD  
 NAZARETH, PA 18064

Install the conservation practices, enhancements, and activities according to the implementation requirements, designs, construction plans, or other documents that facilitate meeting the applicable NRCS technical criteria. If you do not have such information, contact your local office before starting to install your conservation practices, enhancements, and activities.

### Conservation Crop Rotation (328)

Crop Rotation - Plan a sequence of crops grown on the same ground over a period of time to maintain or increase soil health, organic matter content, reduce erosion losses and reduce water quality degradation.

Tract: 623 Fields 1, 2; Tract: 666 Fields 2; Tract: 667 Fields 1; Tract: 668 Fields 11, 2, 3; Tract: 669 Fields 1; Tract: 670 Fields 1; Tract: 673 Fields 1, 2, 3; Tract: 699 Fields 1, 2, 3; Tract: 703 Fields 1, 2, 3; Tract: 724 Fields 1, 2, 3, 4; Tract: 727 Fields 1, 2, 3, 4; Tract: 728 Fields 1, 2; Tract: 729 Fields 1, 2; Tract: 739 Fields 1; Tract: 751 Fields 1, 2, 4, 5, 6, 7, 8; Tract: 753 Fields 1; Tract: 2076 Fields 1; Tract: 2077 Fields 1, 4, 5; Tract: 2227 Fields 1, 2; Tract: 2721 Fields 1; Tract: 2722 Fields 2; Tract: 2897 Fields 1, 2; Tract: 3203 Fields 2; Tract: 3562 Fields 2; Tract: 3637 Fields 1, 2; Tract: 3672 Fields 12; Tract: 3727 Fields 1, 2, 3, 4, 5, 8 751.2 ac

Planned Amount	Month	Year	Applied Amount	Date
751.2 Ac	04	2024	--	--

### Cover crop to minimize soil compaction (E340F)

Implement use of cover crops to minimize soil compaction.

Tract: 2076 Fields 1; Tract: 2077 Fields 1, 4, 5 58.9 ac

Planned Amount	Month	Year	Applied Amount	Date
58.9 Ac	09	2024	--	--
58.9 Ac	09	2025	--	--
58.9 Ac	09	2026	--	--
58.9 Ac	09	2027	--	--

### Existing Activity Payment-Land Use (E300EAP1)

Manage a level of stewardship on eligible land uses to receive an existing activity payment.

Tract: 623 Fields 1, 2; Tract: 666 Fields 2; Tract: 667 Fields 1; Tract: 668 Fields 11, 2, 3; Tract: 669 Fields 1; Tract: 670 Fields 1; Tract: 673 Fields 1, 2, 3; Tract: 699 Fields 1, 2, 3; Tract: 703 Fields 1, 2, 3; Tract: 724 Fields 1, 2, 3, 4; Tract: 727 Fields 1, 2, 3, 4; Tract: 728 Fields 1, 2; Tract: 729 Fields 1, 2; Tract: 739 Fields 1; Tract: 751 Fields 1, 2, 4, 5, 6, 7, 8; Tract: 753 Fields 1; Tract: 2076 Fields 1; Tract: 2077 Fields 1, 4, 5; Tract: 2227 Fields 1, 2; Tract: 2721 Fields 1; Tract: 2722 Fields 2; Tract: 2897 Fields 1, 2; Tract: 3203 Fields 2; Tract: 3562 Fields 2; Tract: 3637 Fields 1, 2; Tract: 3672 Fields 12; Tract: 3727 Fields 1, 2, 3, 4, 5, 8 751.2 ac

Planned Amount	Month	Year	Applied Amount	Date
751.2 Ac	09	2023	--	--
751.2 Ac	09	2024	--	--
751.2 Ac	09	2025	--	--
751.2 Ac	09	2026	--	--
751.2 Ac	09	2027	--	--

**Existing Activity Payment-Resource Concern (E300EAP2)**

Manage a level of stewardship by addressing a number of resource concerns to receive an existing activity payment.

Tract: 623 Fields 1 15.6 ac

Planned Amount	Month	Year	Applied Amount	Date
3.00 No	09	2023	--	--
3.00 No	09	2024	--	--
3.00 No	09	2025	--	--
3.00 No	09	2026	--	--
3.00 No	09	2027	--	--

**Improving nutrient uptake efficiency and reducing risk of nutrient losses (E590A)**

Implement nutrient management to improve nutrient uptake efficiency and reducing risk of nutrient losses.

Tract: 623 Fields 1, 2; Tract: 666 Fields 2; Tract: 667 Fields 1; Tract: 668 Fields 11, 2, 3; Tract: 669 Fields 1; Tract: 670 Fields 1; Tract: 673 Fields 1, 2, 3; Tract: 699 Fields 1, 2, 3; Tract: 703 Fields 1, 2, 3; Tract: 724 Fields 1, 2, 3, 4; Tract: 727 Fields 1, 2, 3, 4; Tract: 728 Fields 1, 2; Tract: 729 Fields 1, 2; Tract: 739 Fields 1; Tract: 751 Fields 1, 2, 4, 5, 6, 7, 8; Tract: 753 Fields 1; Tract: 2076 Fields 1; Tract: 2077 Fields 1, 4, 5; Tract: 2227 Fields 1, 2; Tract: 2721 Fields 1; Tract: 2722 Fields 2; Tract: 2897 Fields 1, 2; Tract: 3203 Fields 2; Tract: 3562 Fields 2; Tract: 3637 Fields 1, 2; Tract: 3672 Fields 12; Tract: 3727 Fields 1, 2, 3, 4, 5, 8 751.2 ac

Planned Amount	Month	Year	Applied Amount	Date
751.2 Ac	04	2023	--	--
751.2 Ac	04	2024	--	--
751.2 Ac	04	2025	--	--
751.2 Ac	04	2026	--	--
751.2 Ac	04	2027	--	--

**Nutrient Management (590)**

NM Level 1 - Apply nutrients based on right source, rate, time, and place (4Rs) not to exceed Land Grant University nutrient recommendations or equivalent, utilizing soil testing and other nutrient monitoring to manage nutrient application for the crop rotation.

Tract: 623 Fields 1, 2; Tract: 666 Fields 2; Tract: 667 Fields 1; Tract: 668 Fields 11, 2, 3; Tract: 669 Fields 1; Tract: 670 Fields 1; Tract: 673 Fields 1, 2, 3; Tract: 699 Fields 1, 2, 3; Tract: 703 Fields 1, 2, 3; Tract: 724 Fields 1, 2, 3, 4; Tract: 727 Fields 1, 2, 3, 4; Tract: 728 Fields 1, 2; Tract: 729 Fields 1, 2; Tract: 739 Fields 1; Tract: 751 Fields 1, 2, 4, 5, 6, 7, 8; Tract: 753 Fields 1; Tract: 2076 Fields 1; Tract: 2077 Fields 1, 4, 5; Tract: 2227 Fields 1, 2; Tract: 2721 Fields 1; Tract: 2722 Fields 2; Tract: 2897 Fields 1, 2; Tract: 3203 Fields 2; Tract: 3562 Fields 2; Tract: 3637 Fields 1, 2; Tract: 3672 Fields 12; Tract: 3727 Fields 1, 2, 3, 4, 5, 8 751.2 ac

Planned Amount	Month	Year	Applied Amount	Date
747.7 Ac	05	2023	--	--
3.5 Ac	09	2023	--	--

**Residue and Tillage Management, No Till (329)**

No-till - Minimize soil disturbance by limiting tillage to only planting and manage the amount, orientation and distribution of all residues to provide cover on the soil surface throughout the year.

**Tract: 724 Fields 1, 2, 3, 4 47.1 ac**

Planned Amount	Month	Year	Applied Amount	Date
47.1 Ac	04	2024	--	--

**Residue and Tillage Management, Reduced Till (345)**

Reduced tillage - Minimize soil disturbance by reducing the number and type of yearly tillage operations to manage the amount, orientation and distribution of crop and plant residues.

**Tract: 623 Fields 1, 2; Tract: 666 Fields 2; Tract: 667 Fields 1; Tract: 668 Fields 11, 2, 3; Tract: 669 Fields 1; Tract: 670 Fields 1; Tract: 673 Fields 1, 2, 3; Tract: 699 Fields 1, 2, 3; Tract: 703 Fields 1, 2, 3; Tract: 727 Fields 1, 2, 3, 4; Tract: 728 Fields 1, 2; Tract: 729 Fields 1, 2; Tract: 739 Fields 1; Tract: 751 Fields 1, 2, 4, 5, 6, 7, 8; Tract: 753 Fields 1; Tract: 2076 Fields 1; Tract: 2077 Fields 1, 4, 5; Tract: 2227 Fields 1, 2; Tract: 2721 Fields 1; Tract: 2722 Fields 2; Tract: 2897 Fields 1, 2; Tract: 3203 Fields 2; Tract: 3562 Fields 2; Tract: 3637 Fields 1, 2; Tract: 3672 Fields 12; Tract: 3727 Fields 1, 2, 3, 4, 5, 8 704.2 ac**

Planned Amount	Month	Year	Applied Amount	Date
704.2 Ac	04	2024	--	--





BETHLEHEM SERVICE CENTER  
 3910 ADLER PLACE, SUITE 110  
 BETHLEHEM, PA 18017  
 (484) 635-3789

## Conservation Plan

ROBERT C OSWALD  
 3220 LONGLEY RD  
 NAZARETH, PA 18064

### OBJECTIVE(S)

The purpose of this conservation plan is to incentivize the participant to adopt additional conservation practice enhancement(s) to improve air, soil, and water quality on the cropland acres. This plan is written to capture the management components that the participant is ready, willing, and able to implement to NRCS standards and specifications, and meet Conservation Stewardship Program (CSP) contract provisions.

Install the conservation practices, enhancements, and activities according to the implementation requirements, designs, construction plans, or other documents that facilitate meeting the applicable NRCS technical criteria. If you do not have such information, contact your local office before starting to install your conservation practices, enhancements, and activities.

### Conservation Crop Rotation (328)

Crop Rotation - Plan a sequence of crops grown on the same ground over a period of time to maintain or increase soil health, organic matter content, reduce erosion losses and reduce water quality degradation.

Tract	Field	2024
623	1	15.6 Ac
623	2	10.5 Ac
666	2	22.3 Ac
667	1	6.0 Ac

Tract	Field	2024
668	11	0.9 Ac --
668	2	0.9 Ac --
668	3	3.3 Ac --
669	1	2.7 Ac --
670	1	5.2 Ac --
673	1	24.5 Ac --
673	2	1.9 Ac --
673	3	3.0 Ac --
699	1	8.4 Ac --
699	2	18.5 Ac --
699	3	14.6 Ac --
703	1	7.8 Ac --
703	2	37.4 Ac --
703	3	3.8 Ac --

Tract	Field	2024
724	1	10.6 Ac --
724	2	1.1 Ac --
724	3	2.9 Ac --
724	4	32.4 Ac --
727	1	5.5 Ac --
727	2	4.6 Ac --
727	3	17.4 Ac --
727	4	5.2 Ac --
728	1	31.7 Ac --
728	2	3.5 Ac --
729	1	9.2 Ac --
729	2	9.5 Ac --
739	1	15.1 Ac --
751	1	35.3 Ac --

Tract	Field	2024
751	2	38.0 Ac --
751	4	6.5 Ac --
751	5	40.1 Ac --
751	6	8.8 Ac --
751	7	62.1 Ac --
751	8	3.8 Ac --
753	1	4.6 Ac --
2076	1	26.0 Ac --
2077	1	16.0 Ac --
2077	4	7.4 Ac --
2077	5	9.6 Ac --
2227	1	39.7 Ac --
2227	2	2.7 Ac --
2721	1	10.5 Ac --

Tract	Field	2024
2722	2	12.0 Ac --
2897	1	4.1 Ac --
2897	2	10.6 Ac --
3203	2	11.3 Ac --
3562	2	15.3 Ac --
3637	1	2.8 Ac --
3637	2	0.7 Ac --
3672	12	4.7 Ac --
3727	1	6.5 Ac --
3727	2	11.3 Ac --
3727	3	6.2 Ac --
3727	4	3.3 Ac --
3727	5	2.5 Ac --
3727	8	12.9 Ac --

Tract	Field	2024
		751.2 Ac
	Total:	--

**Cover crop to minimize soil compaction (E340F)**  
 Implement use of cover crops to minimize soil compaction.

Tract	Field	2024	2025	2026	2027
2076	1	26.0 Ac	--	26.0 Ac	--
2077	1	16.0 Ac	--	16.0 Ac	--
2077	4	7.4 Ac	--	7.4 Ac	--
2077	5	9.6 Ac	--	9.6 Ac	--
Total:	Planned Applied	59.0 Ac	--	59.0 Ac	--

**Existing Activity Payment-Land Use (E300EAP1)**  
 Manage a level of stewardship on eligible land uses to receive an existing activity payment.

Tract	Field	2023	2024	2025	2026	2027
623	1	15.6 Ac	--	15.6 Ac	--	15.6 Ac
623	2	10.5 Ac	--	10.5 Ac	--	10.5 Ac
666	2	22.3 Ac	--	22.3 Ac	--	22.3 Ac
667	1	6.0 Ac	--	6.0 Ac	--	6.0 Ac

Tract	Field	2023	2024	2025	2026	2027
668	11	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --
668	2	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --
668	3	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --
669	1	2.7 Ac --	2.7 Ac --	2.7 Ac --	2.7 Ac --	2.7 Ac --
670	1	5.2 Ac --	5.2 Ac --	5.2 Ac --	5.2 Ac --	5.2 Ac --
673	1	24.5 Ac --	24.5 Ac --	24.5 Ac --	24.5 Ac --	24.5 Ac --
673	2	1.9 Ac --	1.9 Ac --	1.9 Ac --	1.9 Ac --	1.9 Ac --
673	3	3.0 Ac --	3.0 Ac --	3.0 Ac --	3.0 Ac --	3.0 Ac --
699	1	8.4 Ac --	8.4 Ac --	8.4 Ac --	8.4 Ac --	8.4 Ac --
699	2	18.5 Ac --	18.5 Ac --	18.5 Ac --	18.5 Ac --	18.5 Ac --
699	3	14.6 Ac --	14.6 Ac --	14.6 Ac --	14.6 Ac --	14.6 Ac --
703	1	7.8 Ac --	7.8 Ac --	7.8 Ac --	7.8 Ac --	7.8 Ac --
703	2	37.4 Ac --	37.4 Ac --	37.4 Ac --	37.4 Ac --	37.4 Ac --
703	3	3.8 Ac --	3.8 Ac --	3.8 Ac --	3.8 Ac --	3.8 Ac --

Tract	Field	2023	2024	2025	2026	2027
724	1	10.6 Ac	10.6 Ac	10.6 Ac	10.6 Ac	10.6 Ac
724	2	1.1 Ac	1.1 Ac	1.1 Ac	1.1 Ac	1.1 Ac
724	3	2.9 Ac	2.9 Ac	2.9 Ac	2.9 Ac	2.9 Ac
724	4	32.4 Ac	32.4 Ac	32.4 Ac	32.4 Ac	32.4 Ac
727	1	5.5 Ac	5.5 Ac	5.5 Ac	5.5 Ac	5.5 Ac
727	2	4.6 Ac	4.6 Ac	4.6 Ac	4.6 Ac	4.6 Ac
727	3	17.4 Ac	17.4 Ac	17.4 Ac	17.4 Ac	17.4 Ac
727	4	5.2 Ac	5.2 Ac	5.2 Ac	5.2 Ac	5.2 Ac
728	1	31.7 Ac	31.7 Ac	31.7 Ac	31.7 Ac	31.7 Ac
728	2	3.5 Ac	3.5 Ac	3.5 Ac	3.5 Ac	3.5 Ac
729	1	9.2 Ac	9.2 Ac	9.2 Ac	9.2 Ac	9.2 Ac
729	2	9.5 Ac	9.5 Ac	9.5 Ac	9.5 Ac	9.5 Ac
739	1	15.1 Ac	15.1 Ac	15.1 Ac	15.1 Ac	15.1 Ac
751	1	35.3 Ac	35.3 Ac	35.3 Ac	35.3 Ac	35.3 Ac



Tract	Field	2023	2024	2025	2026	2027
751	2	38.0 Ac --	38.0 Ac --	38.0 Ac --	38.0 Ac --	38.0 Ac --
751	4	6.5 Ac --	6.5 Ac --	6.5 Ac --	6.5 Ac --	6.5 Ac --
751	5	40.1 Ac --	40.1 Ac --	40.1 Ac --	40.1 Ac --	40.1 Ac --
751	6	8.8 Ac --	8.8 Ac --	8.8 Ac --	8.8 Ac --	8.8 Ac --
751	7	62.1 Ac --	62.1 Ac --	62.1 Ac --	62.1 Ac --	62.1 Ac --
751	8	3.8 Ac --	3.8 Ac --	3.8 Ac --	3.8 Ac --	3.8 Ac --
753	1	4.6 Ac --	4.6 Ac --	4.6 Ac --	4.6 Ac --	4.6 Ac --
2076	1	26.0 Ac --	26.0 Ac --	26.0 Ac --	26.0 Ac --	26.0 Ac --
2077	1	16.0 Ac --	16.0 Ac --	16.0 Ac --	16.0 Ac --	16.0 Ac --
2077	4	7.4 Ac --	7.4 Ac --	7.4 Ac --	7.4 Ac --	7.4 Ac --
2077	5	9.6 Ac --	9.6 Ac --	9.6 Ac --	9.6 Ac --	9.6 Ac --
2227	1	39.7 Ac --	39.7 Ac --	39.7 Ac --	39.7 Ac --	39.7 Ac --
2227	2	2.7 Ac --	2.7 Ac --	2.7 Ac --	2.7 Ac --	2.7 Ac --
2721	1	10.5 Ac --	10.5 Ac --	10.5 Ac --	10.5 Ac --	10.5 Ac --

Tract	Field	2023	2024	2025	2026	2027
2722	2	12.0 Ac --	12.0 Ac --	12.0 Ac --	12.0 Ac --	12.0 Ac --
2897	1	4.1 Ac --	4.1 Ac --	4.1 Ac --	4.1 Ac --	4.1 Ac --
2897	2	10.6 Ac --	10.6 Ac --	10.6 Ac --	10.6 Ac --	10.6 Ac --
3203	2	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --
3562	2	15.3 Ac --	15.3 Ac --	15.3 Ac --	15.3 Ac --	15.3 Ac --
3637	1	2.8 Ac --	2.8 Ac --	2.8 Ac --	2.8 Ac --	2.8 Ac --
3637	2	0.7 Ac --	0.7 Ac --	0.7 Ac --	0.7 Ac --	0.7 Ac --
3672	12	4.7 Ac --	4.7 Ac --	4.7 Ac --	4.7 Ac --	4.7 Ac --
3727	1	6.5 Ac --	6.5 Ac --	6.5 Ac --	6.5 Ac --	6.5 Ac --
3727	2	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --
3727	3	6.2 Ac --	6.2 Ac --	6.2 Ac --	6.2 Ac --	6.2 Ac --
3727	4	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --
3727	5	2.5 Ac --	2.5 Ac --	2.5 Ac --	2.5 Ac --	2.5 Ac --
3727	8	12.9 Ac --	12.9 Ac --	12.9 Ac --	12.9 Ac --	12.9 Ac --

Tract	Field	2023	2024	2025	2026	2027
Total:	Planned Applied	751.3 Ac --	751.3 Ac --	751.3 Ac --	751.3 Ac --	751.3 Ac --

**Existing Activity Payment-Resource Concern (E300EAP2)**

Manage a level of stewardship by addressing a number of resource concerns to receive an existing activity/ payment.

Tract	Field	2023	2024	2025	2026	2027
623	1	3.00 No --	3.00 No --	3.00 No --	3.00 No --	3.00 No --
Total:	Planned Applied	3.00 No --	3.00 No --	3.00 No --	3.00 No --	3.00 No --

**Improving nutrient uptake efficiency and reducing risk of nutrient losses (E590A)**

Implement nutrient management to improve nutrient uptake efficiency and reducing risk of nutrient losses.

Tract	Field	2023	2024	2025	2026	2027
623	1	15.6 Ac --	15.6 Ac --	15.6 Ac --	15.6 Ac --	15.6 Ac --
623	2	10.5 Ac --	10.5 Ac --	10.5 Ac --	10.5 Ac --	10.5 Ac --
666	2	22.3 Ac --	22.3 Ac --	22.3 Ac --	22.3 Ac --	22.3 Ac --
667	1	6.0 Ac --	6.0 Ac --	6.0 Ac --	6.0 Ac --	6.0 Ac --
668	11	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --
668	2	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --	0.9 Ac --
668	3	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --

Tract	Field	2023	2024	2025	2026	2027
669	1	2.7 Ac	2.7 Ac	2.7 Ac	2.7 Ac	2.7 Ac
670	1	5.2 Ac	5.2 Ac	5.2 Ac	5.2 Ac	5.2 Ac
673	1	24.5 Ac	24.5 Ac	24.5 Ac	24.5 Ac	24.5 Ac
673	2	1.9 Ac	1.9 Ac	1.9 Ac	1.9 Ac	1.9 Ac
673	3	3.0 Ac	3.0 Ac	3.0 Ac	3.0 Ac	3.0 Ac
699	1	8.4 Ac	8.4 Ac	8.4 Ac	8.4 Ac	8.4 Ac
699	2	18.5 Ac	18.5 Ac	18.5 Ac	18.5 Ac	18.5 Ac
699	3	14.6 Ac	14.6 Ac	14.6 Ac	14.6 Ac	14.6 Ac
703	1	7.8 Ac	7.8 Ac	7.8 Ac	7.8 Ac	7.8 Ac
703	2	37.4 Ac	37.4 Ac	37.4 Ac	37.4 Ac	37.4 Ac
703	3	3.8 Ac	3.8 Ac	3.8 Ac	3.8 Ac	3.8 Ac
724	1	10.6 Ac	10.6 Ac	10.6 Ac	10.6 Ac	10.6 Ac
724	2	1.1 Ac	1.1 Ac	1.1 Ac	1.1 Ac	1.1 Ac
724	3	2.9 Ac	2.9 Ac	2.9 Ac	2.9 Ac	2.9 Ac

Tract	Field	2023	2024	2025	2026	2027
724	4	32.4 Ac	32.4 Ac	32.4 Ac	32.4 Ac	32.4 Ac
727	1	5.5 Ac	5.5 Ac	5.5 Ac	5.5 Ac	5.5 Ac
727	2	4.6 Ac	4.6 Ac	4.6 Ac	4.6 Ac	4.6 Ac
727	3	17.4 Ac	17.4 Ac	17.4 Ac	17.4 Ac	17.4 Ac
727	4	5.2 Ac	5.2 Ac	5.2 Ac	5.2 Ac	5.2 Ac
728	1	31.7 Ac	31.7 Ac	31.7 Ac	31.7 Ac	31.7 Ac
728	2	3.5 Ac	3.5 Ac	3.5 Ac	3.5 Ac	3.5 Ac
729	1	9.2 Ac	9.2 Ac	9.2 Ac	9.2 Ac	9.2 Ac
729	2	9.5 Ac	9.5 Ac	9.5 Ac	9.5 Ac	9.5 Ac
739	1	15.1 Ac	15.1 Ac	15.1 Ac	15.1 Ac	15.1 Ac
751	1	35.3 Ac	35.3 Ac	35.3 Ac	35.3 Ac	35.3 Ac
751	2	38.0 Ac	38.0 Ac	38.0 Ac	38.0 Ac	38.0 Ac
751	4	6.5 Ac	6.5 Ac	6.5 Ac	6.5 Ac	6.5 Ac
751	5	40.1 Ac	40.1 Ac	40.1 Ac	40.1 Ac	40.1 Ac

Tract	Field	2023	2024	2025	2026	2027
751	6	8.8 Ac	8.8 Ac	8.8 Ac	8.8 Ac	8.8 Ac
751	7	62.1 Ac	62.1 Ac	62.1 Ac	62.1 Ac	62.1 Ac
751	8	3.8 Ac	3.8 Ac	3.8 Ac	3.8 Ac	3.8 Ac
753	1	4.6 Ac	4.6 Ac	4.6 Ac	4.6 Ac	4.6 Ac
2076	1	26.0 Ac	26.0 Ac	26.0 Ac	26.0 Ac	26.0 Ac
2077	1	16.0 Ac	16.0 Ac	16.0 Ac	16.0 Ac	16.0 Ac
2077	4	7.4 Ac	7.4 Ac	7.4 Ac	7.4 Ac	7.4 Ac
2077	5	9.6 Ac	9.6 Ac	9.6 Ac	9.6 Ac	9.6 Ac
2227	1	39.7 Ac	39.7 Ac	39.7 Ac	39.7 Ac	39.7 Ac
2227	2	2.7 Ac	2.7 Ac	2.7 Ac	2.7 Ac	2.7 Ac
2721	1	10.5 Ac	10.5 Ac	10.5 Ac	10.5 Ac	10.5 Ac
2722	2	12.0 Ac	12.0 Ac	12.0 Ac	12.0 Ac	12.0 Ac
2897	1	4.1 Ac	4.1 Ac	4.1 Ac	4.1 Ac	4.1 Ac
2897	2	10.6 Ac	10.6 Ac	10.6 Ac	10.6 Ac	10.6 Ac

Tract	Field	2023	2024	2025	2026	2027
3203	2	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --
3562	2	15.3 Ac --	15.3 Ac --	15.3 Ac --	15.3 Ac --	15.3 Ac --
3637	1	2.8 Ac --	2.8 Ac --	2.8 Ac --	2.8 Ac --	2.8 Ac --
3637	2	0.7 Ac --	0.7 Ac --	0.7 Ac --	0.7 Ac --	0.7 Ac --
3672	12	4.7 Ac --	4.7 Ac --	4.7 Ac --	4.7 Ac --	4.7 Ac --
3727	1	6.5 Ac --	6.5 Ac --	6.5 Ac --	6.5 Ac --	6.5 Ac --
3727	2	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --	11.3 Ac --
3727	3	6.2 Ac --	6.2 Ac --	6.2 Ac --	6.2 Ac --	6.2 Ac --
3727	4	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --	3.3 Ac --
3727	5	2.5 Ac --	2.5 Ac --	2.5 Ac --	2.5 Ac --	2.5 Ac --
3727	8	12.9 Ac --	12.9 Ac --	12.9 Ac --	12.9 Ac --	12.9 Ac --
Total:	Planned Applied	751.3 Ac --	751.3 Ac --	751.3 Ac --	751.3 Ac --	751.3 Ac --

**Nutrient Management (590)**  
 NIM Level 1 - Apply nutrients based on right source, rate, time, and place (4Rs) not to exceed Land Grant University nutrient recommendations or equivalent, utilizing soil testing and other nutrient monitoring to manage nutrient application for the crop rotation.

Tract	Field	2023
623	1	15.6 Ac --
623	2	10.5 Ac --
666	2	22.3 Ac --
667	1	6.0 Ac --
668	11	0.9 Ac --
668	2	0.9 Ac --
668	3	3.3 Ac --
669	1	2.7 Ac --
670	1	5.2 Ac --
673	1	24.5 Ac --
673	2	1.9 Ac --
673	3	3.0 Ac --
699	1	8.4 Ac --
699	2	18.5 Ac --



Tract	Field	2023
699	3	14.6 Ac --
703	1	7.8 Ac --
703	2	37.4 Ac --
703	3	3.8 Ac --
724	1	10.6 Ac --
724	2	1.1 Ac --
724	3	2.9 Ac --
724	4	32.4 Ac --
727	1	5.5 Ac --
727	2	4.6 Ac --
727	3	17.4 Ac --
727	4	5.2 Ac --
728	1	31.7 Ac --
728	2	3.5 Ac --

Tract	Field	2023
729	1	9.2 Ac --
729	2	9.5 Ac --
739	1	15.1 Ac --
751	1	35.3 Ac --
751	2	38.0 Ac --
751	4	6.5 Ac --
751	5	40.1 Ac --
751	6	8.8 Ac --
751	7	62.1 Ac --
751	8	3.8 Ac --
753	1	4.6 Ac --
2076	1	26.0 Ac --
2077	1	16.0 Ac --
2077	4	7.4 Ac --

Tract	Field	2023
2077	5	9.6 Ac --
2227	1	39.7 Ac --
2227	2	2.7 Ac --
2721	1	10.5 Ac --
2722	2	12.0 Ac --
2897	1	4.1 Ac --
2897	2	10.6 Ac --
3203	2	11.3 Ac --
3562	2	15.3 Ac --
3637	1	2.8 Ac --
3637	2	0.7 Ac --
3672	12	4.7 Ac --
3727	1	6.5 Ac --
3727	2	11.3 Ac --

Tract	Field	2023
3727	3	6.2 Ac --
3727	4	3.3 Ac --
3727	5	2.5 Ac --
3727	8	12.9 Ac --
Total:	Planned Applied	751.2 Ac --

**Residue and Tillage Management, No Till (329)**

No-till - Minimize soil disturbance by limiting tillage to only planting and manage the amount, orientation and distribution of all residues to provide cover on the soil surface throughout the year.

Tract	Field	2024
724	1	10.6 Ac --
724	2	1.1 Ac --
724	3	2.9 Ac --
724	4	32.4 Ac --
Total:	Planned Applied	47.1 Ac --

**Residue and Tillage Management, Reduced Till (345)**

Reduced tillage - Minimize soil disturbance by reducing the number and type of yearly tillage operations to manage the amount, orientation and distribution of crop and plant residues.

Tract	Field	2024
623	1	15.6 Ac --
623	2	10.5 Ac --
666	2	22.3 Ac --
667	1	6.0 Ac --
668	11	0.9 Ac --
668	2	0.9 Ac --
668	3	3.3 Ac --
669	1	2.7 Ac --
670	1	5.2 Ac --
673	1	24.5 Ac --
673	2	1.9 Ac --
673	3	3.0 Ac --
699	1	8.4 Ac --
699	2	18.5 Ac --

Tract	Field	2024
699	3	14.6 Ac --
703	1	7.8 Ac --
703	2	37.4 Ac --
703	3	3.8 Ac --
727	1	5.5 Ac --
727	2	4.6 Ac --
727	3	17.4 Ac --
727	4	5.2 Ac --
728	1	31.7 Ac --
728	2	3.5 Ac --
729	1	9.2 Ac --
729	2	9.5 Ac --
739	1	15.1 Ac --
751	1	35.3 Ac --

Tract	Field	2024
751	2	38.0 Ac --
751	4	6.5 Ac --
751	5	40.1 Ac --
751	6	8.8 Ac --
751	7	62.1 Ac --
751	8	3.8 Ac --
753	1	4.6 Ac --
2076	1	26.0 Ac --
2077	1	16.0 Ac --
2077	4	7.4 Ac --
2077	5	9.6 Ac --
2227	1	39.7 Ac --
2227	2	2.7 Ac --
2721	1	10.5 Ac --

Tract	Field	2024
2722	2	12.0 Ac --
2897	1	4.1 Ac --
2897	2	10.6 Ac --
3203	2	11.3 Ac --
3562	2	15.3 Ac --
3637	1	2.8 Ac --
3637	2	0.7 Ac --
3672	12	4.7 Ac --
3727	1	6.5 Ac --
3727	2	11.3 Ac --
3727	3	6.2 Ac --
3727	4	3.3 Ac --
3727	5	2.5 Ac --
3727	8	12.9 Ac --



Tract	Field	2024
Total:	Planned Applied	704.2 Ac --

This Conservation Plan Record of Decisions supports a NRCS Financial Assistance Program Conservation Stewardship Program (CSP) application. This plan includes the practices and enhancements for sustaining and improving the natural resource base of the listed Field(s), Tract(s) and/or Farm(s). Consult this stewardship plan along with the implementation requirements, enhancement guide sheets, CPA-1202 Contract, CPA-1202 Appendix and the CPA-1155 Schedule of Operations for complete plan and program details. It is the responsibility of the landowner and/or land user to obtain all the appropriate, necessary state and/or local permits prior to implementation of any permit requiring practice(s). All participants will establish and maintain USDA program eligibility including but not limited to AGI limits, HEL and Wetland compliance. To achieve the intended purpose (s) maintain all practices for the practice lifespan. Find practice lifespans on the CPA-1155 Schedule of Operations.

CERTIFICATION OF PARTICIPANTS

Robert C Oswald 5/17/23  
ROBERT C OSWALD DATE

CERTIFICATION OF:

Justin D. Wagner 5/11/2023  
CERTIFIED PLANNER & DISTRICT CONSERVATIONIST DATE

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# Conservation Plan Map

Client(s): ROBERT C OSWALD  
 Agreement Number: 812D37232B8  
 Northampton County, Pennsylvania

Assisted By: RYAN SHAW  
 Northampton County Farmland Preservation  
 BETHLEHEM SERVICE CENTER

Land Units: Tract 724, Fields 1,2,3,4

Tract	Land Unit	Practice Name	Planned Amt	Planned Date
724	1	Improving nutrient uptake efficiency and reducing risk of nutrient losses (E590A)	10.6	2023 - 2027
724	2	Improving nutrient uptake efficiency and reducing risk of nutrient losses (E590A)	1.1	2023 - 2027
724	3	Improving nutrient uptake efficiency and reducing risk of nutrient losses (E590A)	2.9	2023 - 2027
724	4	Improving nutrient uptake efficiency and reducing risk of nutrient losses (E590A)	32.4	2023 - 2027



USDA-NRCS-NGCE

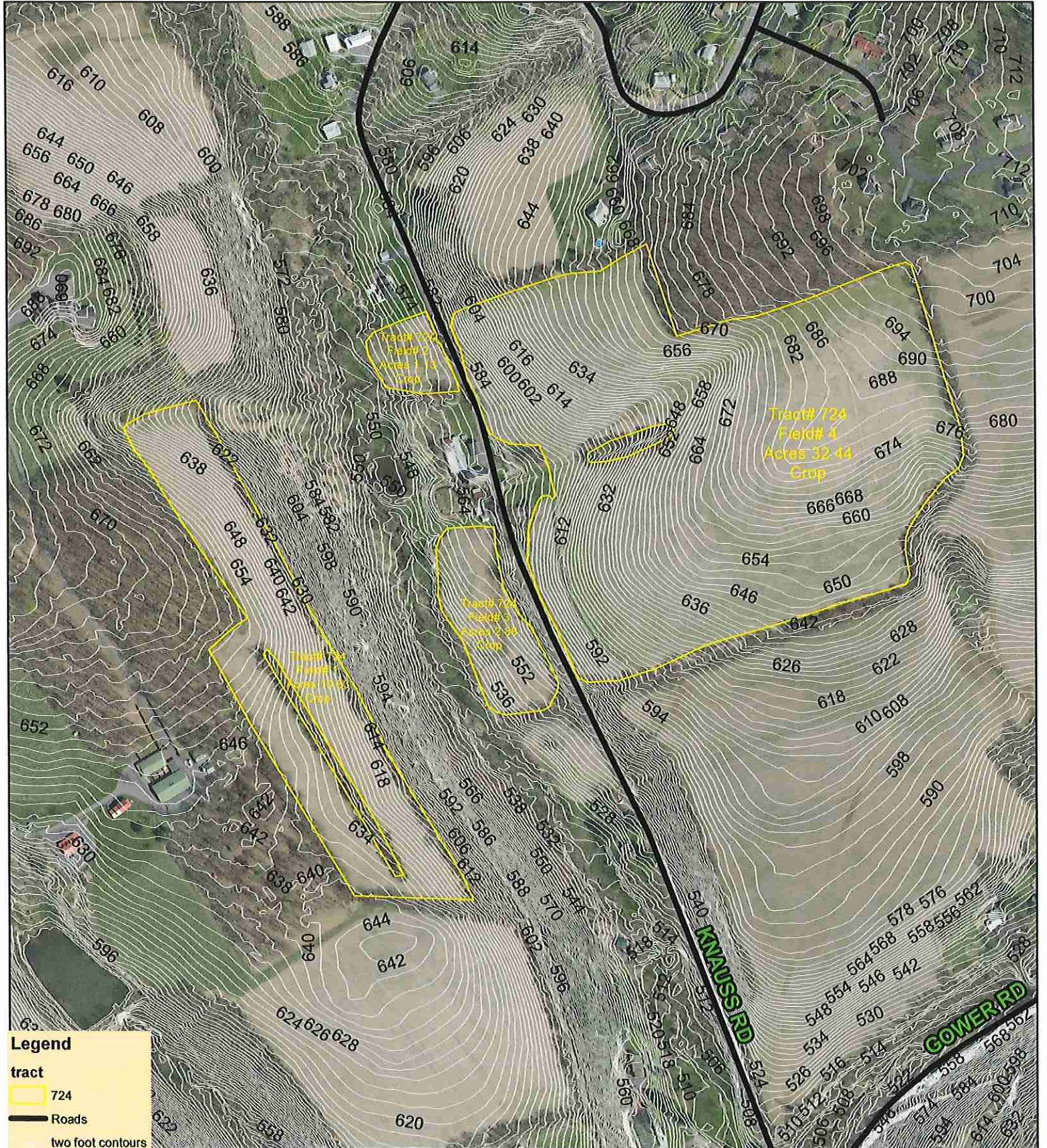
Prepared with assistance from USDA-Natural Resources Conservation Service



Practice Schedule PLUs



# Topographic Map



**Legend**

tract

- 724

Roads

two foot contours

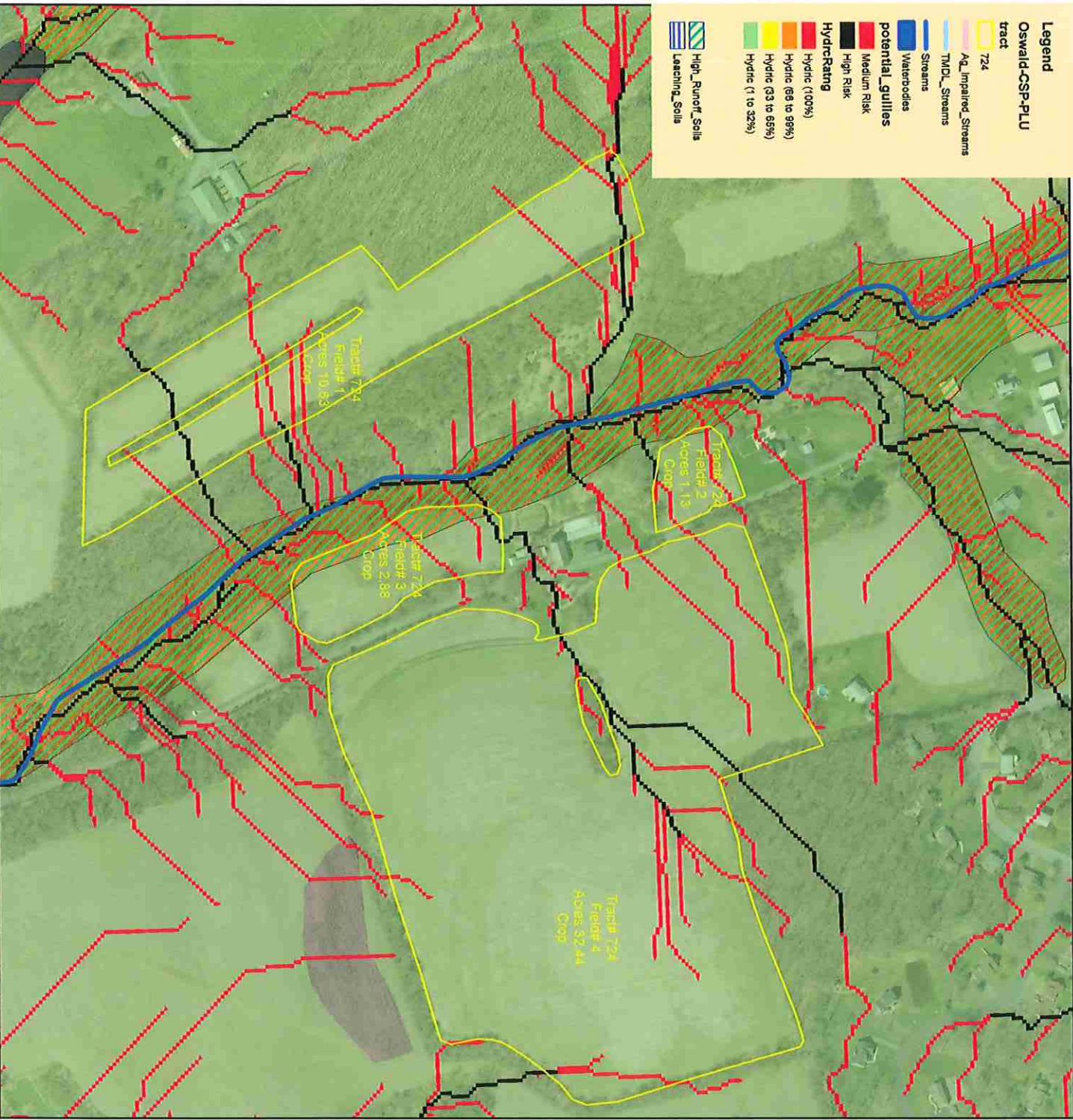
0 250 500 1,000 Feet



# Priority Resources Inventory

**Legend**

- Oswald-CSP-PLU tract
- 724
- Aq\_Impaired\_Streams
- TMDL\_Streams
- Streams
- Waterbodies
- potentially\_gullies
- Medium Risk
- High Risk
- HydrRang
- Hydic (100%)
- Hydic (63 to 99%)
- Hydic (33 to 65%)
- Hydic (1 to 32%)
- High\_Runoff\_Soils
- Leaching\_Soils



(1) Farm is located in the following priority watershed type(s):

- HQ - High Quality
- EV - Exceptional Value
- 303d - Ag Impaired for Nutrient and Sediment
- Brook Trout Greatly Reduced
- Priority Watershed (NRCS)
- Naturally Reproducing Brook Trout

(2) The Following Species of Concern may be with 1/4 mile of the tract:

- Bog Turtle (Threatened)
- Northern Long-eared Bat (Threatened)
- Cerulean Warbler
- Golden - Winged Warbler
- Indiana Bat (Endangered)

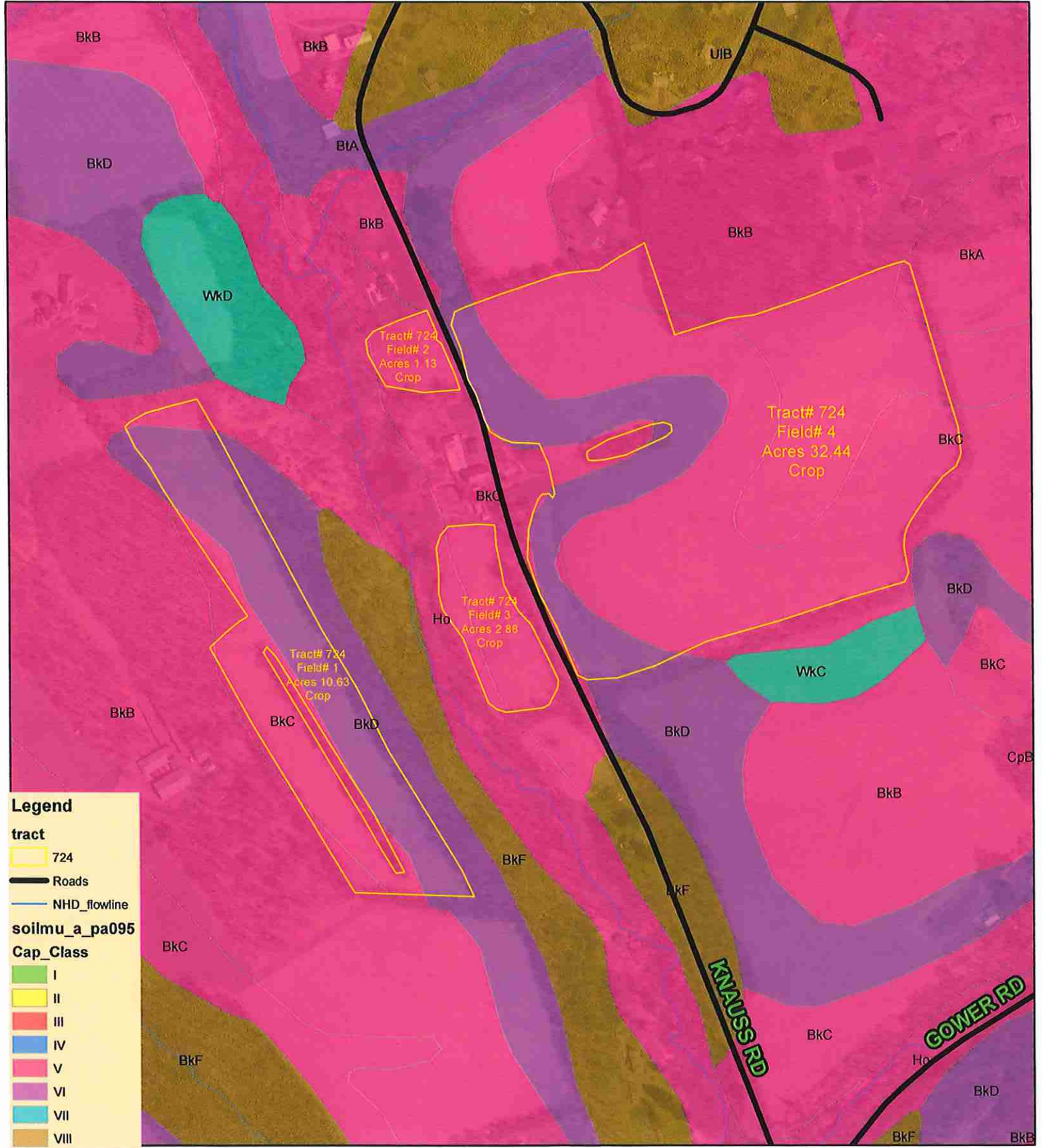
PNDI Hit (See Attached)

Name: Northampton County  
Date: 5/6/2023

County: Northampton County



# Soils Capability Class Map



**Legend**

**tract**

- 724

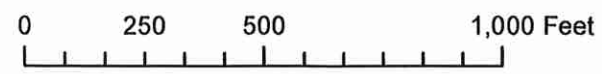
**Roads**

- Roads
- NHD\_flowline

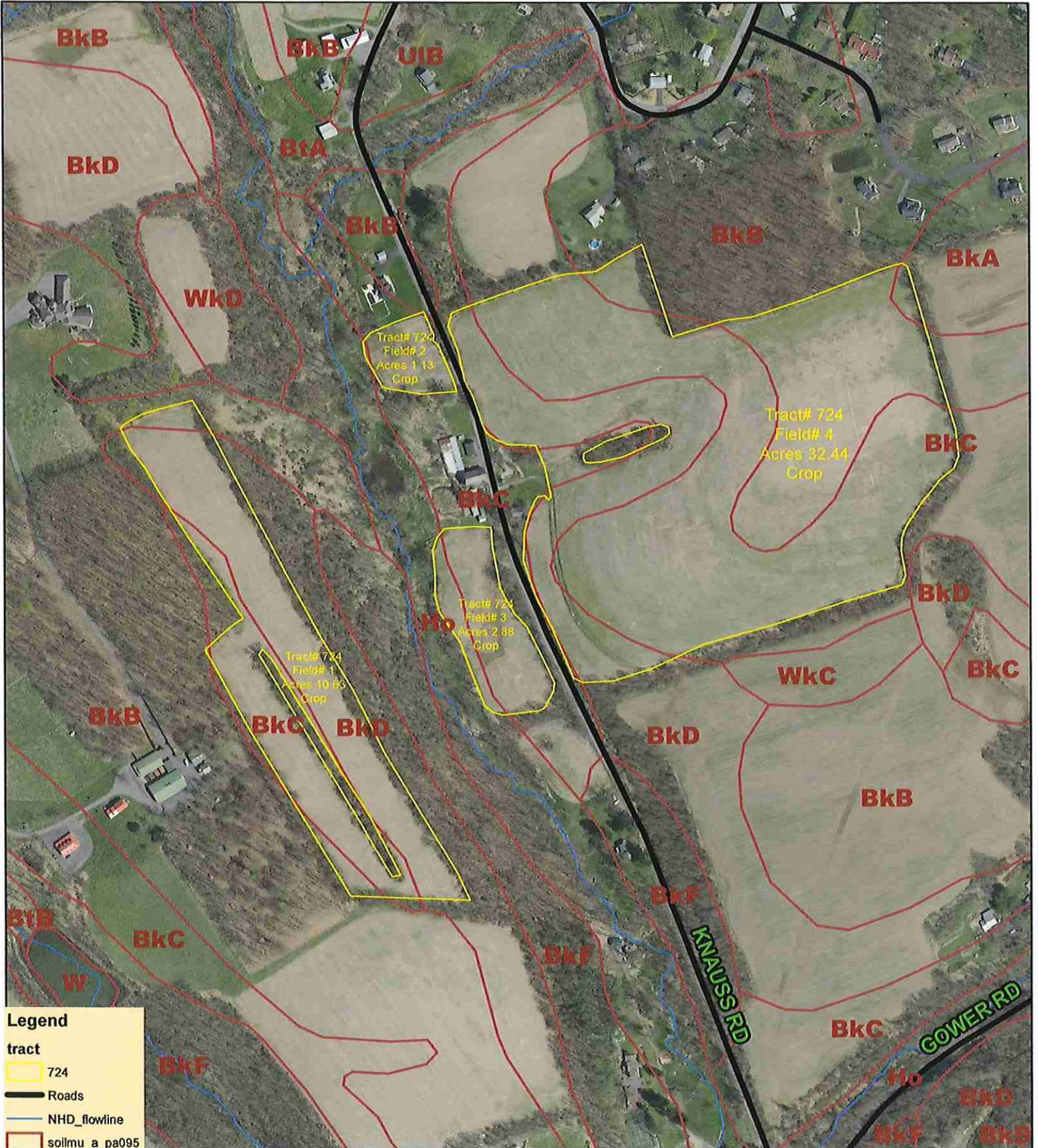
**soilmu\_a\_pa095**

**Cap\_Class**

- I
- II
- III
- IV
- V
- VI
- VII
- VIII



# Soils Map



**Legend**

tract

- 724
- Roads
- NHD\_flowline
- soilmu\_a\_pa095

0      250      500      1,000 Feet





## Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

### Report—Map Unit Description (Brief, Generated)

Northampton County, Pennsylvania

**Map Unit:** AfB--Allenwood silt loam, 3 to 8 percent slopes

**Component:** Allenwood (95%)

The Allenwood component makes up 95 percent of the map unit. Slopes are 3 to 8 percent. This component is on valley sides, uplands. The parent material consists of old till derived from sedimentary rock. Depth to a root restrictive layer, bedrock, lithic, is 60 to 120 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY003PA Mixed Limestone Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Berks (2%)

Generated brief soil descriptions are created for major soil components. The Berks soil is a minor component.

**Component:** Comly (1%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component:** Brinkerton (1%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Component:** Weikert (1%)

Generated brief soil descriptions are created for major soil components. The Weikert soil is a minor component.

**Map Unit:** BfB--Bedington-Berks complex, 3 to 8 percent slopes

**Component:** Bedington (55%)

The Bedington component makes up 55 percent of the map unit. Slopes are 3 to 8 percent. This component is on shale hillslopes, valleys. The parent material consists of acid brown residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, lithic, is 60 to 99 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F147XY002PA Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Berks (35%)

The Berks component makes up 35 percent of the map unit. Slopes are 3 to 8 percent. This component is on ridges, valleys. The parent material consists of acid brown residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY002PA Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Weikert (3%)

Generated brief soil descriptions are created for major soil components. The Weikert soil is a minor component.

**Component:** Brinkerton (3%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Component:** Comly (3%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Map Unit:** BkA--Berks-Weikert complex, 0 to 3 percent slopes

**Component:** Berks (70%)

The Berks component makes up 70 percent of the map unit. Slopes are 0 to 3 percent. This component is on ridges on hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

**Component:** Weikert (20%)

The Weikert component makes up 20 percent of the map unit. Slopes are 0 to 3 percent. This component is on ridges on hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

**Component:** Brinkerton (5%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Component:** Comly (5%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Map Unit:** BkB--Berks-Weikert complex, 3 to 8 percent slopes

**Component:** Berks (65%)

The Berks component makes up 65 percent of the map unit. Slopes are 3 to 8 percent. This component is on ridges, hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Weikert (25%)

The Weikert component makes up 25 percent of the map unit. Slopes are 3 to 8 percent. This component is on ridges, hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Component:** Comly (6%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component:** Brinkerton (4%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit:** BkC--Berks-Weikert complex, 8 to 15 percent slopes

**Component:** Berks (65%)

The Berks component makes up 65 percent of the map unit. Slopes are 8 to 15 percent. This component is on ridges on hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Component:** Weikert (25%)

The Weikert component makes up 25 percent of the map unit. Slopes are 8 to 15 percent. This component is on ridges on hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

**Component:** Comly (6%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component: Brinkerton (4%)**

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit: BkD--Berks-Weikert complex, 15 to 25 percent slopes**

**Component: Berks (65%)**

The Berks component makes up 65 percent of the map unit. Slopes are 15 to 25 percent. This component is on ridges, hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 5 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

**Component: Weikert (25%)**

The Weikert component makes up 25 percent of the map unit. Slopes are 15 to 25 percent. This component is on ridges, hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

**Component: Comly (6%)**

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component: Brinkerton (4%)**

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit: BkF--Berks-Weikert complex, 25 to 60 percent slopes**

**Component: Berks (65%)**

The Berks component makes up 65 percent of the map unit. Slopes are 25 to 60 percent. This component is on hillslopes on hills. The parent material consists of acid brown residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches (depth from the mineral surface is 19 to 38 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 69 percent. Below this thin organic horizon the organic matter content is about 7 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria.

**Component: Weikert (25%)**

The Weikert component makes up 25 percent of the map unit. Slopes are 25 to 60 percent. This component is on hillslopes on hills. The parent material consists of acid brown residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 8 to 19 inches (depth from the mineral surface is 7 to 17 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 69 percent. Below this thin organic horizon the organic matter content is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land

capability classification is 7e. This soil does not meet hydric criteria.

**Component:** Bedington (5%)

Generated brief soil descriptions are created for major soil components. The Bedington soil is a minor component.

**Component:** Comly (3%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component:** Brinkerton (2%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit:** BtB--Brinkerton-Comly silt loams, 3 to 8 percent slopes

**Component:** Brinkerton (75%)

The Brinkerton component makes up 75 percent of the map unit. Slopes are 3 to 8 percent. This component is on shale hills on valleys. The parent material consists of fine-silty colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 11 to 30 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, October, November, December. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY005PA Poorly Drained Mixed Sedimentary Toeslope ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

**Component:** Comly (20%)

The Comly component makes up 20 percent of the map unit. Slopes are 3 to 8 percent. This component is on shale hills, valleys. The parent material consists of acid fine-loamy colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 20 to 36 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F147XY005PA Poorly Drained Mixed Sedimentary Toeslope ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Map Unit:** ClB--Clarksburg silt loam, 3 to 8 percent slopes

**Component:** Clarksburg (90%)

The Clarksburg component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on limestone valley flats, uplands. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, fragipan, is 20 to 36 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 27 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F148XY026PA Mixed Limestone Lower Slope, Moist, High Base-Saturation, Upland, Mixed Oak - Hickory - Conifer Forest ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Thorndale (5%)

Generated brief soil descriptions are created for major soil components. The Thorndale soil is a minor component.

**Map Unit:** CpA--Comly silt loam, 0 to 3 percent slopes

**Component:** Comly (90%)

The Comly component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on colluvial valleys, shale hills. The parent material consists of acid fine-loamy colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 20 to 35 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation

is at 24 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F147XY002PA Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

**Component:** Brinkerton (5%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit:** CpB--Comly silt loam, 3 to 8 percent slopes

**Component:** Comly (90%)

The Comly component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on colluvial valleys, shale hills. The parent material consists of acid fine-loamy colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 20 to 35 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F147XY002PA Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Brinkerton (5%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit:** DuA--Duffield silt loam, 0 to 3 percent slopes

**Component:** Duffield (90%)

The Duffield component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on hills, limestone valleys. The parent material consists of residuum weathered from limestone and siltstone. Depth to a root restrictive layer, bedrock, lithic, is 48 to 120 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY003PA Mixed Limestone Upland ecological site. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

**Component:** Ryder (3%)

Generated brief soil descriptions are created for major soil components. The Ryder soil is a minor component.

**Component:** Clarksburg (3%)

Generated brief soil descriptions are created for major soil components. The Clarksburg soil is a minor component.

**Component:** Penlaw (2%)

Generated brief soil descriptions are created for major soil components. The Penlaw soil is a minor component.

**Component:** Thorndale (2%)

Generated brief soil descriptions are created for major soil components. The Thorndale soil is a minor component.

**Map Unit:** DuB--Duffield silt loam, 3 to 8 percent slopes

**Component:** Duffield (90%)

The Duffield component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills, limestone valleys. The parent material consists of residuum weathered from limestone and siltstone. Depth to a root restrictive layer, bedrock, lithic, is 48 to 120 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY003PA Mixed Limestone Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Clarksburg (5%)

Generated brief soil descriptions are created for major soil components. The Clarksburg soil is a minor component.

**Component:** Ryder (3%)

Generated brief soil descriptions are created for major soil components. The Ryder soil is a minor component.

**Component:** Thorndale (2%)

Generated brief soil descriptions are created for major soil components. The Thorndale soil is a minor component.

**Map Unit:** DvC--Duffield-Ryder silt loams, 8 to 15 percent slopes

**Component:** Duffield (60%)

The Duffield component makes up 60 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills, limestone valleys. The parent material consists of residuum weathered from limestone and siltstone. Depth to a root restrictive layer, bedrock, lithic, is 48 to 120 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F148XY026PA Mixed Limestone Upland, Moist, High Base-Saturation, Upland, Mixed Oak - Hickory - Conifer Forest ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Component:** Ryder (30%)

The Ryder component makes up 30 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills, limestone valleys. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 24 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F148XY026PA Mixed Limestone Upland, Moist, High Base-Saturation, Upland, Mixed Oak - Hickory - Conifer Forest ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Component:** Clarksburg (4%)

Generated brief soil descriptions are created for major soil components. The Clarksburg soil is a minor component.

**Component:** Penlaw (3%)

Generated brief soil descriptions are created for major soil components. The Penlaw soil is a minor component.

**Component:** Thorndale (3%)

Generated brief soil descriptions are created for major soil components. The Thorndale soil is a minor component.

**Map Unit:** Ho--Holly silt loam

**Component:** Holly (94%)

The Holly component makes up 94 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains, sandstone shale hills. The parent material consists of alluvium derived from sandstone and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is low. This soil is frequently flooded. It is occasionally ponded. A seasonal zone of water saturation is at 6 inches during January, February, March, April, May, December. Organic matter content in the surface horizon is about 4 percent. This component is in the F148XY031PA Hydric, Triassic, Riparian Zone, Swamp Meadow-Shrub-Forest, Poorly Drained Fine Mixed Floodplain ecological site. Nonirrigated land capability classification is 3w. This soil meets hydric criteria. The calcium carbonate equivalent within 40 inches, typically, does not exceed 3 percent.

**Component:** Gibraltar (2%)

Generated brief soil descriptions are created for major soil components. The Gibraltar soil is a minor component.

**Component:** Brinkerton (2%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Component:** Linden (2%)

Generated brief soil descriptions are created for major soil components. The Linden soil is a minor component.

**Map Unit:** RyB--Ryder-Duffield silt loams, 3 to 8 percent slopes

**Component:** Ryder (65%)

The Ryder component makes up 65 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills, limestone valleys. The parent material consists of residuum weathered from shaly limestone. Depth to a root restrictive layer, bedrock, lithic, is 24 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 2 percent. This component is in the F147XY003PA Mixed Limestone Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Duffield (25%)

The Duffield component makes up 25 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills, limestone valleys. The parent material consists of fine-loamy residuum weathered from impure limestone and calcareous siltstone. Depth to a root restrictive layer, bedrock, lithic, is 48 to 99 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY003PA Mixed Limestone Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Map Unit:** UbB--Udorthents, limestone, 0 to 8 percent slopes

**Component:** Udorthents, limestone (100%)

The Udorthents, limestone component makes up 100 percent of the map unit. Slopes are 0 to 8 percent. This component is on hills, uplands. The parent material consists of graded areas of argillaceous limestone. Depth to a root restrictive layer, bedrock, lithic, is 40 to 99 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 60 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

**Map Unit:** UkaB--Urban land, 0 to 8 percent slopes

**Component:** Urban land (90%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

**Component:** Udorthents, unstable fill (10%)

Generated brief soil descriptions are created for major soil components. The Udorthents, unstable fill soil is a minor component.

**Map Unit:** UIB--Urban land-Berks complex, 0 to 8 percent slopes

**Component:** Urban land (65%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

**Component:** Berks (25%)

The Berks component makes up 25 percent of the map unit. Slopes are 0 to 8 percent. This component is on ridges, valleys. The parent material consists of acid brown residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F148XY021PA Dry, Piedmont - felsic, Upland, Mixed Oak Heath / Oak-Pine Woodland, Shallow Mixed Sedimentary



Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component: Brinkerton (5%)**

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Component: Comly (5%)**

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Map Unit: UoB--Urban land-Duffield complex, 0 to 8 percent slopes**

**Component: Urban land (65%)**

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

**Component: Duffield (25%)**

The Duffield component makes up 25 percent of the map unit. Slopes are 0 to 8 percent. This component is on limestone valleys, shale hills. The parent material consists of residuum weathered from limestone. Depth to a root restrictive layer, bedrock, lithic, is 48 to 120 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F148XY026PA Mixed Limestone Upland, Moist, High Base-Saturation, Upland, Mixed Oak - Hickory - Conifer Forest ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component: Penlaw (4%)**

Generated brief soil descriptions are created for major soil components. The Penlaw soil is a minor component.

**Component: Clarksburg (4%)**

Generated brief soil descriptions are created for major soil components. The Clarksburg soil is a minor component.

**Component: Thorndale (2%)**

Generated brief soil descriptions are created for major soil components. The Thorndale soil is a minor component.

**Map Unit: WkC--Weikert-Berks complex, 8 to 15 percent slopes**

**Component: Weikert (70%)**

The Weikert component makes up 70 percent of the map unit. Slopes are 8 to 15 percent. This component is on hillslopes on hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

**Component: Berks (20%)**

The Berks component makes up 20 percent of the map unit. Slopes are 8 to 15 percent. This component is on ridges on hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Component: Brinkerton (5%)**

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Component: Comly (5%)**

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Map Unit:** WkD--Weikert-Berks complex, 15 to 25 percent slopes

**Component:** Weikert (50%)

The Weikert component makes up 50 percent of the map unit. Slopes are 15 to 25 percent. This component is on ridges on hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

**Component:** Berks (40%)

The Berks component makes up 40 percent of the map unit. Slopes are 15 to 25 percent. This component is on ridges on hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

**Component:** Comly (5%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component:** Brinkerton (5%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

### Data Source Information

Soil Survey Area: Northampton County, Pennsylvania

Survey Area Data: Version 15, Sep 06, 2022

## Soils Inventory Report

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
623	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	4.8	31%
623	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	8.0	52%
623	1	BkD	Berks-Weikert complex, 15 to 25 percent slopes	2.5	16%
623	1	CpB	Comly silt loam, 3 to 8 percent slopes	0.2	1%
<b>Total</b>				<b>15.5</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
623	2	BkB	Berks-Weikert complex, 3 to 8 percent slopes	4.7	44%
623	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	4.0	38%
623	2	BkD	Berks-Weikert complex, 15 to 25 percent slopes	1.9	18%
<b>Total</b>				<b>10.6</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
666	2	AfB	Allenwood silt loam, 3 to 8 percent slopes	0.1	0%
666	2	BkB	Berks-Weikert complex, 3 to 8 percent slopes	11.2	50%
666	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	9.1	41%
666	2	BkD	Berks-Weikert complex, 15 to 25 percent slopes	1.9	9%
<b>Total</b>				<b>22.3</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
667	1	AfB	Allenwood silt loam, 3 to 8 percent slopes	0.7	12%
667	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	5.3	88%
667	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	0.0	0%
<b>Total</b>				<b>6.0</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
668	11	BkB	Berks-Weikert complex, 3 to 8 percent slopes	0.9	100%
<b>Total</b>				<b>0.9</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
668	2	BkB	Berks-Weikert complex, 3 to 8 percent slopes	0.9	100%
<b>Total</b>				<b>0.9</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
668	3	AfB	Allenwood silt loam, 3 to 8 percent slopes	1.9	58%
668	3	BkB	Berks-Weikert complex, 3 to 8 percent slopes	1.0	30%
668	3	CpB	Comly silt loam, 3 to 8 percent slopes	0.4	12%
<b>Total</b>				<b>3.3</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
669	1	AfB	Allenwood silt loam, 3 to 8 percent slopes	2.2	81%
669	1	CpB	Comly silt loam, 3 to 8 percent slopes	0.5	19%
<b>Total</b>				<b>2.7</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
670	1	AfB	Allenwood silt loam, 3 to 8 percent slopes	0.0	0%
670	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	2.4	46%
670	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	2.4	46%
670	1	BkD	Berks-Weikert complex, 15 to 25 percent slopes	0.4	8%
<b>Total</b>				<b>5.2</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
673	1	AfB	Allenwood silt loam, 3 to 8 percent slopes	23.6	96%
673	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	0.1	0%
673	1	CpB	Comly silt loam, 3 to 8 percent slopes	0.8	3%
<b>Total</b>				<b>24.5</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
673	2	AfB	Allenwood silt loam, 3 to 8 percent slopes	0.3	16%
673	2	CpB	Comly silt loam, 3 to 8 percent slopes	1.6	84%
<b>Total</b>				<b>1.9</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
673	3	AfB	Allenwood silt loam, 3 to 8 percent slopes	2.8	93%
673	3	BkB	Berks-Weikert complex, 3 to 8 percent slopes	0.0	0%
673	3	CpB	Comly silt loam, 3 to 8 percent slopes	0.2	7%
<b>Total</b>				<b>3.0</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
699	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	7.1	85%
699	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	1.3	15%
<b>Total</b>				<b>8.4</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
699	2	BkA	Berks-Weikert complex, 0 to 3 percent slopes	5.8	31%
699	2	BkB	Berks-Weikert complex, 3 to 8 percent slopes	11.4	62%
699	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	1.3	7%
<b>Total</b>				<b>18.5</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
699	3	BkA	Berks-Weikert complex, 0 to 3 percent slopes	0.0	0%
699	3	BkB	Berks-Weikert complex, 3 to 8 percent slopes	14.0	97%
699	3	BkC	Berks-Weikert complex, 8 to 15 percent slopes	0.5	3%
699	3	UIB	Urban land-Berks complex, 0 to 8 percent slopes	0.0	0%
<b>Total</b>				<b>14.5</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
703	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	6.0	77%
703	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	1.8	23%
<b>Total</b>				<b>7.8</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
703	2	BkB	Berks-Weikert complex, 3 to 8 percent slopes	24.3	65%
703	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	10.4	28%
703	2	CpB	Comly silt loam, 3 to 8 percent slopes	2.7	7%
<b>Total</b>				<b>37.4</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
703	3	BkB	Berks-Weikert complex, 3 to 8 percent slopes	3.8	100%
703	3	BkC	Berks-Weikert complex, 8 to 15 percent slopes	0.0	0%
703	3	BkD	Berks-Weikert complex, 15 to 25 percent slopes	0.0	0%
<b>Total</b>				<b>3.8</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
724	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	0.7	7%
724	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	3.6	34%
724	1	BkD	Berks-Weikert complex, 15 to 25 percent slopes	6.3	59%
<b>Total</b>				<b>10.6</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
724	2	BkB	Berks-Weikert complex, 3 to 8 percent slopes	0.0	0%
724	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	1.1	100%
724	2	Ho	Holly silt loam	0.0	0%
<b>Total</b>				<b>1.1</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
724	3	BkC	Berks-Weikert complex, 8 to 15 percent slopes	2.2	76%
724	3	Ho	Holly silt loam	0.7	24%
<b>Total</b>				<b>2.9</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
724	4	BkA	Berks-Weikert complex, 0 to 3 percent slopes	0.2	1%
724	4	BkB	Berks-Weikert complex, 3 to 8 percent slopes	7.8	24%
724	4	BkC	Berks-Weikert complex, 8 to 15 percent slopes	17.7	55%
724	4	BkD	Berks-Weikert complex, 15 to 25 percent slopes	6.6	20%
<b>Total</b>				<b>32.3</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
727	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	3.5	64%
727	1	CpB	Comly silt loam, 3 to 8 percent slopes	1.3	24%
727	1	WkD	Weikert-Berks complex, 15 to 25 percent slopes	0.7	13%
<b>Total</b>				<b>5.5</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
727	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	0.8	17%
727	2	BkF	Berks-Weikert complex, 25 to 60 percent slopes	0.3	7%
727	2	WkD	Weikert-Berks complex, 15 to 25 percent slopes	3.5	76%
<b>Total</b>				<b>4.6</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
727	3	BkB	Berks-Weikert complex, 3 to 8 percent slopes	12.0	69%
727	3	BkC	Berks-Weikert complex, 8 to 15 percent slopes	3.7	21%
727	3	BkF	Berks-Weikert complex, 25 to 60 percent slopes	0.2	1%
727	3	CpB	Comly silt loam, 3 to 8 percent slopes	0.3	2%
727	3	WkC	Weikert-Berks complex, 8 to 15 percent slopes	1.2	7%
727	3	WkD	Weikert-Berks complex, 15 to 25 percent slopes	0.0	0%
<b>Total</b>				<b>17.4</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
727	4	BkC	Berks-Weikert complex, 8 to 15 percent slopes	0.2	4%
727	4	BkF	Berks-Weikert complex, 25 to 60 percent slopes	1.5	28%
727	4	WkC	Weikert-Berks complex, 8 to 15 percent slopes	3.2	60%
727	4	WkD	Weikert-Berks complex, 15 to 25 percent slopes	0.4	8%
<b>Total</b>				<b>5.3</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
728	1	BkA	Berks-Weikert complex, 0 to 3 percent slopes	0.6	2%
728	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	11.0	35%
728	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	13.5	43%
728	1	BkD	Berks-Weikert complex, 15 to 25 percent slopes	2.1	7%
728	1	BkF	Berks-Weikert complex, 25 to 60 percent slopes	4.4	14%
<b>Total</b>				<b>31.6</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
728	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	3.3	92%
728	2	BkF	Berks-Weikert complex, 25 to 60 percent slopes	0.3	8%
<b>Total</b>				<b>3.6</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
728	3	BkB	Berks-Weikert complex, 3 to 8 percent slopes	2.3	59%
728	3	BkC	Berks-Weikert complex, 8 to 15 percent slopes	1.4	36%
728	3	BkD	Berks-Weikert complex, 15 to 25 percent slopes	0.2	5%
<b>Total</b>				<b>3.9</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
729	1	BtB	Brinkerton-Comly silt loams, 3 to 8 percent slopes	0.1	1%
729	1	CpB	Comly silt loam, 3 to 8 percent slopes	1.3	14%
729	1	DuA	Duffield silt loam, 0 to 3 percent slopes	1.7	18%
729	1	DvC	Duffield-Ryder silt loams, 8 to 15 percent slopes	3.2	35%
729	1	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	2.4	26%
729	1	UbB	Udorthents, limestone, 0 to 8 percent slopes	0.5	5%
<b>Total</b>				<b>9.2</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
729	2	CIB	Clarksburg silt loam, 3 to 8 percent slopes	2.9	31%
729	2	DuA	Duffield silt loam, 0 to 3 percent slopes	0.9	9%
729	2	DuB	Duffield silt loam, 3 to 8 percent slopes	5.1	54%
729	2	UbB	Udorthents, limestone, 0 to 8 percent slopes	0.6	6%
<b>Total</b>				<b>9.5</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
739	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	8.2	54%
739	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	1.8	12%
739	1	BkD	Berks-Weikert complex, 15 to 25 percent slopes	2.6	17%
739	1	CpB	Comly silt loam, 3 to 8 percent slopes	2.5	17%
<b>Total</b>				<b>15.1</b>	<b>100%</b>

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
751	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	1.2	3%
751	1	BkC	Berks-Weikert complex, 8 to 15 percent slopes	9.0	26%
751	1	BkD	Berks-Weikert complex, 15 to 25 percent slopes	8.7	25%
751	1	CpA	Comly silt loam, 0 to 3 percent slopes	3.8	11%
751	1	CpB	Comly silt loam, 3 to 8 percent slopes	8.7	25%
751	1	DuB	Duffield silt loam, 3 to 8 percent slopes	3.7	11%
751	1	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	0.0	0%
751	1	UkaB	Urban land, 0 to 8 percent slopes	0.0	0%
<b>Total</b>				<b>35.1</b>	<b>100%</b>



Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
751	2	BfB	Bedington-Berks complex, 3 to 8 percent slopes	4.1	11%
751	2	BkB	Berks-Weikert complex, 3 to 8 percent slopes	7.6	20%
751	2	BkC	Berks-Weikert complex, 8 to 15 percent slopes	3.4	9%
751	2	BkD	Berks-Weikert complex, 15 to 25 percent slopes	6.3	17%
751	2	CpA	Comly silt loam, 0 to 3 percent slopes	3.6	9%
751	2	DuB	Duffield silt loam, 3 to 8 percent slopes	5.4	14%
751	2	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	5.7	15%
751	2	WkD	Weikert-Berks complex, 15 to 25 percent slopes	1.8	5%

**Total** **37.9** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
751	4	BkD	Berks-Weikert complex, 15 to 25 percent slopes	2.1	32%
751	4	CpA	Comly silt loam, 0 to 3 percent slopes	0.6	9%
751	4	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	3.9	59%

**Total** **6.6** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
751	5	BkD	Berks-Weikert complex, 15 to 25 percent slopes	4.3	11%
751	5	BkF	Berks-Weikert complex, 25 to 60 percent slopes	0.2	1%
751	5	CIB	Clarksburg silt loam, 3 to 8 percent slopes	8.8	22%
751	5	CpA	Comly silt loam, 0 to 3 percent slopes	1.2	3%
751	5	DuA	Duffield silt loam, 0 to 3 percent slopes	6.6	17%
751	5	DuB	Duffield silt loam, 3 to 8 percent slopes	6.8	17%
751	5	DvC	Duffield-Ryder silt loams, 8 to 15 percent slopes	3.9	10%
751	5	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	8.2	21%
751	5	UoB	Urban land-Duffield complex, 0 to 8 percent slopes	0.0	0%

**Total** **40.0** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
751	6	BkC	Berks-Weikert complex, 8 to 15 percent slopes	2.5	29%
751	6	CpB	Comly silt loam, 3 to 8 percent slopes	1.5	17%
751	6	DuB	Duffield silt loam, 3 to 8 percent slopes	2.0	23%
751	6	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	2.7	31%

**Total** **8.7** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
751	7	CIB	Clarksburg silt loam, 3 to 8 percent slopes	5.9	10%
751	7	DuA	Duffield silt loam, 0 to 3 percent slopes	6.6	11%
751	7	DuB	Duffield silt loam, 3 to 8 percent slopes	36.2	58%
751	7	DvC	Duffield-Ryder silt loams, 8 to 15 percent slopes	3.6	6%
751	7	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	6.6	11%
751	7	UbB	Udorthents, limestone, 0 to 8 percent slopes	2.2	4%
751	7	UoB	Urban land-Duffield complex, 0 to 8 percent slopes	0.9	1%

**Total** **62.0** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
751	8	DuB	Duffield silt loam, 3 to 8 percent slopes	3.4	89%
751	8	UbB	Udorthents, limestone, 0 to 8 percent slopes	0.4	11%

**Total** **3.8** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
753	1	CIB	Clarksburg silt loam, 3 to 8 percent slopes	2.2	47%
753	1	RyB	Ryder-Duffield silt loams, 3 to 8 percent slopes	1.8	38%
753	1	UoB	Urban land-Duffield complex, 0 to 8 percent slopes	0.7	15%

**Total** **4.7** **100%**

**Grand Total** **538.6** **100%**



Producer: Robert C. Oswald  
 Location: Moore, Up. Nazareth, Bushkill Twps.  
 Farm Name: WINDHAVEN

Project or Contract: 812D37232B8  
 County: Northampton  
 Farm/Tract Number: CSP-IRA\_FY23

**CONSERVATION CROP ROTATION** A planned sequence of crops grown on the same ground over a period of time (i.e. the rotation cycle).

**PRACTICE LOCATION** See conservation plan maps

**PURPOSE(s):** (Check at least one and all that apply)

- Reduce sheet and rill erosion.
- Reduce plant pest pressures
- Maintain or increase soil health and organic matter content.
- Reduce the concentration of salts and other chemicals from saline seeps.
- Reduce water quality degradation due to excess nutrients.
- Provide feed and forage for domestic livestock
- Improve soil moisture use efficiency.
- Provide feed and cover habitat for wildlife, including pollinator forage and nesting

**Brief description the planned crop rotation with suitable crop substitutions provided to address weather, soil conditions, market, or other situations that may prevent the planned crop from being planted.**

Reference the attached RUSLE management description for rotation specifics. It is possible to substitute the crops listing in the crop rotation if crops fail or changes in planting plans due to weather or economic variables. Review and evaluate the crop sequence annually to decide if the planned crops are meeting goals. Contact NRCS to evaluate any other changes in crops, tillage, or desired residue levels. Soil test at least once every 3 years, and lime and fertilize based on soil test recommendations. Follow all label requirements when applying herbicides and pesticides. Maintain annual records of crops planted along with all nutrient and chemical applications.

Field/Acres	Rotation Sequence	Crop(s)	Additional notes: Tillage, Residue Management, etc.
T(s): 699, 703, 728, 751, 2076, 2077, 2721, 2722 (all fields)	1	Corn Grain CC, Soybean CC	Plant corn and beans using minimal tillage methods and cover crop no-till
T(s): 623, 666, 667, 668, 669, 670, 673, 727, 729, 739, 753, 2227, 2897, 3203, 3562, 3637, 3672, 3727 (all Fields)	2	Corn Grain, Soybean	Plant corn using no-till methods and soybeans using minimal tillage methods
Tract 724 all fields.	3	Corn Grain, Soybeans	Plant all crops using no-till methods
See ConsPlan for field acreages			

Additional guidance page(s) attached.

**Substitute Crops**

The following crops may be substituted for a planned crop in the rotation. NOTE when soybeans or corn silage are substituted for corn or a small grain, a wheat or rye cover crop is to be established and maintained until 10-15 inches tall or until late May, the following spring.

<u>Planned Crop</u>	<u>Acceptable Substitute Crop</u>
Corn (Grain)	<ul style="list-style-type: none"><li>• Soybeans or corn silage with cover crop</li><li>• Small Grains</li><li>• Hay</li><li>• Green Manure Crop</li></ul>
Soybeans or Corn Silage	<ul style="list-style-type: none"><li>• Corn (Grain)</li><li>• Small Grains</li><li>• Hay</li><li>• Green Manure Crop</li></ul>
Small Grains	<ul style="list-style-type: none"><li>• Corn with at least 30% cover after planting</li><li>• Soybeans or Corn Silage with at least 30% cover after planting and with a cover crop after harvest</li><li>• Hay</li><li>• Green Manure Crop</li></ul>

**OPERATION AND MAINTENANCE**

- Rotations shall provide for acceptable substitute crops in case of crop failure or shift in planting intentions for weather related or economic reasons. Acceptable substitutes are crops having similar properties that will accomplish the purpose of the original crop
- Evaluate the rotation and the crop sequence to determine if the planned system is meeting the planned purposes.

**CERTIFICATION STATEMENT:** I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

Planner / Technical Service Provider:  \_\_\_\_\_

Date: \_\_\_\_\_

**NRCS Use Only** \_\_\_\_\_

Designed By: Ryan M. Shaw Date 5-7-2023

Approved By: \_\_\_\_\_ Date \_\_\_\_\_



**Producer:** Robert C. Oswald      **Project or Contract:** 812D37232B8  
**Location:** Moore, Bushkill, & Up. Naz. Twps.      **County:** Northampton  
**Farm Name:** WINDHAVEN      **Farm/Tract Number:** CSP-IRA\_FY23

**ESIDUE AND TILLAGE MANAGEMENT, NO TILL** Limiting soil disturbance to manage the amount, orientation and distribution of crop and plant residue on the surface year round.

**PURPOSE(S)** (Check at least one and all that apply)

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Reduce sheet and rill erosion and excessive sediment in surface waters. | <input type="checkbox"/> Reduce energy use.                          |
| <input type="checkbox"/> Reduce tillage-induced particulate emissions.                                      | <input type="checkbox"/> Increase plant-available moisture.          |
| <input checked="" type="checkbox"/> Maintain or increase soil quality and organic matter content.           | <input type="checkbox"/> Provide food and escape cover for wildlife. |

**Brief description of no till management plan and available no till planting equipment.**

use no-till planting methods to plant the following crops: Corn Grain, Soybeans, and all cover crops. These crops will be planted directly into prior crop residues or into a cover crop.

Field#	Acres	Planned crop(s)	Amount of residue produced by each crop (%surface cover)	List ALL field operations or activities that affect residue cover, residue orientation, or surface disturbance	Operation or activity timing (month)
Attach RUSLE2 report (Use profile output NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro)					
Additional Comments Plant all crops using no-till methods					

**OPERATION AND MAINTENANCE**

Evaluate/measure the crop residues cover and orientation after each crop to ensure the planned amounts and orientation are being achieved.

Adjust management as needed to either plan a new residue amount and orientation or adjust the planting and/or harvesting equipment.

Limited tillage to close or level ruts from harvesting equipment is allowed. No more than 10 percent of the field may be tilled for this purpose.

If there are areas of heavy residue accumulation (because of movement by water or wind) in the field, spread the residue prior to planting so it does not interfere with planter operation.

Additional Comments Planned sequence of crops is: Corn Grain, Soybeans

**CERTIFICATION STATEMENT:** I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

Planner / Technical Service Provider:  \_\_\_\_\_

Date: \_\_\_\_\_

**NRCS Use Only**

Designed By: Ryan M. Shaw Date 5/7/2023

Approved By: \_\_\_\_\_ Date \_\_\_\_\_



Rusle Program Version:  
Rusle Science Version:  
Data Base:

## RUSLE2 Erosion Calculation Record

File: plans\Oswald-CSP-Tract724  
Access Group: R2\_NRCS\_Fld\_Office

**Inputs:**

Owner name	Location	Info
Tract 724	USA\Pennsylvania\Northampton County	Rotation A: No-Till Corn Grain, Disk Soybeans Rotation B: No-Till Corn Grain, Cover Crop, Disk Soybeans, Cover Cro Rotation C: No-Till Corn Grain, No-Till Soybeans  Yields: Corn Grain - 180 bu/ac.; Soybeans - 55 bu/ac  Date: May 5, 2023; By: Ryan M. Shaw

Field name	Soil	Slope T Value	Slope length, ft	Slope steepness, %
1	soils\Northampton County, Pennsylvania\BkD Berks-Weikert complex, 15 to 25 percent slopes\Berks Channery loam 65%	2.0	49	18.0
2	soils\Northampton County, Pennsylvania\BkC Berks-Weikert complex, 8 to 15 percent slopes\Berks Channery loam 65%	2.0	99	12.0
3	soils\Northampton County, Pennsylvania\BkC Berks-Weikert complex, 8 to 15 percent slopes\Berks Channery loam 65%	2.0	59	16.0
4	soils\Northampton County, Pennsylvania\BkC Berks-Weikert complex, 8 to 15 percent slopes\Berks Channery loam 65%	2.0	69	15.0

**Results:**

Field name	Description	Contouring system	Support practices	Terrace/diversion system	Cons. plan. soil loss, t/acyr	Sed. delivery, t/acyr	Soil conditioning index (SCI)	STIR value	Wind & irrigation-induced erosion for SCI	Fuel cost
1	Rotation A	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	4.0	4.0	0.29	20	0	0
1	Rotation B	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	2.0	2.0	0.64	20	0	0
1	Rotation C	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	1.7	1.7	0.57	3.6	0	0
2	Rotation A	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	3.5	3.5	0.34	20	0	0
2	Rotation B	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	1.7	1.7	0.66	20	0	0
2	Rotation C	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	1.2	1.2	0.61	3.6	0	0
3	Rotation A	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	3.8	3.8	0.32	20	0	0
3	Rotation B	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	1.8	1.8	0.65	20	0	0
3	Rotation C	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	1.5	1.5	0.58	3.6	0	0
4	Rotation A	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	3.7	3.7	0.32	20	0	0
4	Rotation B	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	1.8	1.8	0.65	20	0	0
4	Rotation C	contour-systems\b. absolute row grade 2 percent	-- none --	-- none --	1.5	1.5	0.59	3.6	0	0

The **SCI** is the **Soil Conditioning Index** rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The **STIR** value is the **Soil Tillage Intensity Rating**. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. **STIR** ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.



## RUSLE2 Management Description Record

File: management\CMZ 65\c.Other Local Mgt Records\oswald\_CSP-rotC

Date	Operation	Vegetation	Yield (harv. units)	Type of cover material	Cover mat add/remove, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac
5/12/1	Sprayer, kill crop						
5/15/1	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, grain 18 in rows	180				
6/15/1	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/1	Fert applic. side-dress, liquid						
10/25/1	Harvest, killing crop 20pct standing stubble				7800	95	2000
11/1/1	Shred residue, 6 inch stubble						
5/15/2	Sprayer, kill crop						
5/20/2	Fert applic. surface broadcast						
5/21/2	Drill or air seeder single disk openers 7-10 in spac.	Soybean, mw 7in rows	55.0				
6/17/2	Sprayer, post emergence			weeds; 0-3 mo	250	14	
7/1/2	Sprayer, fungicide and insecticide tank mix						
9/14/2	Harvest, killing crop 20pct standing stubble				2500	77	630

Long-term natural rough.: 6.0 mm  
Normally used as a rotation?: Yes  
Duration: 2 yr

Info:

## 1. PROJECT INFORMATION

Project Name: **Northampton\_T724\_RO**

Date of Review: **5/6/2023 09:34:33 AM**

Project Category: **Agriculture/Farming, Expansion, modification, maintenance of an existing agricultural operation**

Project Area: **46.38 acres**

County(s): **Northampton**

Township/Municipality(s): **BUSHKILL TOWNSHIP**

ZIP Code:

Quadrangle Name(s): **WIND GAP**

Watersheds HUC 8: **Lehigh**

Watersheds HUC 12: **East Branch Monocacy Creek**

Decimal Degrees: **40.756408, -75.347573**

Degrees Minutes Seconds: **40° 45' 23.680" N, 75° 20' 51.2615" W**



## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

### Northampton\_T724\_RO

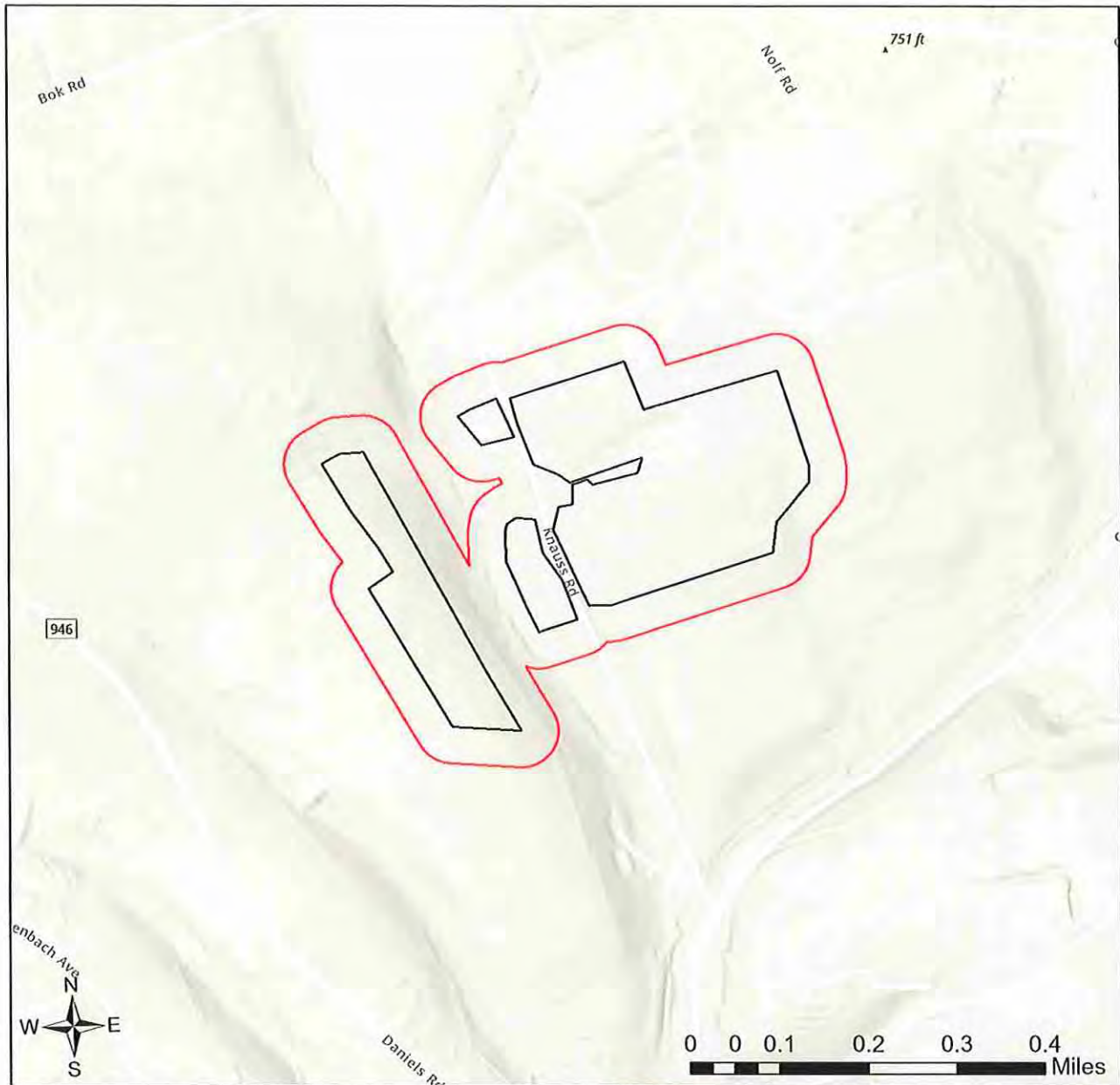




-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodastystyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

### Northampton\_T724\_RO



-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

## RESPONSE TO QUESTION(S) ASKED

**Q1:** Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.

**Your answer is:** The entire project and associated discharge, plus a 300-foot buffer around the project area, all occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, railroad bed, maintained lawn, or crop agriculture field.

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

#### PA Game Commission

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

##### RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

#### **4. DEP INFORMATION**

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

### 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

### 6. AGENCY CONTACT INFORMATION

**PA Department of Conservation and Natural Resources**  
Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552  
Harrisburg, PA 17105-8552  
Email: [RA-HeritageReview@pa.gov](mailto:RA-HeritageReview@pa.gov)

**PA Fish and Boat Commission**  
Division of Environmental Services  
595 E. Rolling Ridge Dr., Bellefonte, PA 16823  
Email: [RA-FBPACENOTIFY@pa.gov](mailto:RA-FBPACENOTIFY@pa.gov)

**U.S. Fish and Wildlife Service**  
Pennsylvania Field Office  
Endangered Species Section  
110 Radnor Rd; Suite 101  
State College, PA 16801  
Email: [IR1\\_ESPenn@fws.gov](mailto:IR1_ESPenn@fws.gov)  
NO Faxes Please

**PA Game Commission**  
Bureau of Wildlife Management  
Division of Environmental Review  
2001 Elmerton Avenue, Harrisburg, PA 17110-9797  
Email: [RA-PGC\\_PNDI@pa.gov](mailto:RA-PGC_PNDI@pa.gov)  
NO Faxes Please

### 7. PROJECT CONTACT INFORMATION

Name: \_\_\_\_\_  
Company/Business Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_  
Phone:(\_\_\_\_\_) \_\_\_\_\_ Fax:(\_\_\_\_\_) \_\_\_\_\_  
Email: \_\_\_\_\_

### 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

\_\_\_\_\_  
applicant/project proponent signature

\_\_\_\_\_  
date

**Pennsylvania  
Wildlife Habitat Evaluation  
Cropland**

Name: Robert C. Oswald - 812D37232B8

Date: 5/7/2023

Farm Number: 3992

Tract Number: 724

Field Number(s): ALL

County: Northampton

Check (under 'E') and record the score for each of the criteria below to document the existing conditions as part of the inventory and evaluation process. The score for planned conditions should be circled and recorded for alternatives developed or decisions made.

Points if Existing

Points if Planned

<b>E (1) Crop Rotation</b>				
<input type="checkbox"/>	Small grains - row crop - mixed hay, first cutting <u>not</u> for haylage		1	1
<input type="checkbox"/>	Small grains - row crop, with winter cover crop <u>not</u> for haylage (cover crop established with reduced tillage)		0.5	0.5
<input type="checkbox"/>	Continuous row crop, with winter cover crop <u>not</u> for haylage (cover crop established with reduced tillage)		0.2	0.2
<input checked="" type="checkbox"/>	Continuous row crop OR corn silage - alfalfa		0	0
<b>Crop Rotation Points</b>			<b>0</b>	<b>0</b>

<b>E (2) Crop Residues/Cover Crop</b>				
<input type="checkbox"/>	Continuous No-Till with more than 50% residues*; OR, Continuous No-Till with winter cover crop <u>not</u> for haylage		1	1
<input type="checkbox"/>	Wheat or barley for grain (est. w/reduced tillage); OR, winter cover crop <u>not</u> for haylage (c/c est. w/reduced till.)		0.8	0.8
<input checked="" type="checkbox"/>	Crop residues* left undisturbed until March 15th, no Fall tillage (moldboard, disc, or chisel plow)		0.5	0.5
<input type="checkbox"/>	Crop residues are grazed, chopped (mown or shredded), or baled		0.2	0.2
<input type="checkbox"/>	Silage crop or Fall tillage (moldboard, disc, or chisel plow) for Spring planted crop		0	0
<b>*Residues must average at least 12 inches in height. Tillage/Cover Crop Points</b>			<b>0.5</b>	<b>0.5</b>

<b>E (3) Cropping Activities</b>				
<input type="checkbox"/>	More than 2 acres of food plot or unharvested grain per 40 acres of cropland**		1	1
<input type="checkbox"/>	1/4 to 2 acre of food plot or unharvested grain per 40 acres of cropland**		0.5	0.5
<input type="checkbox"/>	Completely harvested, little herbicide used (field is weedy) OR winter cover crop		0.2	0.2
<input checked="" type="checkbox"/>	Completely harvested, heavy herbicide use (few weeds)		0	0
<b>**120 acre maximum for each unit of contiguous cropland Cropping Activities Points</b>			<b>0</b>	<b>0</b>

<b>E (4) Field Border (i.e., meets Std. 386 or 422 for Wildlife Purpose), min. 30 feet wide***</b>				
<input checked="" type="checkbox"/>	Vegetative field border or <u>un-grazed</u> woodland around more than 50% of the field(s)		1	1
<input type="checkbox"/>	Vegetative field border or <u>un-grazed</u> woodland around 25% to 50% of the field(s)		0.5	0.5
<input type="checkbox"/>	Vegetative field border around less than 25% of the field(s)		0	0
<b>Field Border Points</b>			<b>1</b>	<b>1</b>

<b>E (5) Field Size</b>				
Average distance from center of the field(s) to dense shrubby cover, hedgerow, or other perennial vegetative field border, all min. 30 ft. wide***; or, ave. dist. to <u>un-grazed</u> woodland. – OR – percent of the field(s) acreage within either 350ft. or 700 ft. feet of same habitats.				
<input type="checkbox"/>	250 ft. from center	OR 100% of acreage within 350 ft.	1	1
<input checked="" type="checkbox"/>	500 ft. from center	OR 100% of acreage within 700 ft.	0.8	0.8
<input type="checkbox"/>	1,000 ft. from center	OR more than 50% of acreage within 700 ft.	0.5	0.5
<input type="checkbox"/>	1,500 ft. from center	OR more than 25% of acreage within 700 ft.	0.2	0.2
<input type="checkbox"/>	2,000 ft. from center	OR less than 25% of acreage within 700 ft.	0	0
<b>Field Size Points</b>			<b>0.8</b>	<b>0.8</b>

\*\*\*Not required to be part of the field, but must be adjacent to the field; however, must also be under control of the decision-maker. This applies to both Criteria (4) & Criteria (5).

**Total Points for Existing and Planned (Maximum points possible is 5.0) =** 2.3      2.3

**Overall Score**

Existing Index = Total Existing Points ÷ 5 (1.0 is the maximum possible Index)

Existing Index = 0.46

Planned Index = Total Planned Points ÷ 5 (1.0 is the maximum possible Index)

Planned Index = 0.46

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United States  
Department of  
Agriculture

Natural Resources Conservation Service

# CONSERVATION PLAN

WEINHOFER FARMS LLC



LISA-JON LEPETA  
BETHLEHEM, PENNSYLVANIA  
484-635-3777  
lisa-jon.lepeta@usda.gov  
12/15/2023



BETHLEHEM SERVICE CENTER  
 3910 ADLER PLACE, SUITE 110  
 BETHLEHEM, PA 18017  
 (484) 635-3789

## Conservation Plan

WEINHOFER FARMS LLC  
 4547 SPRUCE ST  
 WHITEHALL, PA 18052

Install the conservation practices, enhancements, and activities according to the implementation requirements, designs, construction plans, or other documents that facilitate meeting the applicable NRCS technical criteria. If you do not have such information, contact your local office before starting to install your conservation practices, enhancements, and activities.

### Conservation Crop Rotation (328)

Crop Rotation - Plan a sequence of crops grown on the same ground over a period of time to maintain or increase soil health, organic matter content, reduce erosion losses and reduce water quality degradation.

Tract: 2690 Fields 1; Tract: 3963 Fields 4; Tract: 4041 Fields 3, 5 52.4 ac

Planned Amount	Month	Year	Applied Amount	Date
52.4 Ac	05	2024	--	--

### Contour Farming (330)

Sloping Crop Land - Align ridges, furrows, and roughness formed by tillage, planting and other operations at a grade near the contour to alter the velocity or the direction of water flow.

Tract: 2690 Fields 1; Tract: 3963 Fields 4; Tract: 4041 Fields 3, 5 52.4 ac

Planned Amount	Month	Year	Applied Amount	Date
52.4 Ac	05	2024	--	--

### Cover Crop (340)

Basic cover crop- Planting grasses, legumes, and/or forbs for seasonal vegetative cover- post harvest of the cash crop- to address natural resource concerns. Termination of the cover crop is timed to reduce delay of planting the next cash crop.

Tract: 2690 Fields 1; Tract: 3963 Fields 4; Tract: 4041 Fields 3, 5 52.4 ac

Planned Amount	Month	Year	Applied Amount	Date
52.4 Ac	05	2024	--	--

### Nutrient Management (590)

NM Level 1 - Apply nutrients based on right source, rate, time, and place (4Rs) not to exceed Land Grant University nutrient recommendations or equivalent, utilizing soil testing and other nutrient monitoring to manage nutrient application for the crop rotation.

Tract: 2690 Fields 1; Tract: 3963 Fields 4; Tract: 4041 Fields 3, 5 52.4 ac

Planned Amount	Month	Year	Applied Amount	Date
52.4 Ac	05	2024	--	--

### Residue and Tillage Management, No Till (329)

No-till - Minimize soil disturbance by limiting tillage to only planting and manage the amount, orientation and distribution of all residues to provide cover on the soil surface throughout the year.

Tract: 2690 Fields 1; Tract: 3963 Fields 4; Tract: 4041 Fields 3, 5 52.4 ac

Planned Amount	Month	Year	Applied Amount	Date
52.4 Ac	05	2025	--	--

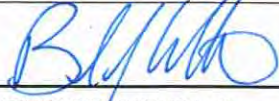
**Residue and Tillage Management, Reduced Till (345)**

Reduced tillage - Minimize soil disturbance by reducing the number and type of yearly tillage operations to manage the amount, orientation and distribution of crop and plant residues.

Tract: 2690 Fields 1; Tract: 3963 Fields 4; Tract: 4041 Fields 3, 5 52.4 ac

Planned Amount	Month	Year	Applied Amount	Date
52.4 Ac	05	2024	--	--

CERTIFICATION OF PARTICIPANTS

 WEINHOFER FARMS LLC	<u>12/15/23</u> DATE
--	-------------------------

CERTIFICATION OF:

CERTIFIED PLANNER  MANAGEMENT ASSISTANT	<u>12/15/2023</u> DATE
--	---------------------------

#### PUBLIC BURDEN STATEMENT

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collections is 0578-0013. The time required to complete this information collection is estimated to average 45/0.75 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection information.

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USDA Office of the Assistant Secretary for Civil Rights

1400 Independence Avenue, SW.

Washington, DC 20250-9410

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Rusle Program Version:  
 Rusle Science Version:  
 Data Base:

**RUSLE2 Erosion Calculation Record**

File: plans\Weinhofer\_Farms - Bushkill Twp - Biel Ave  
 Access Group: R2\_NRCS\_Fld\_Office

**Inputs:**

Owner name	Location	Info
Bushkill Township	USA\Pennsylvania\Northampton County	Biel Ave. Heintzleman Farm OP: Weinhofer Farms  Min Till - Soybeans; No-Till Corn

R Factor	Annual precip	10-yr 24-hr rainfall	In Req area?
170	45.1	4.9	No

Field name	Soil	Slope T Value	Slope length, ft	Slope steepness, %
Tract2690F1	soils\SSURGO\Northampton County, Pennsylvania\BkB Berks-Weikert complex, 3 to 8 percent slopes\Berks Channery loam 65%	2.0	120	9.00
Tract3963F4	soils\SSURGO\Northampton County, Pennsylvania\BkB Berks-Weikert complex, 3 to 8 percent slopes\Berks Channery loam 65%	2.0	130	9.00
Tract4041F3	soils\SSURGO\Northampton County, Pennsylvania\CpB Comly silt loam, 3 to 8 percent slopes\Comly Silt loam 90%	4.0	130	9.00
Tract4041F5	soils\SSURGO\Northampton County, Pennsylvania\BkC Berks-Weikert complex, 8 to 15 percent slopes\Berks Channery loam 65%	2.0	99	11.0

**Results:**

<i>Field name</i>	<i>Description</i>	<i>Contouring system</i>	<i>Support practices</i>	<i>Terrace/diversion system</i>	<i>Cons. plan. soil loss, t/ac/yr</i>	<i>Sed. delivery, t/ac/yr</i>	<i>Soil conditioning index (SCI)</i>	<i>STIR value</i>	<i>Wind &amp; irrigation-induced erosion for SCI</i>	<i>Fuel cost</i>
Tract2690F1		contour-systems\b. absolute row grade 2 percent	-- none - -	-- none --	1.9	1.9	0.57	36	0	0
Tract3963F4		contour-systems\b. absolute row grade 2 percent	-- none - -	-- none --	2.0	2.0	0.57	36	0	0
Tract4041F3		contour-systems\b. absolute row grade 2 percent	-- none - -	-- none --	2.5	2.5	0.52	36	0	0
Tract4041F5		contour-systems\b. absolute row grade 1 percent	-- none - -	-- none --	2.0	2.0	0.57	36	0	0

The **SCI** is the **Soil Conditioning Index** rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The **STIR** value is the **Soil Tillage Intensity Rating**. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.



### RUSLE2 Management Description Record

**File:** managements\CMZ 65\c.Other Local Mgt Records\Weinhofer-disk

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Yield (harv. units)</i>	<i>Type of cover material</i>	<i>Cover matl add/remove, lb/ac</i>	<i>Cover from addition, %</i>	<i>Standing res. added by op. desc., lb/ac</i>
5/15/1	Planter, double disk opnr w/fluted coulter with starter fertilizer	Corn, grain	220				
6/15/1	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/1	Fert applic. side-dress, liquid						
10/25/1	Harvest, killing crop 50pct standing stubble				5900	89	5900
10/31/1	Shred residue, 6 inch stubble						
5/10/2	Disk, tandem secondary op.						
5/20/2	Fert applic. surface broadcast						
5/21/2	Disk, tandem secondary op.						
5/22/2	Drill or air seeder single disk openers 7-10 in spac.	Soybean, mw 7in rows	70.0				
6/17/2	Sprayer, post emergence			weeds; 0-3 mo	250	14	
7/1/2	Sprayer, fungicide and insecticide tank mix						
9/14/2	Harvest, killing crop 50pct standing stubble				2100	70	2100

Long-term natural rough.: 6.0 mm  
 Normally used as a rotation?: Yes  
 Duration: 2 yr

Info:





Producer: Weinhofer Farms LLC  
 Location: Bushkill Twp  
 Farm Name: Bushkill Twp Tracts

Project or Contract: FY24-Bushkill-Twp  
 County: Northampton  
 Farm/Tract Number: T2690-T3983-T4041-T4138

**CONSERVATION CROP ROTATION** A planned sequence of crops grown on the same ground over a period of time (i.e. the rotation cycle).

**PRACTICE LOCATION** See conservation plan maps

**PURPOSE(s):** (Check at least one and all that apply)

- Reduce sheet and rill erosion.
- Maintain or increase soil health and organic matter content.
- Reduce water quality degradation due to excess nutrients.
- Improve soil moisture use efficiency.
- Reduce plant pest pressures
- Reduce the concentration of salts and other chemicals from saline seeps.
- Provide feed and forage for domestic livestock
- Provide feed and cover habitat for wildlife, including pollinator forage and nesting

**Brief description the planned crop rotation with suitable crop substitutions provided to address weather, soil conditions, market, or other situations that may prevent the planned crop from being planted.**

Reference the attached RUSLE2 Management Description for rotation specifics. It is possible to substitute the crops listed in the crop rotation if crops fail or changes in planting plans due to weather or economic variables. Review and evaluation the crop sequence annually to decide if the planned crops are meeting goals. Contact NRCS to evaluate any other changes in crops, tillage, or desired residue levels. Soil test at least once every 3 years, and lime and fertilize based on soil test recommendations. Follow all label requirements when applying herbicides and pesticides. Maintain annual records of crops planted along with all nutrient and chemical applications.

Field/Acres	Rotation Sequence	Crop(s)	Additional notes: Tillage, Residue Management, etc.
	1	Soybean, Corn Grain	Soybeans min-till, corn grain no-till
	2		
	3	Alt - SB, CC, Corn, CC	Soybean min-till, corn grain & CC no-till
	4		
	5		
	6		

Additional guidance page(s) attached.

**Substitute Crops**

The following crops may be substituted for a planned crop in the rotation. NOTE when soybeans or corn silage are substituted for corn or a small grain, a wheat or rye cover crop is to be established and maintained until 10-15 inches tall or until late May, the following spring.

**Planned Crop**

**Acceptable Substitute Crop**

Corn (Grain)

- Soybeans or corn silage with cover crop
- Small Grains
- Hay
- Green Manure Crop

Soybeans or Corn Silage

- Corn (Grain)
- Small Grains
- Hay
- Green Manure Crop

Small Grains

- Corn with at least 30% cover after planting
- Soybeans or Corn Silage with at least 30% cover after planting and with a cover crop after harvest
- Hay
- Green Manure Crop

**OPERATION AND MAINTENANCE**

- Rotations shall provide for acceptable substitute crops in case of crop failure or shift in planting intentions for weather related or economic reasons. Acceptable substitutes are crops having similar properties that will accomplish the purpose of the original crop
- Evaluate the rotation and the crop sequence to determine if the planned system is meeting the planned purposes.

**CERTIFICATION STATEMENT:** I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

**Planner / Technical Service Provider:** X \_\_\_\_\_

**Date:** \_\_\_\_\_

**NRCS Use Only** \_\_\_\_\_

**Designed By:** LJ. Lepeta **Date** 10/17/2023

**Approved By:** \_\_\_\_\_ **Date** \_\_\_\_\_



**Producer:** Weinhofer Farms LLC      **Project or Contract:** FY24-Bushkill-Twp  
**Location:** Bushkill Twp      **County:** Northampton  
**Farm Name:** Bushkill Twp Tracts      **Farm/Tract Number:** T2690-T3983-T4041-T4138

**ESIDUE AND TILLAGE MANAGEMENT, NO TILL** Limiting soil disturbance to manage the amount, orientation and distribution of crop and plant residue on the surface year round.

**PURPOSE(S)** (Check at least one and all that apply)

- Reduce sheet and rill erosion and excessive sediment in surface waters.
- Reduce tillage-induced particulate emissions.
- Maintain or increase soil quality and organic matter content.
- Reduce energy use.
- Increase plant-available moisture.
- Provide food and escape cover for wildlife.

**Brief description of no till management plan and available no till planting equipment.**

Use no-till planting methods to plant corn, soybeans and rye. These crops will be planted directly into prior crop residues or into a cover crop where no full width tillage equipment is used. See the Conservation Crop Rotations narrative for a more detailed description of the crop rotation.

Crop residues cannot be burned. All residue must be distributed evenly across the entire field. Soil loss predictions and Soil Conditioning Index results, as calculated by RUSLE2, are attached; the Soil Conditioning Index (SCI) is positive. Contact the NRCS or Conservation District office if changes in crops, tillage, or residue levels are desired. For Operation and Maintenance, evaluate crop residue remaining after planting to ensure that appropriate residue levels are maintained.

Field#	Acres	Planned crop(s)	Amount of residue produced by each crop (%surface cover)	List ALL field operations or activities that affect residue cover, residue orientation, or surface disturbance	Operation or activity timing (month)
Attach RUSLE2 report (Use profile output NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro)					
Additional Comments					
<small>Contact NRCS if changes in crops, tillage, or residue levels are desired. Maintain annual records of crops planted and tillage used along with all nutrient &amp; chemical applications.</small>					

**OPERATION AND MAINTENANCE**

Evaluate/measure the crop residues cover and orientation after each crop to ensure the planned amounts and orientation are being achieved.

Adjust management as needed to either plan a new residue amount and orientation or adjust the planting and/or harvesting equipment.

Limited tillage to close or level ruts from harvesting equipment is allowed. No more than 10 percent of the field may be tilled for this purpose.

If there are areas of heavy residue accumulation (because of movement by water or wind) in the field, spread the residue prior to planting so it does not interfere with planter operation.

Additional Comments

**CERTIFICATION STATEMENT:** I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

Planner / Technical Service Provider: X \_\_\_\_\_

Date: \_\_\_\_\_

NRCS Use Only

Designed By: LJ. Lepeta Date 10/17/2023

Approved By: \_\_\_\_\_ Date \_\_\_\_\_



Producer: Weinhofer Farms LLC      Project or Contract: FY24-Bushkill-Twp  
 Location: Bushkill Twp      County: Northampton  
 Farm Name: Bushkill Twp Tracts      Farm/Tract Number: T2690-T3983-T4041-T4138

**COVER CROP** Grasses, legumes, and forbs planted for seasonal vegetative cover.

**PURPOSE(s):** (Check at least one and all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Reduce erosion from wind and water.                                     | <input type="checkbox"/> Suppress excessive weed pressures and break pest cycles.                             |
| <input checked="" type="checkbox"/> Maintain or increase soil health and organic matter content. | <input type="checkbox"/> Improve soil moisture use efficiency.  |
| <input type="checkbox"/> Minimize soil compaction  | <input type="checkbox"/> Reduce water quality degradation by utilizing excessive soil nutrients. (scavenging) |

**Brief description of planned cover crop management.**

Plant a cover crop to improve soil health and quality. Establish a small grain or legume cover crop to supplement existing crop residue. Plant the cover crop to allow at least 4" of growth or 50% ground cover by 12/20. NRCS recommends planting cover crops from August 15th - October 15th. If planting is late (October 15 - October 31) use no-tilled seeding methods and increase the seeding rate by 50%. Terminate cover crop before, during or after seeding cash crop by mechanical or chemical means. Harvesting cover crops for on farm forage for livestock feed is allowed.

**PLANS AND SPECIFICATIONS: Cover Crop Management** The following table provides cover crop information for each field. Mixtures are described one individual species per line. Add species to total the 100% mix rate.

Field #	Acres	Species	Seeding Rate (lbs/ac)	Seeding Date Range (Table 3) <sup>1</sup>	Seeding Method	Termination Date or Stage	Termination Method
All Fields	On time	Cereal Rye	112 (2bu)	9/15-10/15	no-till	2 weeks prior sp. plant	chemical
	Late	Cereal Rye	168 (3bu)	10/15-10/30	no-till	2 weeks prior sp. plant	chemical
	Broadcast	Cereal Rye	168 (3bu)	9/1-10/15	broadcast	2 weeks prior sp. plant	chemical

1. Seeding date ranges are listed in Table 3 of the Cover Crop 340 Practice Guide. Use FALL SEEDING DATE for Erosion Reduction Purpose

Field #	Acres	Species	Seeding Rate (lbs/ac)	Seeding Date Range (Table 3) <sup>1</sup>	Seeding Method	Termination Date or Stage	Termination Method

**OPERATION AND MAINTENANCE**

- Control growth of the cover crop to reduce competition from volunteer plants and shading.
- Control weeds in cover crops by mowing or by using other pest management techniques.
- Control soil moisture depletion by selecting water efficient plant species and terminating the cover crop before excessive transpiration.
- Evaluate the cover crop to determine if the cover crop is meeting the planned purpose(s). If the cover crop is not meeting the purpose(s) adjust the management, change the species of cover crop, or choose a different technology.

**CERTIFICATION STATEMENT:** I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

Planner / Technical Service Provider:  \_\_\_\_\_

Date: \_\_\_\_\_

**NRCS Use Only**

Designed By: LJ. Lepeta Date 10/17/2023

Approved By: \_\_\_\_\_ Date \_\_\_\_\_



Producer: Weinhofer Farms LLC Project or Contract: FY24-Bushkill-Twp  
 Location: Bushkill Twp County: Northampton  
 Farm Name: Bushkill Twp Tracts Tract Number: See ConsPlan

**REDUCED TILL** Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year-round while limiting soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting.

**PURPOSE(s):** (check at least one and all that apply)

- Reduce sheet, rill and wind erosion.
- Reduce tillage-induced particulate emissions.
- Maintain or increase soil quality and organic matter content.
- Reduce energy use.
- Increase plant-available moisture.

**Brief description of reduced till management plan & tillage equipment.**

Mulch tillage helps to reduce soil erosion and energy use, improve soil quality, and increase plant-available moisture. Manage the amount, orientation, and distribution of the crop and plant residue by limiting the amount of tillage occurring in the field. Do not MOLDBOARD plow nor use Heavy Disking on mulch till planned fields. Crop residue cannot be burned. Soil loss predictions and Soil Conditioning Index (SCI) results, as calculated by RUSLE2, are attached.

**PLANS AND SPECIFICATIONS:**

Field#	Acres	Planned crop(s)	Amount of residue produced by each crop (%surface cover)	List ALL field operations or activities that affect residue cover, residue orientation, or surface disturbance	Operation or activity timing (month)
See RUSLE2 output (Use profile output NRCS_Profile_with_SCI_STIR_Fuel_Use_and_Crop_interval_erosion04232015.pro)					

**PA345 – Residue and Tillage Management Reduced Till  
Implementation Requirements**

Additional Comments Contact NRCS if changes in crops, tillage, or residue levels are desired. Maintain annual records of crops planted and tillage used along with all nutrient & chemical applications.

**OPERATION AND MAINTENANCE**

Evaluate/measure the crop residues cover and orientation for each crop to ensure the planned amounts and orientation are achieved.

Adjust management as needed to either plan a new residue amount or orientation, or adjust the planting, tillage, or harvesting equipment.

If there are areas of heavy residue accumulation (because of movement by water or wind) in the field, spread the residue prior to planting so it does not interfere with planter operation.

**CERTIFICATION STATEMENT:** I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

Planner / Technical Service Provider:  \_\_\_\_\_

Date: \_\_\_\_\_

**NRCS Use Only**

Designed By: LJ. Lepeta Date 12-8-2023

Approved By: \_\_\_\_\_ Date \_\_\_\_\_





**Producer:** Weinhofer Farms LLC      **Project or Contract:** FY24-Bushkill-Twp  
**Location:** Bushkill Twp      **County:** Northampton  
**Farm Name:** Bushkill Twp Tracts      **Farm/Tract Number:** T2690-T3983-T4041-T4138

**NUTRIENT MANAGEMENT** Manage rate, source, placement, and timing of plant nutrients and soil amendments while reducing environmental impacts.

**PURPOSE(S)** (Check at least one and all that apply)

- Improve plant health and productivity
- Reduce excess nutrients in surface and ground water
- Reduce emissions of objectionable odors
- Reduce emissions of particulate matter (PM) and PM precursors
- Reduce emissions of greenhouse gases (GHG)
- Reduce emissions of ozone precursors
- Reduce the risk of potential pathogens from manure, biosolids, or compost application from reaching surface and ground water
- Improve or maintain soil organic matter

**Brief description of the nutrient management plan.**

All nutrients will be applied based on a nutrient management plan developed for the fields indicated on the conservation plan map and will specifically address the management of the sensitive areas indicated on the conservation plan map. Nutrients from all sources will be included. The plan will address field by field application rates and application timing requirements. The nutrient management plan will address phosphorus concerns using the current phosphorous index and the plan will be consistent with the requirements and guidance of the PA Nutrient Management Program (Act 38) Technical Manual. Soil tests must be completed at least once every three years and records of soil test results and nutrient application timing and rates must be maintained.

**OPERATION AND MAINTENANCE**

The following records are required to be maintained on the operation:

- Manure Test Results** – annually; manure analysis results for each manure group
- Soil Test Results** – current within 3 years; current soil test results for each crop management unit
- Land Application of Nutrients** – annually; location (ID) & number of acres, date of application, and application rate for each crop management unit
- Crop Yields** – annually; approximate yield levels for each crop management unit
- Uncollected Manure Information** – annually; number of animals, number of days, and average number of hours per day on each pasture unit

\_\_\_\_\_ **Manure Export Sheets** – (if applicable) completed manure export sheets for each importing operation (copy to importer; copy retained on exporting operation; small quantity exclusion only requires name, amount of manure transferred and date)

\_\_\_\_\_ **Exported Manure Applied Under Exporter Direction** – (if applicable) annually; application location (ID and notation of observation of application setbacks), number of acres, date of application, application methods, and application rate

\_\_\_\_\_ **Exported Manure Through Broker – Broker Responsible** – (if applicable) annually; broker is responsible for application records; application location (ID and notation of observation of application setbacks), number of acres, date of application, application methods, and application rate and provide copies to the importing operations

\_\_\_\_\_ **Alternative Manure Utilization Other Than Manure Export** – (if applicable) annually; amount and use of manure

**For variable rate nutrient management plans, also include—**

Maps identifying the variable application location, source, timing, amount, and placement of all plant and crop nutrients applied. GPS-based yield maps for crops where yields can be digitally collected.

**CERTIFICATION STATEMENT:** I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

**Planner / Technical Service Provider:** X \_\_\_\_\_

**Date:** \_\_\_\_\_

**NRCS Use Only**

**Designed By:** LJ. Lepeta **Date** 10/17/2023

**Approved By:** \_\_\_\_\_ **Date** \_\_\_\_\_

## 1. PROJECT INFORMATION

Project Name: **WF-Bushkill-Tracts-Pa095**

Date of Review: **10/17/2023 01:52:43 PM**

Project Category: **Agriculture/Farming, Continued agricultural field use (crops, fruit, trees, grazing)**

Project Area: **53.84 acres**

County(s): **Northampton**

Township/Municipality(s): **BUSHKILL TOWNSHIP**

ZIP Code:

Quadrangle Name(s): **WIND GAP**

Watersheds HUC 8: **Middle Delaware-Musconetcong**

Watersheds HUC 12: **Lower Bushkill Creek**

Decimal Degrees: **40.756364, -75.319942**

Degrees Minutes Seconds: **40° 45' 22.9090" N, 75° 19' 11.7919" W**



## 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

### WF-Bushkill-Tracts-Pa095

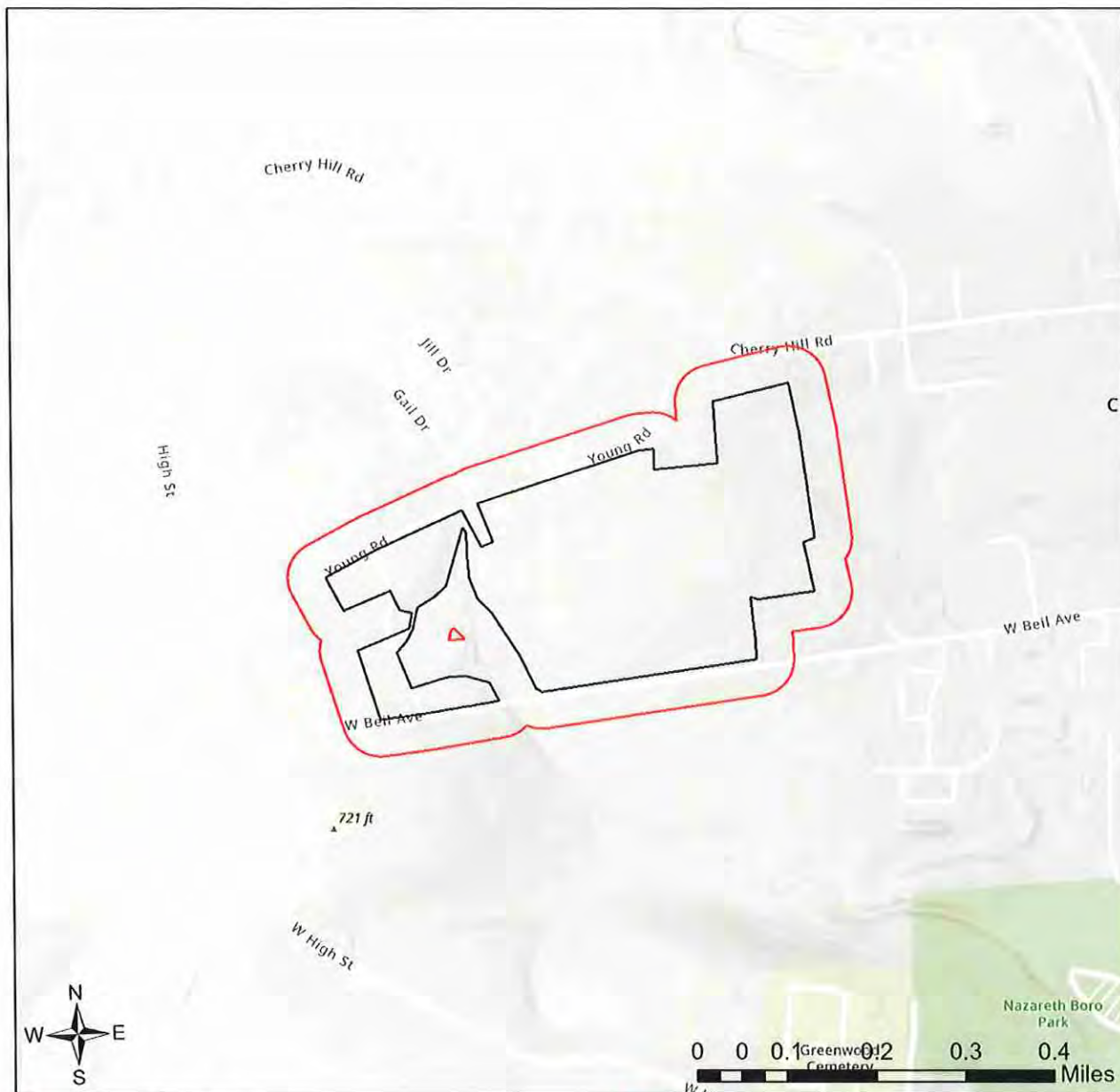




-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

### WF-Bushkill-Tracts-Pa095



-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

#### PA Game Commission

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

##### RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### U.S. Fish and Wildlife Service

##### RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

### 4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

## 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

## 6. AGENCY CONTACT INFORMATION

### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552  
Harrisburg, PA 17105-8552  
Email: [RA-HeritageReview@pa.gov](mailto:RA-HeritageReview@pa.gov)

### PA Fish and Boat Commission

Division of Environmental Services  
595 E. Rolling Ridge Dr., Bellefonte, PA 16823  
Email: [RA-FBPACENOTIFY@pa.gov](mailto:RA-FBPACENOTIFY@pa.gov)

### U.S. Fish and Wildlife Service

Pennsylvania Field Office  
Endangered Species Section  
110 Radnor Rd; Suite 101  
State College, PA 16801  
Email: [IR1\\_ESPenn@fws.gov](mailto:IR1_ESPenn@fws.gov)  
NO Faxes Please

### PA Game Commission

Bureau of Wildlife Management  
Division of Environmental Review  
2001 Elmerton Avenue, Harrisburg, PA 17110-9797  
Email: [RA-PGC\\_PNDI@pa.gov](mailto:RA-PGC_PNDI@pa.gov)  
NO Faxes Please

## 7. PROJECT CONTACT INFORMATION

Name: Lisa-Jon Lepeta  
Company/Business Name: USAD-NRCS  
Address: 3910 Adler Place, Suite 110  
City, State, Zip: Bethlehem, PA 18017  
Phone: ( 484 ) 635-3777 Fax: ( 855 ) 742-4192  
Email: [lisa-jon.lepeta@usda.gov](mailto:lisa-jon.lepeta@usda.gov)

## 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

(By)   
applicant/project proponent signature

12-15-23  
date

# Location Map - Bushkill Twp Tracts - #2690, #3983, #4041, & #4138

Client(s): WEINHOFER FARMS LLC  
Northampton County, Pennsylvania  
Approximate Acres: 53.74

Assisted By: LISA-JON LEPETA  
USDA - NRCS  
BETHLEHEM SERVICE CENTER


Land Units: Tract 2690, Fields 1 Tract 3963, Fields 4 Tract 4041, Fields 3,5 Tract 4138, Fields 3



Source: Esri, GeoEye, i-cubed, USDA, USGS, AEX/TEO, TomTom

Prepared with assistance from USDA-Natural Resources Conservation Service



 Practice Schedule PLUS



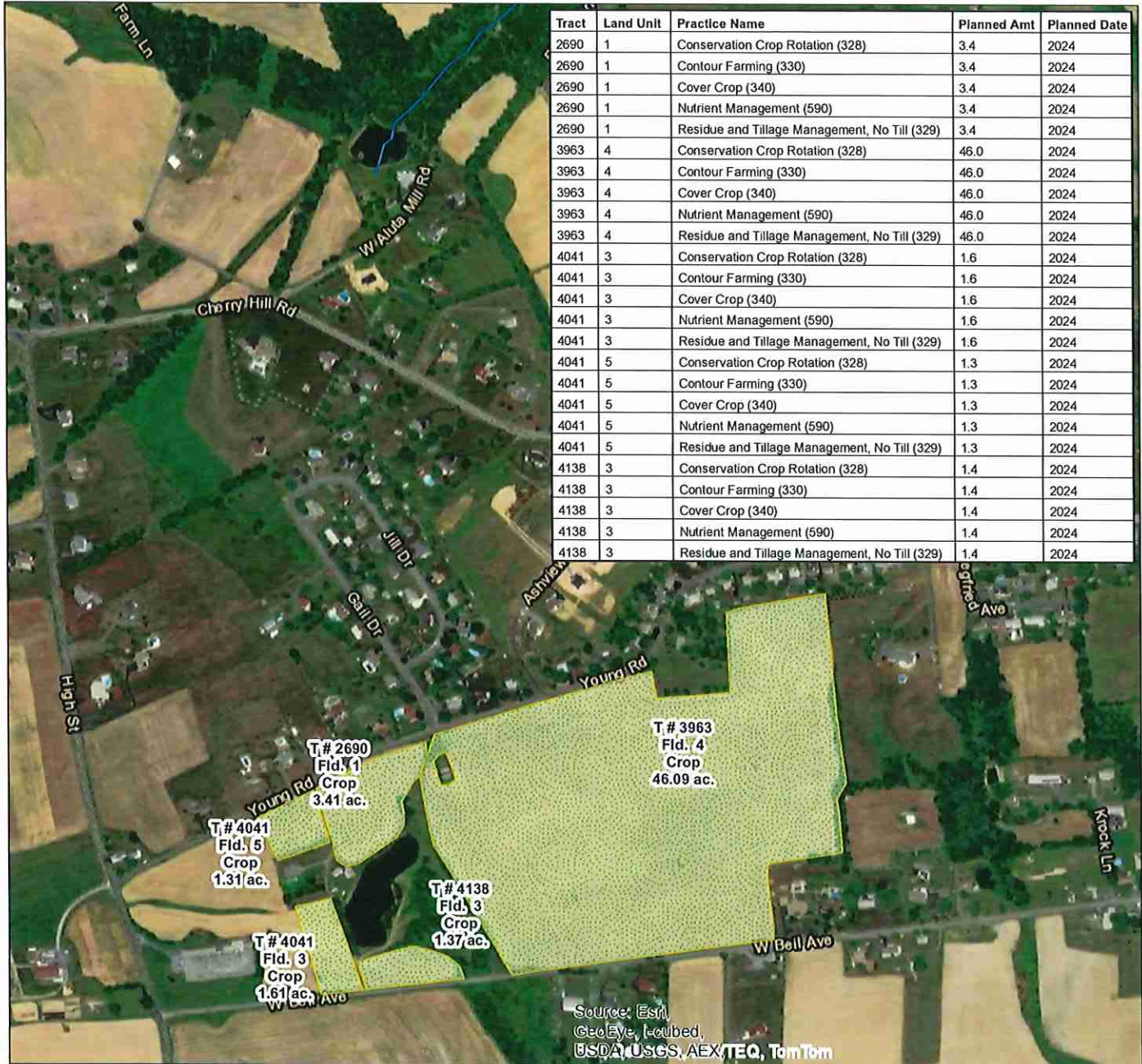


# Location Map - Bushkill Twp Tracts - #2690, #3983, #4041, & #4138

Client(s): WEINHOFER FARMS LLC  
 Northampton County, Pennsylvania  
 Approximate Acres: 53.74

Assisted By: LISA-JON LEPETA  
 USDA - NRCS  
 BETHLEHEM SERVICE CENTER

Land Units: Tract 2690, Fields 1 Tract 3963, Fields 4 Tract 4041, Fields 3,5 Tract 4138, Fields 3



Tract	Land Unit	Practice Name	Planned Amt	Planned Date
2690	1	Conservation Crop Rotation (328)	3.4	2024
2690	1	Contour Farming (330)	3.4	2024
2690	1	Cover Crop (340)	3.4	2024
2690	1	Nutrient Management (590)	3.4	2024
2690	1	Residue and Tillage Management, No Till (329)	3.4	2024
3963	4	Conservation Crop Rotation (328)	46.0	2024
3963	4	Contour Farming (330)	46.0	2024
3963	4	Cover Crop (340)	46.0	2024
3963	4	Nutrient Management (590)	46.0	2024
3963	4	Residue and Tillage Management, No Till (329)	46.0	2024
4041	3	Conservation Crop Rotation (328)	1.6	2024
4041	3	Contour Farming (330)	1.6	2024
4041	3	Cover Crop (340)	1.6	2024
4041	3	Nutrient Management (590)	1.6	2024
4041	3	Residue and Tillage Management, No Till (329)	1.6	2024
4041	5	Conservation Crop Rotation (328)	1.3	2024
4041	5	Contour Farming (330)	1.3	2024
4041	5	Cover Crop (340)	1.3	2024
4041	5	Nutrient Management (590)	1.3	2024
4041	5	Residue and Tillage Management, No Till (329)	1.3	2024
4138	3	Conservation Crop Rotation (328)	1.4	2024
4138	3	Contour Farming (330)	1.4	2024
4138	3	Cover Crop (340)	1.4	2024
4138	3	Nutrient Management (590)	1.4	2024
4138	3	Residue and Tillage Management, No Till (329)	1.4	2024

Source: Esri, GeoEye, Earthstar, USDA, USGS, AEX, TEQ, TomTom

Prepared with assistance from USDA-Natural Resources Conservation Service



Conservation Practice Polygons			
	Conservation Crop Rotation (328)		Contour Farming (330)
	Cover Crop (340)		Residue and Tillage Management, No-Till (329)
	Nutrient Management (590)		Practice Schedule PLUs



## Soils Inventory Report

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
2690	1	BkB	Berks-Weikert complex, 3 to 8 percent slopes	3.3	97%
2690	1	CpB	Comly silt loam, 3 to 8 percent slopes	0.1	3%

**Total** **3.4** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
3963	4	BkB	Berks-Weikert complex, 3 to 8 percent slopes	34.0	74%
3963	4	BkC	Berks-Weikert complex, 8 to 15 percent slopes	12.0	26%
3963	4	UIB	Urban land-Berks complex, 0 to 8 percent slopes	0.1	0%

**Total** **46.1** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
4041	3	BkC	Berks-Weikert complex, 8 to 15 percent slopes	0.8	47%
4041	3	CpB	Comly silt loam, 3 to 8 percent slopes	0.9	53%

**Total** **1.7** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
4041	5	BkB	Berks-Weikert complex, 3 to 8 percent slopes	1.3	100%

**Total** **1.3** **100%**

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
4138	3	BkC	Berks-Weikert complex, 8 to 15 percent slopes	0.7	50%
4138	3	BtB	Brinkerton-Comly silt loams, 3 to 8 percent slopes	0.7	50%

**Total** **1.4** **100%**

**Grand Total** **53.9** **100%**

# Soils Map - Bushkill Twp Tracts - #2690, #3983, #4041, & #4138

Client(s): WEINHOFER FARMS LLC  
Northampton County, Pennsylvania  
Approximate Acres: 53.74

Assisted By: LISA-JON LEPETA  
USDA - NRCS  
BETHLEHEM SERVICE CENTER

Land Units: Tract 2690, Fields 1 Tract 3963, Fields 4 Tract 4041, Fields 3,5 Tract 4138, Fields 3



Prepared with assistance from USDA-Natural Resources Conservation Service



**Practice Schedule PLUs**

**Soils**

Soil Mapunit



## Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

### Report—Map Unit Description (Brief, Generated)

Northampton County, Pennsylvania

**Map Unit:** BkB--Berks-Weikert complex, 3 to 8 percent slopes

**Component:** Berks (65%)

The Berks component makes up 65 percent of the map unit. Slopes are 3 to 8 percent. This component is on ridges, hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Weikert (25%)

The Weikert component makes up 25 percent of the map unit. Slopes are 3 to 8 percent. This component is on ridges, hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is very low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This

component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Component: Comly (6%)**

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component: Brinkerton (4%)**

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit: BkC--Berks-Weikert complex, 8 to 15 percent slopes**

**Component: Berks (65%)**

The Berks component makes up 65 percent of the map unit. Slopes are 8 to 15 percent. This component is on ridges on hills. The parent material consists of residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

**Component: Weikert (25%)**

The Weikert component makes up 25 percent of the map unit. Slopes are 8 to 15 percent. This component is on ridges on hills. The parent material consists of gray and brown acid residuum weathered from shale and siltstone and/or fine grained sandstone. Depth to a root restrictive layer, bedrock, lithic, is 10 to 20 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY008PA Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

**Component: Comly (6%)**

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component: Brinkerton (4%)**

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit: BtB--Brinkerton-Comly silt loams, 3 to 8 percent slopes**

**Component: Brinkerton (75%)**

The Brinkerton component makes up 75 percent of the map unit. Slopes are 3 to 8 percent. This component is on shale hills on valleys. The parent material consists of fine-silty colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 11 to 30 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is moderate. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, October, November, December. Organic matter content in the surface horizon is about 3 percent. This component is in the F147XY005PA Poorly Drained Mixed Sedimentary Toeslope ecological site. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

**Component: Comly (20%)**

The Comly component makes up 20 percent of the map unit. Slopes are 3 to 8 percent. This component is on shale hills, valleys. The parent material consists of acid fine-loamy colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 20 to 36 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2

percent. This component is in the F147XY005PA Poorly Drained Mixed Sedimentary Toeslope ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Map Unit:** CpB--Comly silt loam, 3 to 8 percent slopes

**Component:** Comly (90%)

The Comly component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on colluvial valleys, shale hills. The parent material consists of acid fine-loamy colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 20 to 35 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 24 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. This component is in the F147XY002PA Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Brinkerton (5%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

**Map Unit:** UIB--Urban land-Berks complex, 0 to 8 percent slopes

**Component:** Urban land (65%)

Generated brief soil descriptions are created for major soil components. The Urban land is a miscellaneous area.

**Component:** Berks (25%)

The Berks component makes up 25 percent of the map unit. Slopes are 0 to 8 percent. This component is on ridges, valleys. The parent material consists of acid brown residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. This component is in the F148XY021PA Dry, Piedmont - felsic, Upland, Mixed Oak Heath / Oak-Pine Woodland, Shallow Mixed Sedimentary Upland ecological site. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

**Component:** Comly (5%)

Generated brief soil descriptions are created for major soil components. The Comly soil is a minor component.

**Component:** Brinkerton (5%)

Generated brief soil descriptions are created for major soil components. The Brinkerton soil is a minor component.

## Data Source Information

Soil Survey Area: Northampton County, Pennsylvania

Survey Area Data: Version 16, Sep 07, 2023

# Topographic Map

Date: 12/8/2023

Client(s): WEINHOFER FARMS LLC  
Northampton County, Pennsylvania  
Approximate Acres: 53.74

BETHLEHEM SERVICE CENTER

Land Units: Tract 2690, Fields 1 Tract 3963, Fields 4 Tract 4041, Fields 3,5 Tract 4138, Fields 3



Copyright: © 2016 Esri, DeLorme, NAVTEQ, TomTom, USDA-NRCS-NGCE & USCB

Prepared with assistance from USDA-Natural Resources Conservation Service



Practice Schedule PLUS



## **Appendix G**

**Sample Lease Agreement – BMPs 048, 048A, 060, and 061**



# FARMLAND LEASE

THIS AGREEMENT (“Agreement”) is entered into on the \_\_\_\_\_ day of \_\_\_\_\_, 2022, between BUSHKILL TOWNSHIP, a Township of the Second Class, 1114 Bushkill Center Road, Nazareth, Northampton County, Pennsylvania 18064, hereinafter referred to as “Landlord”

A N D

WEINHOFER FARMS, LLC, 4547 Spruce Street, Whitehall, Pennsylvania 18067, hereinafter referred to as “Tenant”.

**1. PROPERTY DESCRIPTION.** Landlord expressly leases to Tenant, to use for agricultural and related purposes only, the following described property (“Leased Property”) located in the Township of Bushkill, County of Northampton, Commonwealth of Pennsylvania:

- A. Tax Parcel No. J7-2-22 consisting of 31.25 farmable acres
- B. Tax Parcel No. J7-1-6 consisting of 12.86 farmable acres

**2. TERM OF LEASE.** The provisions of this Agreement shall be in effect for a period of three (3) years commencing on the First day of April, 2022.

**3. LEASE FEE AND RENTAL.** Tenant shall pay to Landlord an annual rental for each of the properties as follows::

- A. Tax Parcel No. J7-2-22 annual rent of \$5,781.25
- B. Tax Parcel No. J7-1-6 annual rent of \$2,379.10

Rent for 2022 shall be paid on or before the commencement date of this Agreement, and on or before the First day of April each year thereafter.

**4. DEFAULT/TERMINATION.** The goal of this Agreement is to uphold the conservation values of Bushkill Township. If either party fails to uphold these

values through noncompliance with any part of this Agreement, the other party shall have the right to terminate the lease unless cured in compliance with this section. The non-defaulting party shall give written notice to the defaulting party, specifying the violations of the Agreement. If violations are not corrected within fifteen (15) days, the lease may be terminated at the option of the Landlord. The initiation of any bankruptcy proceeding by or against Tenant shall constitute a default under this Agreement.

**5. SURRENDER.** Upon termination, Tenant must vacate the Leased Property and remove all personal possessions and improvements that Tenant is required or permitted to remove. Tenant shall vacate the Leased Property upon termination. If termination results from Tenant's default, or the term of lease expires, and Tenant fails to vacate the Leased Property as provided herein, Landlord may, at its discretion, take possession of any agricultural products and chattel remaining in or on the land, proceeds of the sale of which shall first reimburse Landlord for any Rent in arrears, costs incurred in the removal and/or sale of such products and chattel, and costs of any necessary restoration of land and improvements, remainder to Tenant.

**6. ASSIGNMENT.** Tenant shall not transfer or assign this Agreement or sublet the whole or any part of the Leased Property without the written consent of Landlord.

**7. ENFORCEABILITY.** Any lapse by Landlord to strictly enforce obligations under this Agreement shall not be deemed constructive acquiescence. If, at any time, Landlord does not enforce any obligation of Tenant under this Agreement, Landlord retains the right to require strict compliance with this Agreement in the future.

**8. AMENDMENTS.** All amendments to this Agreement must be in writing and signed by both parties.

**9. TENANT'S RIGHTS & OBLIGATIONS.** For the entire term of the Agreement, Tenant shall maintain insurance policies and provide Landlord with proof of insurance covering the following types of insurance and in stated minimum amounts: Liability and Property Damage Insurance in the amount of \$250,000.00 per person and per occurrence, and Workers Compensation as required by statute. Tenant shall furnish Landlord with a Certificate of Insurance at the time of execution of this Agreement and upon each renewal of the insurance policy. Tenant agrees to name Landlord as an additional insured on all applicable insurance policies. Failure to secure and maintain insurance pursuant to this Agreement shall constitute a default.

**10. LAND USES AND RESTRICTIONS.** Tenant must seek approval before undertaking activities on the Leased Property not within the management plan and normally acceptable agricultural practices, and activities reasonably ancillary to those uses, including but not limited to commercial use, advertisement, sign postage, and raising livestock. Landlord reserves the right to prohibit recreational, commercial, and other activities on the Leased Property, including but not limited to ATV use and horse riding. Tenant agrees to farm and maintain the Leased Property in accordance with generally accepted agricultural practices, in such a way that maintains the land's value to the greatest extent practicable. This includes taking any and all reasonable and necessary actions to maintain the integrity of the land. Tenant shall appropriately manage agricultural waste. Tenant shall not use or spread sewage sludge, biosolids, residential septage, and/or byproducts of sewage sludge, biosolids, and/or

residential septage via land application or other use upon the lands herein. The definitions of biosolids, residential septage, and sewage sludge are as follows: (i) Biosolids - see sewage sludge; (ii) Residential Septage - any substance now or hereafter defined, listed or otherwise classified pursuant to any federal, state or local law, regulation or requirement as such material. This shall expressly include residential septage as defined in 25 Pa. Code §§ 271.1 and 271.907; and (iii) Sewage Sludge - any substance now or hereafter defined, listed or otherwise classified pursuant to any federal, state or local law, regulation or requirement as such material, including biosolids. This shall expressly include both Class A and Class B biosolids, and sewage sludge as defined in 25 Pa. Code § 271.1. This term shall also include any byproducts of sewage sludge. Tenant shall not sell or remove from the Leased Property any soil, sod, sand, gravel, rock, oil, coal, natural gas, lumber, or other natural resource. Tenant further agrees to make normal repairs on the Leased Property to protect it from substantial deterioration. Tenant is financially responsible for whatever remedial measures are necessary to repair the Leased Property. Tenant shall not hunt or trap on the Leased Property. Bushkill Township is authorized to allow game management of the Leased Property, including culling game populations, by an organization with this purpose. Any such management activities will be preceded by notice to or attempt to notify Tenant by mail, telephone, or other method. No-till, High Residue Minimum Soil Disturbance (HRMSD) farming per USDA-NRCS and Chesapeake Bay Program guidance and specifications shall be performed on the leased area. Plowing of the soil is not allowed. A cover crop shall be planted and established immediately following harvest and prior to the end of the growing season sufficiently to allow proper establishment prior to the end of the growing season,

for each year of their lease agreement term, including the final year. Cover crops are intended to stabilize and rejuvenate soil, annually, between planting of cash crops to minimize or eliminate the need for conventional plowing.

**11. INDEMNIFICATION.** Tenant shall protect, indemnify and hold the Landlord harmless from and against any and all loss, claims, liability or costs (including legal costs and attorney's fees) except to the extent caused by or arising from the negligence or willful misconduct of Landlord or its agents, employees, and assignees.

**12. GOVERNING LAW.** This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania. Tenant is responsible for insurance compliance with all laws, regulations, and Ordinances applicable to Tenant's use of the Leased Property.

**13. THIS AGREEMENT DOES NOT CREATE A PARTNERSHIP.** This lease shall not be deemed to be, nor intended to give rise to, a partnership relation. Neither party will obligate the other for debts, liabilities, or damages.

**14. GENERAL INTEGRATION CLAUSE.** This Agreement encompasses the entire agreement of the parties, and supersedes all previous understandings and agreements between the parties, whether oral or written.

**15. SEVERABILITY.** If any provision of this lease or portion of such provision or the application thereof to any person or circumstance is held invalid, the remainder of the lease (or the remainder of such provision) and the application thereof to other persons or circumstances shall not be affected thereby.

DULY EXECUTED AND APPROVED This \_\_\_\_ day of \_\_\_\_\_,  
2022, by the parties hereto.

LANDLORD:

**BUSHKILL TOWNSHIP**

**ATTEST:**

\_\_\_\_\_  
**BELINDA ROBERTS, Secretary**

**By:**\_\_\_\_\_

**BRIEN KOCHER**

TENANT:

**WEINHOFER FARMS, LLC**

**ATTEST:**

\_\_\_\_\_

**By:**\_\_\_\_\_

**BRAD WEINHOFER**

(484) 239-6456

# FARMLAND LEASE

THIS AGREEMENT ("Agreement") is entered into on the \_\_\_\_\_ day of \_\_\_\_\_, 2022, between BUSHKILL TOWNSHIP, a Township of the Second Class, 1114 Bushkill Center Road, Nazareth, Northampton County, Pennsylvania 18064, hereinafter referred to as "Landlord"

A N D

WEINHOFER FARMS, LLC, 4547 Spruce Street, Whitehall, Pennsylvania 18067, hereinafter referred to as "Tenant".

**1. PROPERTY DESCRIPTION.** Landlord expressly leases to Tenant, to use for agricultural and related purposes only, the following described property ("Leased Property") located in the Township of Bushkill, County of Northampton, Commonwealth of Pennsylvania:

- A. Tax Parcel No. J7-8-3 consisting of 2.08 farmable acres
- B. Tax Parcel No. J7-8-3C consisting of 29.92 farmable acres
- C. Tax Parcel No. J7-8-24 consisting of 20 farmable acres

**2. TERM OF LEASE.** The provisions of this Agreement shall be in effect for a period of three (3) years commencing on the First day of April, 2022.

**3. LEASE FEE AND RENTAL.** Tenant shall pay to Landlord an annual rental for each of the properties as follows::

- A. Tax Parcel No. J7-8-3 annual rent of \$426.40
- B. Tax Parcel No. J7-8-3C annual rent of \$6,133.60
- C. Tax Parcel No. J7-8-24 annual rent of \$4,100.00

Rent for 2022 shall be paid on or before the commencement date of this Agreement, and on or before the First day of April each year thereafter.

**4. DEFAULT/TERMINATION.** The goal of this Agreement is to uphold the conservation values of Bushkill Township. If either party fails to uphold these values through noncompliance with any part of this Agreement, the other party shall have the right to terminate the lease unless cured in compliance with this section. The non-defaulting party shall give written notice to the defaulting party, specifying the violations of the Agreement. If violations are not corrected within fifteen (15) days, the lease may be terminated at the option of the Landlord. The initiation of any bankruptcy proceeding by or against Tenant shall constitute a default under this Agreement.

**5. SURRENDER.** Upon termination, Tenant must vacate the Leased Property and remove all personal possessions and improvements that Tenant is required or permitted to remove. Tenant shall vacate the Leased Property upon termination. If termination results from Tenant's default, or the term of lease expires, and Tenant fails to vacate the Leased Property as provided herein, Landlord may, at its discretion, take possession of any agricultural products and chattel remaining in or on the land, proceeds of the sale of which shall first reimburse Landlord for any Rent in arrears, costs incurred in the removal and/or sale of such products and chattel, and costs of any necessary restoration of land and improvements, remainder to Tenant.

**6. ASSIGNMENT.** Tenant shall not transfer or assign this Agreement or sublet the whole or any part of the Leased Property without the written consent of Landlord.

**7. ENFORCEABILITY.** Any lapse by Landlord to strictly enforce obligations under this Agreement shall not be deemed constructive acquiescence.



If, at any time, Landlord does not enforce any obligation of Tenant under this Agreement, Landlord retains the right to require strict compliance with this Agreement in the future.

**8. AMENDMENTS.** All amendments to this Agreement must be in writing and signed by both parties.

**9. TENANT'S RIGHTS & OBLIGATIONS.** For the entire term of the Agreement, Tenant shall maintain insurance policies and provide Landlord with proof of insurance covering the following types of insurance and in stated minimum amounts: Liability and Property Damage Insurance in the amount of \$250,000.00 per person and per occurrence, and Workers Compensation as required by statute. Tenant shall furnish Landlord with a Certificate of Insurance at the time of execution of this Agreement and upon each renewal of the insurance policy. Tenant agrees to name Landlord as an additional insured on all applicable insurance policies. Failure to secure and maintain insurance pursuant to this Agreement shall constitute a default.

**10. LAND USES AND RESTRICTIONS.** Tenant must seek approval before undertaking activities on the Leased Property not within the management plan and normally acceptable agricultural practices, and activities reasonably ancillary to those uses, including but not limited to commercial use, advertisement, sign postage, and raising livestock. Landlord reserves the right to prohibit recreational, commercial, and other activities on the Leased Property, including but not limited to ATV use and horse riding. Tenant agrees to farm and maintain the Leased Property in accordance with generally accepted agricultural practices, in such a way that maintains the land's value to the greatest extent practicable. This includes taking any and all reasonable and necessary actions

to maintain the integrity of the land. Tenant shall appropriately manage agricultural waste. Tenant shall not use or spread sewage sludge, biosolids, residential septage, and/or byproducts of sewage sludge, biosolids, and/or residential septage via land application or other use upon the lands herein. The definitions of biosolids, residential septage, and sewage sludge are as follows: (i) Biosolids - see sewage sludge; (ii) Residential Septage - any substance now or hereafter defined, listed or otherwise classified pursuant to any federal, state or local law, regulation or requirement as such material. This shall expressly include residential septage as defined in 25 Pa. Code §§ 271.1 and 271.907; and (iii) Sewage Sludge - any substance now or hereafter defined, listed or otherwise classified pursuant to any federal, state or local law, regulation or requirement as such material, including biosolids. This shall expressly include both Class A and Class B biosolids, and sewage sludge as defined in 25 Pa. Code § 271.1. This term shall also include any byproducts of sewage sludge. Tenant shall not sell or remove from the Leased Property any soil, sod, sand, gravel, rock, oil, coal, natural gas, lumber, or other natural resource. Tenant further agrees to make normal repairs on the Leased Property to protect it from substantial deterioration. Tenant is financially responsible for whatever remedial measures are necessary to repair the Leased Property. Tenant shall not hunt or trap on the Leased Property. Bushkill Township is authorized to allow game management of the Leased Property, including culling game populations, by an organization with this purpose. Any such management activities will be preceded by notice to or attempt to notify Tenant by mail, telephone, or other method. No-till, High Residue Minimum Soil Disturbance (HRMSD) farming per USDA-NRCS and Chesapeake Bay Program guidance and specifications shall be performed on the leased area.

Plowing of the soil is not allowed. A cover crop shall be planted and established immediately following harvest and prior to the end of the growing season sufficiently to allow proper establishment prior to the end of the growing season, for each year of their lease agreement term, including the final year. Cover crops are intended to stabilize and rejuvenate soil, annually, between planting of cash crops to minimize or eliminate the need for conventional plowing.

**11. INDEMNIFICATION.** Tenant shall protect, indemnify and hold the Landlord harmless from and against any and all loss, claims, liability or costs (including legal costs and attorney's fees) except to the extent caused by or arising from the negligence or willful misconduct of Landlord or its agents, employees, and assignees.

**12. GOVERNING LAW.** This Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania. Tenant is responsible for insurance compliance with all laws, regulations, and Ordinances applicable to Tenant's use of the Leased Property.

**13. THIS AGREEMENT DOES NOT CREATE A PARTNERSHIP.** This lease shall not be deemed to be, nor intended to give rise to, a partnership relation. Neither party will obligate the other for debts, liabilities, or damages.

**14. GENERAL INTEGRATION CLAUSE.** This Agreement encompasses the entire agreement of the parties, and supersedes all previous understandings and agreements between the parties, whether oral or written.

**15. SEVERABILITY.** If any provision of this lease or portion of such provision or the application thereof to any person or circumstance is held invalid, the remainder of the lease (or the remainder of such provision) and the application thereof to other persons or circumstances shall not be affected thereby.

DULY EXECUTED AND APPROVED This \_\_\_\_ day of \_\_\_\_\_,  
2022, by the parties hereto.

**ATTEST:**

\_\_\_\_\_  
**BELINDA ROBERTS, Secretary**

LANDLORD:

**BUSHKILL TOWNSHIP**

**By:** \_\_\_\_\_  
**BRIEN KOCHER**

TENANT:

**WEINHOFER FARMS, LLC**

**ATTEST:**

\_\_\_\_\_

**By:** \_\_\_\_\_  
**BRAD WEINHOFFER**  
(484) 239-6456