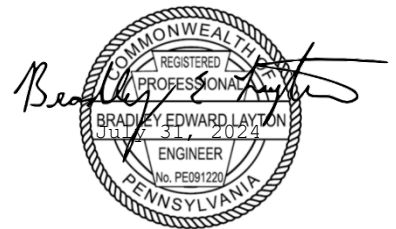


# ENVIRONMENTAL REPORT

ZIEGLER'S BLUE MOUNTAIN GAME FARM INC [OWNER]  
ZBMGF SOLAR PV [PROJECT]  
1660 N STATE ROUTE 934  
ANNVILLE, PENNSYLVANIA 17003-8535  
NORTH ANNVILLE TOWNSHIP, LEBANON COUNTY



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OCT 31, 2024

## TABLE OF CONTENTS

1.0	PURPOSE AND NEED OF PROJECT .....	5
1.1	Project Description and Location (Support Documents in Attachment A) .....	6
1.2	Purpose and Need of Project .....	12
2.0	Land Ownership and Land Use .....	13
2.1	Land Use (Support Documents in Attachment A) .....	13
2.1.1	Installer and Engineer have a strong track record of collaboration .....	15
2.1.2	Lebanon County Solar Guidelines .....	16
2.1.3	North Annville Solar Guidelines .....	17
2.2	Formally Classified Lands .....	19
2.2.1	Proximity to Formally Classified Lands .....	21
2.2.2	Tribal correspondence .....	21
2.2.3	Visual Impacts .....	22
2.2.4	Mitigation measures .....	22
2.3	Socio-Economic and Environmental Justice .....	22
2.4	Intergovernmental Review .....	22
2.5	Environmental Site Assessment and Environmental Risk Management .....	22
3.0	Cultural Resources and Historic Properties .....	23
3.1	PA-SHARE Correspondence .....	23
3.1.1	PA-SHARE ER Project #2024PR03738.001 re historical farmstead letter .....	23
3.1.2	Email from Noelle Michel, Scientist II (CTR) regarding SHPO, THPO, Land Conversion, Eco Diversity .....	25
3.2	Historic Property Findings .....	26
3.3	HUD Tribal Correspondence .....	30
3.3.1	Delaware Nation, Oklahoma .....	30
3.3.2	Delaware Tribe of Indians .....	30
3.3.3	Eastern Shawnee Tribe of Oklahoma .....	30
3.3.4	Seneca-Cayuga Nation .....	31
3.3.5	Mitigation Measures .....	31
4.0	Biological Resources .....	32
4.1	Listed Threatened and Endangered Species .....	32
4.1.1	PNDI .....	33
4.1.2	PA Fish and Boad Commission .....	36
4.1.3	US Fish and Wildlife Service .....	36
4.1.4	FWS via IPaC .....	36
4.1.5	Vegetation Removal .....	36
4.2	Migratory Bird Treaty Act .....	37



4.2.1	Mitigation Measures .....	38
4.3	Bald and Golden Eagle Protection Act .....	38
4.4	Invasive Species .....	39
4.4.1	Mitigation Measures .....	41
5.0	Wetlands .....	41
6.0	Floodplains.....	43
7.0	Coastal Resources.....	44
7.1	Coastal Barrier Resources Act and Coastal Zone Management Act.....	44
8.0	Important Farmland .....	45
9.0	Other Resources .....	47
9.1	Air Quality.....	47
9.2	Water Quality.....	49
9.3	Noise .....	49
9.4	Transportation .....	50
9.5	Aesthetics .....	50
10.0	MITIGATION SUMMARY .....	51
11.0	SUPPORT Documentation .....	55
12.0	List of Preparers.....	56
12.1	ER Preparation Communication.....	57
13.0	Attachment A: Attachments and Exhibits.....	58
13.1	TAB A – PROJECT DESCRIPTION   PURPOSE   ALTERNATIVES .....	58
13.1.1	USGS Topographic Map.....	58
13.1.2	Aerial Photos.....	58
13.1.3	Site Survey/Plan .....	58
13.1.4	Photos of Existing Structure(s).....	58
13.1.5	Alternatives .....	59
13.1.6	NRCS Farmland Soils Map .....	60
13.1.7	Formally Classified Land Documents .....	64
13.1.8	Intergovernmental Review Comments .....	71
13.2	TAB C – FLOODPLAINS .....	72
13.2.1	FEMA FIRM Map .....	72
13.2.2	FEMA Form 086-0-32 .....	Error! Bookmark not defined.
13.2.3	FEMA Elevation Certificate From 086-0-33.....	Error! Bookmark not defined.
13.2.4	Stormwater Permit .....	73
13.3	TAB D – WETLANDS .....	79
13.3.1	NRCS Hydric Soils Map .....	79
13.3.2	USFWS NWI Map .....	84

13.3.3	Wetland Delineation Survey .....	84
13.3.4	USACE Jurisdictional .....	84
13.3.5	Determination (if a structure is located in/near a wetland) .....	84
13.4	TAB E – CULTURAL RESOURCES AND HISTORIC PROPERTIES .....	85
13.4.1	PA SHPO Consultation – Gardosik and McKeel .....	85
13.4.2	APE Map .....	87
13.4.3	Photos of Existing Structures .....	87
13.4.4	Memorandum of Agreement (if adverse effect) .....	89
13.5	TAB F – BIOLOGICAL RESOURCES .....	90
13.5.1	PNDI Receipt .....	90
13.5.2	USFWS Species List .....	96
13.5.3	Bald Eagle Map .....	111
13.5.4	DCNR Conservation Explorer Report .....	123
13.5.5	DCNR Conservation Explorer Map .....	123
13.5.6	Important Bird Area Map .....	124
13.5.7	Invasive Species Lists .....	126
13.5.8	Native Planting/Landscaping Ordinance .....	126
13.6	TAB G – WATER QUALITY .....	127
13.6.1	Sole Source Aquifer Map .....	127
13.6.2	Well Location Map .....	128
13.6.3	Stormwater Requirements .....	128
13.6.4	NPDES Permit .....	128
13.6.5	Groundwater Protection Location .....	128
13.6.6	Watershed Plan .....	128
13.6.7	Letter on Available Capacity for Public Water and Sewer .....	128
13.6.8	Permitting Requirements .....	128
13.7	TAB H – COASTAL RESOURCES .....	129
13.8	TAB I – SOCIO-ECONOMIC AND ENVIRONMENTAL JUSTICE .....	130
13.8.1	Minority and Low-Income Populations .....	130
13.8.2	Form RD 2006-38 .....	135
13.9	TAB J – AIR QUALITY .....	136
13.10	TAB K – NOISE .....	144
13.11	TAB L – TRANSPORTATION .....	144
13.12	TAB M – AESTHETICS .....	144
13.13	TAB N – HUMAN HEALTH AND SAFETY .....	145

## 1.0 PURPOSE AND NEED OF PROJECT

USDA Rural Development is a mission area that includes three federal agencies – Rural Business-Cooperative Service, Rural Housing Service, and Rural Utilities Service. The agencies have in excess of 50 programs that provide financial assistance and a variety of technical and educational assistance to eligible rural and tribal populations, eligible communities, individuals, cooperatives, and other entities with a goal of improving the quality of life, sustainability, infrastructure, economic opportunity, development, and security in rural America. Financial assistance can include direct loans, guaranteed loans, and grants in order to accomplish program objectives.

*"To increase economic opportunity and improve the quality of life for all rural Americans."*  
– USDA RURAL DEVELOPMENT

Ziegler's Blue Mountain Game Farm Inc (ZBMGF), a farm [Farm] in North Annville Township of Lebanon County Pennsylvania, owned and operated by Sheila and Nelson Ziegler [Owners], is seeking federal financial assistance under the USDA Rural Development's Rural Business Service (RBS), Rural Energy for America Program (REAP) Grant. The purpose of the Project is to offset the broiler, sheep, rye, oats and pea-growing operation's electricity consumption with a ground-mount solar photovoltaic source to be installed on the Farm as described in the March 31, 2024 submission.<sup>1</sup> The need for this renewable energy project [Project] is to reduce the cost of electricity for the Farm and indeed to provide an additional revenue stream for overproduction of electricity, while reducing the Farm's reliance on fossil fuels.

Pursuant to the National Environmental Policy Act of 1969, National Historic Preservation Act of 1966 as amended, and 7 CFR 1970 Rural Development Environmental Policy and Procedures, I, Bradley Layton PhD PE MLE, have prepared this Environmental Report in collaboration with the Owners, the Owner's accountant, Cher "Sadie" Poitevin and Green Way Solar [Installer] to facilitate the evaluation of potential environmental impacts of a proposed 256-kWDC ground-mount solar photovoltaic system for review by the Pennsylvania USDA Rural Development Office.

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<sup>1</sup> The Mar 31, 2024 submission remains under review pending approval of this Environmental Report.

## 1.1 Project Description and Location (Support Documents in Attachment A)

ZBMGF, the Farm in rural Pennsylvania, wholly owned and operated by Sheila and Nelson Ziegler, is seeking to install a 256-kWDC ground-mount solar photovoltaic system located at 1660 N State Route 934, Annville, Pennsylvania 17003-8535, an agriculturally zoned area in North Annville Township of Lebanon County. The Project consists of the following components:

- kW of system: 256-kWDC
- Number of panels: 528 Q.PEAK DUO XL-10.3/BFG 485 W
- Number of Invertors: 16 SE 11400-H
- Connection point for the grid: Met-Ed service pole
- Method of installation to connect the array and interconnection: new 1,200-A AC disconnect
- New or existing power pole to connect to grid: existing
- Type of ground mount installation: Solar Foundations USA 2 ½" sch-40 helical pile – 60" deep
- Type of ground cover under the array: weed-block fabric followed by topsoil and native grasses
- Fencing: TBD
- Electrical building size: 20' × 25'
- Electrical building description: Existing utility building on property – no additional equipment pads – all equipment installed on array racks – all other equipment in existing building (**Figure 26**, pg. 58)
- Project acreage:
  - trench path:  $563' \times 0.7' = 375 \text{ ft}^2$
  - ground cover:  $11,716 \text{ ft}^2$  (0.269 acres)
  - ground contouring: none – proposed site already well-contoured
  - ground excavation: trenching + helical pile driving ( $375 \text{ ft}^2 + 11,716 \text{ ft}^2$ )
  - graveled areas: none
  - inverters: mounted on N side of N arrays  $16 \times 1.5' \times 0.5' = 12 \text{ ft}^2$
  - utility line: nearest existing utility pole on property adjacent to State Route 934 approximately 1,200' from array 0 ft<sup>2</sup>
  - connection points: at inverter 12 ft<sup>2</sup>
  - array:  $11,716 \text{ ft}^2$
- Acreage of actual ground disturbance for ground mount: 0.269 ac<sup>2</sup>
- Acreage of actual ground disturbance for trench (depth and width of corridor): 0.093 ac 36" deep × 8" wide
  - demolition: none
  - utilities: installation of new 1,200-A AC disconnect to utility
  - stormwater management: weed fabric, topsoil and reseeding of area under arrays

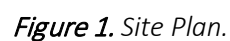
Project funding sources are listed in Table 1.

**Table 1.** Sources of Project funding. This is a shared meter with 5.6% residential consumption.

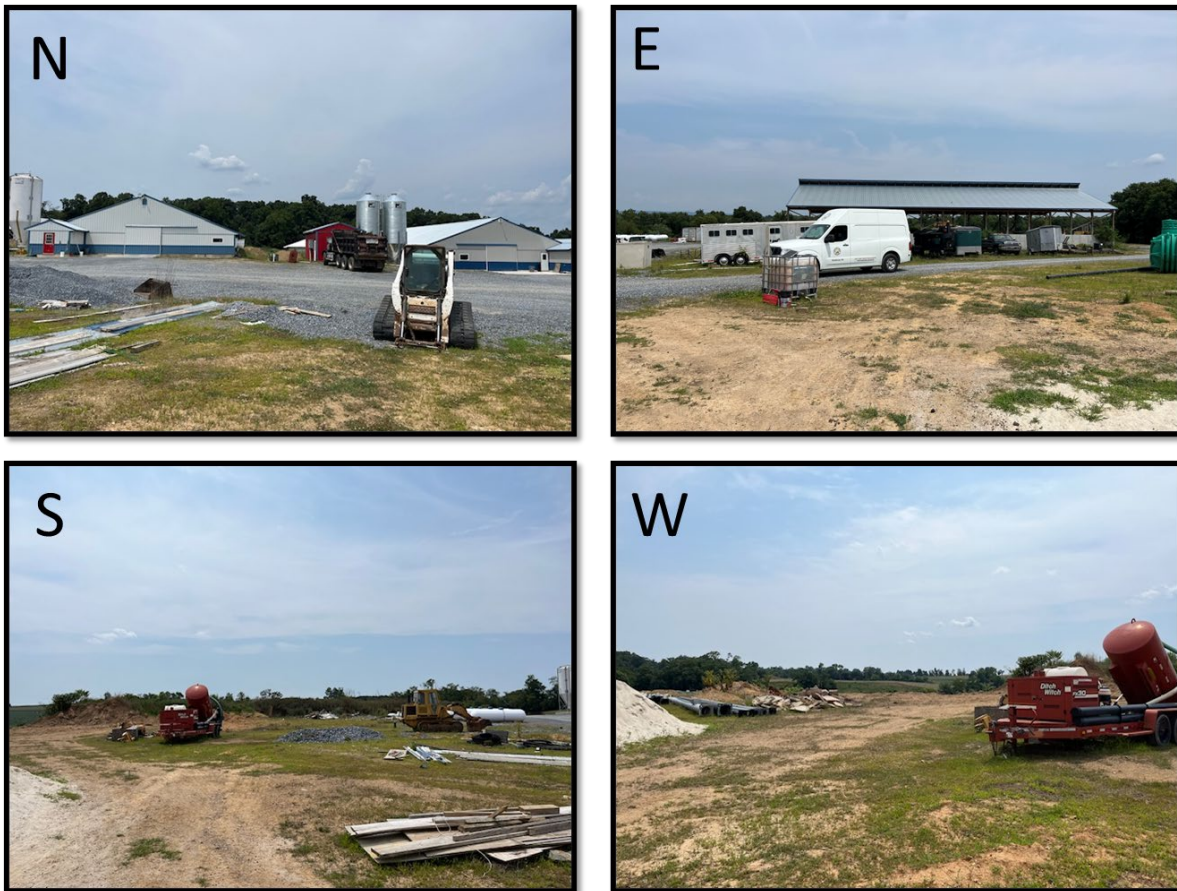
FUNDING TYPE	AMOUNT
Owner Equity	\$ 275,460
State Grants – none	\$ 0
Other Federal Funding – none	\$ 0
USDA REAP Grant	\$ 275,460
Total Project Cost	\$ 550,919

The site plan as provided by the Installer, Green Way Solar, is given in **Figure 1**.

<sup>2</sup> Note: only the areas of the pair of arrays have been included, not the 0.28-acre area between the arrays.



Photos of the site as taken in summer 2024 on the ground in all four cardinal directions are shown in *Figure 2*.



*Figure 2.* Site photos – top left looks north, top right looks east, bottom left looks west, and bottom right looks south.



An aerial photo of the proposed system superimposed over a Google Maps image is provided in *Figure 3*.

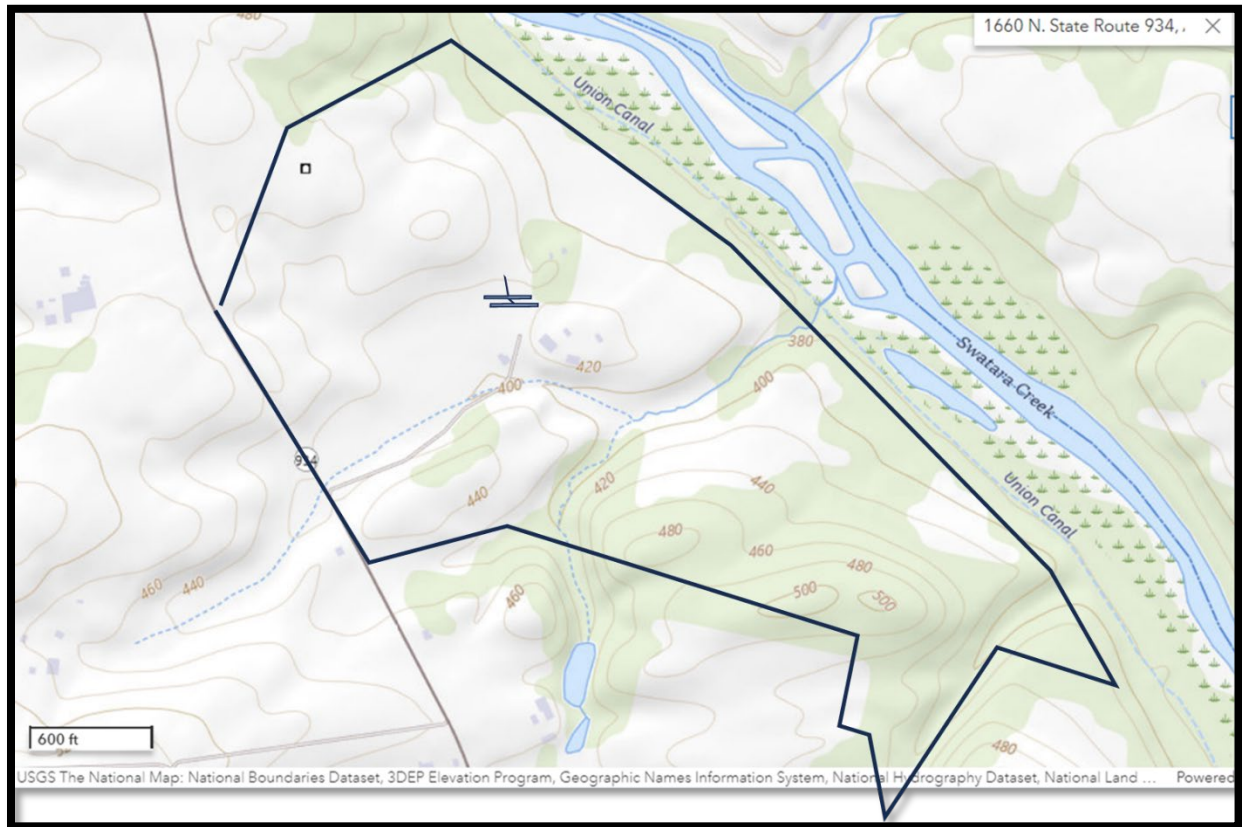


*Figure 3. Aerial photo with proposed arrays superimposed over aerial photo. Project boundary is edge of the semi-transparent shape drawn over the four arrays and the trenching that extends to the existing utility building.*

Note that in *Figure 3* the four arrays face south whereas the existing broiler houses have gabled roofs that face east-west. In addition to minimizing the distance between the system and the meter to keep voltage drops low, the more compact ground-mount design reduces the total number of solar modules by approximately 40%.

Furthermore, a ground-mount system makes service and maintenance more feasible than a roof mount. Please also see soils discussions in 2.1 Land Use (Support Documents in Attachment B), page 13.

An image of the proposed system superimposed over its corresponding USGS map<sup>3</sup> is given in **Figure 4**.



**Figure 4.** The proposed system is a set of four ground-mount arrays depicted near the top center of the property boundary as superimposed over the USGS topographic map. The approximate elevation of the system is 420'.

<sup>3</sup> <https://www.usgs.gov/programs/national-geospatial-program/topographic-maps>

Existing Modern Building - Point of Utility Interconnection

Trenches between Point of Utility Interconnection Building and Solar Arrays will be ~8" wide by 36" deep and contain PVC conduits.

Existing terrain is +/- 10 degrees N-S & E-W. No leveling of existing ground is planned.

133'

61'

117'

53'

61'

138'

[illegible]

---

Page | 11

## 1.2 Purpose and Need of Project

The intended purpose of the proposed solar photovoltaic system is to generate electrical energy under a utility net-metering interconnection agreement in order to replace energy that would otherwise be procured from the utility company for ZBMGF's agricultural business operations.

The utility company serving the site is Met-Ed. The proposed solar PV system is expected to generate approximately 372,470 kWh per year, which will offset the applicant's operation energy usage of 271,750 kWh per year and produce an excess of 55,720 kWh per year to be sold back to the utility under the utility's net-metering agreement.<sup>4</sup>

This proposal satisfies the USDA REAP Program goal of increasing American energy independence by increasing the private-sector supply of renewable energy, and by decreasing the demand for finite carbon-based non-renewable primary energy, e.g. (Layton, 2008)<sup>5</sup> through the deployment of renewable energy improvements.

---

<sup>4</sup> Solar is on dedicated meter

<sup>5</sup> Layton (2008): [https://www.researchgate.net/publication/233231163\\_A\\_Comparison\\_of\\_Energy\\_Densities\\_of\\_Prevalent\\_Energy\\_Sources\\_in\\_Units\\_of\\_Joules\\_Per\\_Cubic\\_Meter](https://www.researchgate.net/publication/233231163_A_Comparison_of_Energy_Densities_of_Prevalent_Energy_Sources_in_Units_of_Joules_Per_Cubic_Meter)



## 2.0 LAND OWNERSHIP AND LAND USE

### 2.1 Land Use (Support Documents in Attachment A)

Land use, as it pertains to USDA programs is divided into 3 categories: general land use, important farmland and formally classified lands and is regulated under the Farmland Protection Policy Act (FPPA) 7 CFR Part 658 and USDA Departmental Regulation 9500-3. General land use activities are generally regulated at the local level through zoning ordinances, land use plans, etc. Important farmland is regulated through the Farmland Protection Policy Act (FPPA; 7 CFR part 658). Formally classified lands are areas that have been afforded special protection through legislative designations and are administered either by federal, state or local agencies, tribes or private parties.

The Project site is currently owned by Sheila and Nelson Ziegler, who are the sole owners of ZBMGF Inc. The site is private, zoned as agricultural, and falls under the jurisdiction of Lebanon County, PA. Approximately 50.3% of the property has been designated as important or prime farmland as the property features BeB, CmB and Ph prime soils as well as BkB, BkC, Ho, and WeB soils (*Table 2, Figure 24*— pg. 46). The solar array itself is to be constructed on a portion of the property designated as CmB, which is among the “prime” soil types. The CmB, Comly silt loam on 3 to 8 percent slope, comprises 19.6 acres, or 12.4% of the 158.1-acre property. The arrays thus cover 1.85% of the CmB soil of the property and 0.23% of the property. Please note that this soil is not “lost” or converted insofar as agrivoltaics remain an option since native grasses will be replanted under the arrays (see Graybill correspondence under 4.4 Invasive Species, pg. 39).

*Table 2. Informal LESA analysis featuring soil importance and solar coverage.<sup>6</sup>*

ZBMGF Inc. – Informal LESA Analysis – 0.362-acre system						
soil	acres	percent	RV	weight	important?	solar?
BeB	2.5	1.6%	88	1	prime	-
BkB	10.9	6.9%	88	6	important	-
BkC	17.1	10.8%	75	8	important	-
BkD	16.8	10.6%	68	7	not prime	-
BrB	0.9	0.6%	88	1	not prime	-
CmB	19.6	12.4%	88	11	prime	solar
Ho	16.5	10.4%	100	10	important	-
KnD	-	0.0%	68	0	not prime	-
Ph	8.3	5.2%	100	5	prime	-
WeB	4.7	3.0%	88	3	important	-
WeC	8.0	5.1%	75	4	not prime	-
WeD	39.6	25.0%	68	17	not prime	-
WeE	13.2	8.3%	55	5	not prime	-
	158.1	100.0%		78	50.3%	0.23%

The proposed project will disturb 0.362 acres of the property’s 158.1 total acres (0.23%). The limit of disturbance is needed to construct the four [4] of solar arrays, the trenches, and the utility interconnection point at the existing utility building. The utility line is already established. No temporary or permanent access road construction is

<sup>6</sup> [https://efotg.sc.egov.usda.gov/references/public/LA/Prime\\_and\\_other\\_Important\\_Farmland.html](https://efotg.sc.egov.usda.gov/references/public/LA/Prime_and_other_Important_Farmland.html)

necessary, and the existing gravel driveway will serve as the staging area. Ground piles and restoration of the grassy ground cover will be incorporated into and compliant with the guidelines of the recently completed stormwater management plan (13.3.4 Stormwater Permit, pg. 73).

The site condition as it appears today is given in **Figure 2** on page 8 above. As can be seen, while not currently grazed, the Zieglers are considering pursuing the emerging field of “agrivoltaics”<sup>7</sup> or “solar grazing” to maintain and utilize the grass vegetation under and around the arrays. The land use to the north, east and south of the solar arrays consists of barns, workshops, and residential structures, while the western side supports crops and grazing (**Figure 7**).



**Figure 7.** Aerial view of proposed site featuring existing buildings on west, north and east sides of array, with agricultural fields to the south. **Figure 21** on pg. 35 features an image of the Project where all four broiler houses are present.

Please see **Figure 18** on pg. 35 for details regarding Project ingress/egress, staging trenching, and grid connection. Additional trenching and electrical details may be found in **Figure 5** and **Figure 6** on pg. 11.

<sup>7</sup> <https://www.climatehubs.usda.gov/hubs/northeast/topic/agrivoltaics-coming-soon-farm-near-you>



### 2.1.1.1 Installer and Engineer have a strong track record of collaboration

Of the more than thirty [30] solar projects jointly completed by Green Way Solar and Human Powered Future PLLC, at least seven [7] of these projects have been constructed in Lebanon County (*Table 3*). Additional licensing and professional credentials may be found in Section 5 of the original Mar 31, 2024 proposal submission.

**Table 3.** Summary of Green Way Solar – Human Powered Future projects.<sup>8</sup>

#	date	project	county	township
1	6/1/2020	Balliet	Lebanon	East Hanover
2	8/2/2020	Hameloth	Lancaster	Mount Joy
3	12/16/2022	Stauffer	Dauphin	Swatara
4	3/23/2021	Alexander	Dauphine	West Hanover
5	11/26/2021	Arnold	Lancaster	North Lebanon
6	9/22/2021	Clinger	Lebanon	East Hanover
7	7/10/2022	Engle	Schuylkill	Reilly
8	6/14/2022	Melendez	Schuylkill	-
9	6/5/2022	Umbrell	Dauphin	West Hanover
10	9/24/2022	Lilley	Lebanon	North Lebanon
11	10/5/2022	Arnold batt	Lancaster	North Lebanon
12	10/14/2022	Snader	Lancaster	East Hempfield
13	10/26/2022	Hoffer	Lancaster	Mount Joy
14	10/26/2022	Brinker	Lehigh	Upper Milford
15	1/18/2023	Bicher	Lebanon	East Hanover
16	2/6/2023	Butz	Lancaster	Adamstown
17	3/30/2023	Smith	Lancaster	Brecknock
18	4/27/2023	Alexander	Dauphine	West Hanover
19	5/8/2023	Nagle	Schuylkill	Pine Grove
20	5/22/2023	Landis (REAP)	Lancaster	Clay
21	6/29/2023	Grillo	Lancaster	Rapho
22	9/21/2023	Smith	Schuylkill	Pine Grove
23	10/23/2023	Thompson	Berks	Greenwich
24	10/25/2023	Grillo	Lancaster	Rapho
25	12/21/2023	Mitchell (REAP)	Lancaster	East Cocalico
26	1/20/2024	Rich	Lancaster	Conoy
27	2/4/2024	Roth	Lebanon	N. Annville
28	3/27/2024	Brubaker (REAP)	Snyder	Chapman
29	3/27/2024	Ziegler (REAP)	Lebanon	North Annville
30	4/8/2024	Grillo (REAP)	Lancaster	East Donegal
31	4/8/2024	James	Berks	Centre
32	4/27/2024	Rousak	Chester	East Fallowfield
33	5/25/2024	Venigalla	Lancaster	Manheim
34	6/26/2024	Balliet Battery	Lebanon	East Hanover

### 2.1.2 Lebanon County Solar Guidelines

Lebanon County's 8-page Construction Code Permit guideline document, published in 2019<sup>9</sup> states for Solar Panel Systems that applicants must submit:

- *"Structural engineered analysis of existing roof or structure that supports solar system"*
- *Engineering of the proposed solar system*
- *All manufacturers installation instructions"*

Lebanon County also provides guidelines for ground-mounted solar:

*"Ground mounted solar panel installation requires a footer inspection performed by Lebanon County Planning Department. The second and third inspections are a rough and final electrical inspection performed by a third-party electrical inspection agency. The last inspection referred to as the final inspection is conducted when the installation is complete by Lebanon County Planning Department."*

As stated previously, voltage drop, total number of solar modules to be used, and azimuth of existing broiler houses warrants a ground-mount system in the proposed location in that the proposed location maximizes renewable energy harvest while minimizing environmental impact of this rural agricultural business.

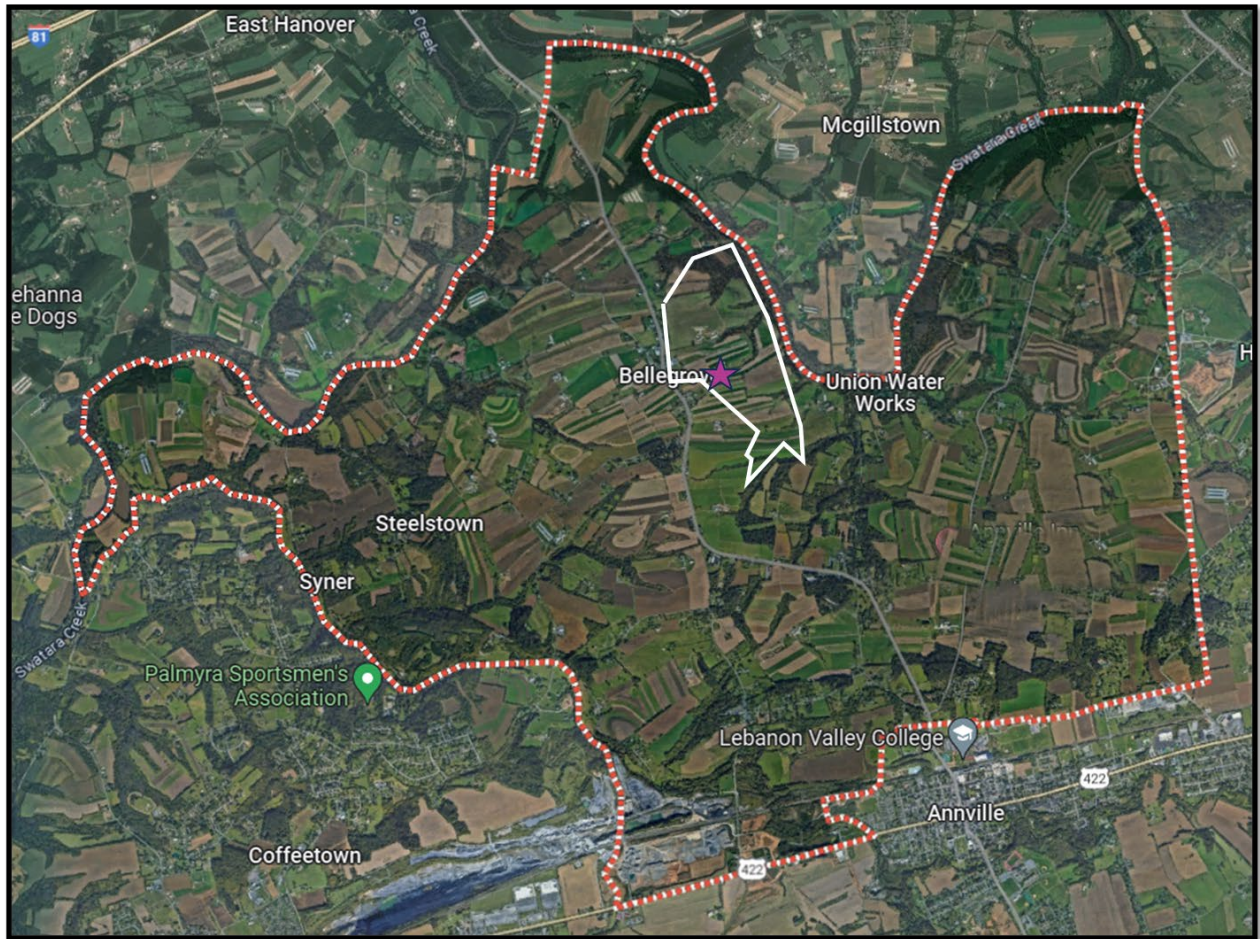
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<sup>8</sup> Will Stahlman and Bradley Layton have been acquainted since 2010 when Stahlman earned his associates degree under Layton in the University of Montana's Energy Technology Program and graduated magna cum laude.

<sup>9</sup> [https://www.lebanoncountypa.gov/getmedia/ba3686bc-797f-4da4-b716-847c6c94f2c3/Building\\_Code\\_info-v-3-6-2019.pdf](https://www.lebanoncountypa.gov/getmedia/ba3686bc-797f-4da4-b716-847c6c94f2c3/Building_Code_info-v-3-6-2019.pdf)

### 2.1.3 North Annville Solar Guidelines

The Project is proposed to be constructed in North Annville township's agricultural zoning district<sup>10</sup> (*Figure 8*).



**Figure 8.** The Project, marked with a star, is north of Annville in the Annville Township agricultural zoning district.

The township of North Annville maintains renewable energy regulations.<sup>11</sup> Key points are summarized as follows:

*"§27-533.3 Solar, Wind and Alternate Energy Standards. [Ord. 652, 12/5/2016]*

- 1. The use of solar, wind and alternate energy systems is encouraged within these regulations and permitted within any zoning district. Although the installation of such systems is not mandatory, where they are used, the following shall apply:*

*A. Active and passive solar systems, wind energy systems and similar alternate energy systems, including customary energy storage accessories, shall be permitted for the production, collection, movement, distribution or storage of heated water, air or other medium which is intended for conveyance to a principal or accessory building. Systems may include the following, subject to the requirements contained herein:*

- (1) Solar panels with a combined glazing area of 65 square feet or less may be placed in any side or rear yard but shall not be closer than two feet from any property line.*

<sup>10</sup> <https://annvilletwp.com/wp-content/uploads/2020/06/Zoning-Map-Current.pdf>

<sup>11</sup> <https://ecode360.com/42286317#42287020>

(2) Solar panels with a combined glazing area in excess of 65 square feet; provided, that:

(a) Solar panels attached to a principal structure shall comply with the zoning setbacks prescribed for a principal structure in the applicable zoning district;

(b) Solar panels that are freestanding or attached to an accessory structure shall comply with the accessory structure requirements of this Chapter.”

The Project as proposed complies with North Annville Township’s 2021 solar ordinance.<sup>12</sup>

As mentioned previously, all seven [7] prior installations performed by Green Way Solar and engineered by Human Powered Future PLLC in Lebanon County have been approved. The requirements for Lebanon County regarding the inspection protocol for ground-mount, is thus routine. In this case, a ground-mount system is more economically feasible as the lifetime of the solar system is expected to be twenty-five [25] to thirty [30] years. Additionally, a roof installation on existing buildings with east-west facing rooftops would not only increase the requirement for the number of modules by 40%, but also result in a less efficient system due to voltage drop caused by the longer trenching to the inverters and utility service.

Regarding communications and approvals with County and Township AHJs, Green Way Solar has previously enjoyed success in Lebanon County as well as neighboring Lancaster County and we anticipate approval of this Project as well. The recently approved and completed Landis Worth the Wait Farm Project, a USDA-REAP-funded project completed by the Installer and Engineer as well as another recently approved USDA-REAP-funded project, “JSM Mitchell Solar,” in Reinholds also bode well for this Project’s success (Figure 9).<sup>13</sup>

**Figure 9.** Screenshot from Elizabeth Deornellas’ April 3, 2024 story regarding Worth the Wait Farm<sup>14</sup> by Green Way Solar<sup>15</sup> as well as a project in Reinholds where the recently approved Mitchell Project awaits formal issuance.

Nine Lancaster County farms and businesses will receive \$1 million total in federal grants to purchase solar power systems.

The Lancaster County grants are among 17 awarded to rural Pennsylvania farms and businesses through the U.S. Department of Agriculture’s Rural Energy for America Program, a program created through the Inflation Reduction Act.

Lancaster County grant recipients include:

- \$345,000 for LEPCO in East Donegal Township
- \$22,958 for Keith D. Frey’s poultry farm in Millersville
- \$29,525 for Lanco Mechanicals Inc., a plumbing and electrical services company in West Earl Township
- \$61,725 for Fire Line Equipment LLC, a firefighting and emergency equipment supplier in East Earl Township
- \$60,000 for Burkholder Capital LLC’s Adamstown Car Wash in Reinholds
- \$116,111 for Christian Landis’ Worth The Wait dairy and cattle farm in Stevens
- \$13,581 for Bowers & Lobeck Inc., a cabinetry and kitchen remodeler in Manor Township
- \$274,050 for the M5 Companies LLC real estate company in Manheim
- \$82,850 for the Twin Pine Ford Inc. car dealership in East Cocalico Township

“When we invest in technology that lowers operating costs for businesses, we’re investing in their long-term success,” U.S. Sen. Bob Casey, D-Pa., stated in a Wednesday press release. “This funding from the Inflation Reduction Act is not only ensuring the success of businesses in rural Pennsylvania, but also reducing harmful emissions and protecting our environment for our future generations.”

We thus anticipate continued collaboration with Lebanon County and North Annville Township on the Ziegler Project should it be approved and awarded by the USDA REAP.

<sup>12</sup> <https://nannvilletwp.com/wp-content/uploads/2021/11/Ordinance-No.-1-2021-Commercial-Solar-Use.pdf>

<sup>13</sup> Deornellas, April 3, 2024: [https://lancasteronline.com/news/local/1-million-in-federal-solar-grants-for-lancaster-county-farms-and-businesses/article\\_47c9fb96-f1fc-11ee-a8d6-17ed45a088fd.html](https://lancasteronline.com/news/local/1-million-in-federal-solar-grants-for-lancaster-county-farms-and-businesses/article_47c9fb96-f1fc-11ee-a8d6-17ed45a088fd.html)

<sup>14</sup> Worth the Wait Farm: <https://hoards.com/article-28969-worth-the-wait-farm-earns-top-district-honor---pennsylvania-farm-named-district-2-producer-of-the-year.html>

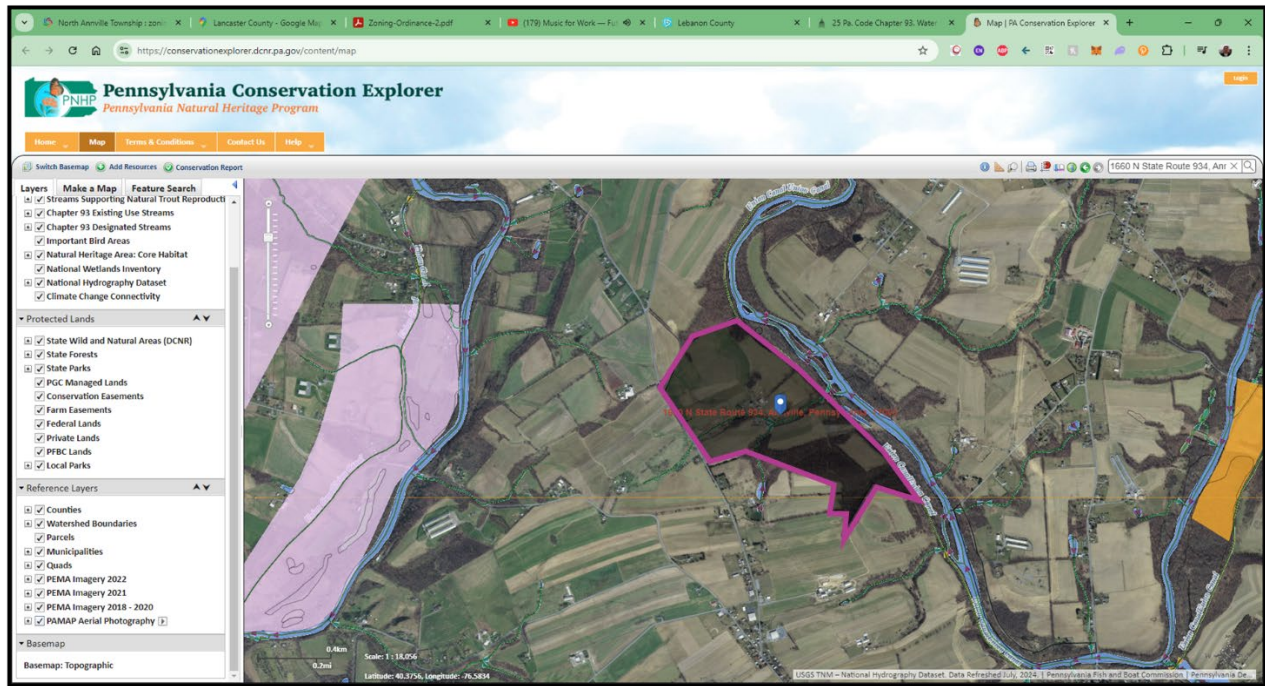
<sup>15</sup> Green Way Solar: <https://greenway-solar.com>



Regarding legacy requirements, please note that the PA Sunshine Program is no longer active, but that Green Way Solar remains NABCEP-certified.

## 2.2 Formally Classified Lands

By using the Lebanon County cadastral<sup>16</sup> in addition to the other resources cited below and, in the Appendices, I was able to determine that the property on which the Project is being proposed does not abut any Formally Classified Lands (*Figure 10*).



*Figure 10. PA Conservation Map Explorer results reveal the absence of any adjoining Formally Classified Lands. The pair of Chapter 93 Designated Streams<sup>17</sup> on the Property can be seen running along the eastern property line and westward through the center of the property.<sup>18</sup> The pink highlighted region west of the property is Core Habitat of a Natural Heritage Area. yellow-highlighted property east of the Project property is a farm easement.*

<sup>16</sup> Lebanon County cadastral: <https://www.arcgis.com/apps/webappviewer/index.html?id=dc37fec2f8044fc3a7f2898ed5d602ac>

<sup>17</sup> Chapter 93 Streams: <https://www.pacodeandbulletin.gov/Display/pacode?file=/secure/pacode/data/025/chapter93/chap93toc.html>

<sup>18</sup> PA DCNR Conservation Explorer: <http://conservationexplorer.dcnr.pa.gov/content/map>

A map of the Property from the Lebanon County cadastral (*Figure 11*) is consistent with these findings as well.

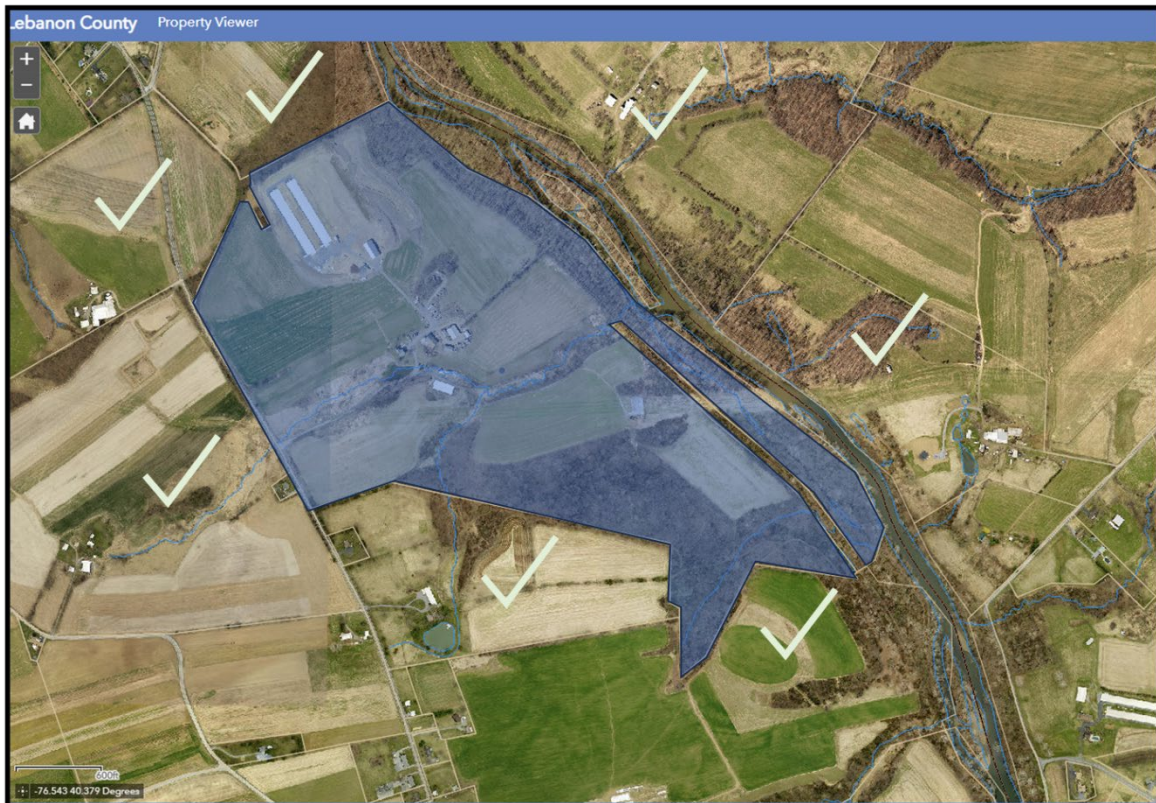


*Figure 11.* Ziegler property as seen via the Lebanon cadastral. Note that in this view only two of the four broiler houses are extant and that the Union Canal south of the small stream that cuts west off of the Swatara Creek is excluded from the property.



### 2.2.1 Proximity to Formally Classified Lands

In the preparation of the Environmental Information submission submitted to Rana Pfeil on March 31, 2024, I indicated that no Formally Classified Lands or waters will be affected (directly or indirectly) by the Project. I also included a summary of my prior correspondence and correspondence attempts with the appropriate land managing agency(ies) and tribes. Upon further review of this earlier result, I performed a search for Formally Classified Lands adjacent to the property, confirming that all seven [7] adjacent properties in this agriculturally zoned region of North Annville Township in Lebanon County, PA are residential or agricultural, (*Figure 12*), and not formally classified.



*Figure 12.* According to the Lebanon cadastral, none of the seven [7] adjacent properties, all of which are marked with a green checkmark, are residential or agricultural and not Formally Classified Lands.

Per my recent email exchanges with Noelle Michel Scientist II (CTR), on this Project, I also have included the classified lands sections from our Mar 31, 2024 submission, which was designated as 1.2.4.2 Q11 Historical Places (*Figure 25*) and, 1.2.4.10 Q18 Classified Land (*Figure 26*). These documents are included under [TAB B](#).

As confirmed by Sheila and Nelson Zeigler's accountant, Sadie Poitevien, the ZBMGF farm is not registered with the USDA Farm Service Agency's Conservation Reserve Program.

### 2.2.2 Tribal correspondence

Tribal correspondence is summarized in 3.2 HUD Tribal Correspondence, page 30. See Tab B. A third attempt at contacting tribal leaders regarding this project has resulted in no response. Please see *Table 4* in Section 3.2 HUD Tribal Correspondence on page 30 for further details.

### 2.2.3 Visual Impacts

This is discussed in 1.2.4.1 Q10 Historical Places as previously submitted in Environmental Information (*Figure 25*) and included as part of [Tab B](#).

### 2.2.4 Mitigation measures

The Installer and Engineer do not anticipate the need for any mitigation measures. However, if mitigation measures are identified during federal, state, or local review, recommended mitigation measures will be implemented by the Installer, Engineer, and Owners.

## 2.3 Socio-Economic and Environmental Justice

The installation of the solar panels will increase American energy independence by supplying renewable energy and decreasing the demand for energy through energy efficiency improvements.

Environmental justice is discussed in 1.2.4.13 Q29 EJ Screen, as submitted in Environmental Information and included under [Tab B](#) (*Figure 27*).

## 2.4 Intergovernmental Review

Intergovernmental review is not required for Pennsylvania as there is No Single-Point of Contact.

## 2.5 Environmental Site Assessment and Environmental Risk Management

The Project does not require a Phase I ESA as no collateral is taken for grant-only proposals.

No regulated, hazardous, or toxic materials are stored or have been previously released at the Project site per Environmental Info 13.14 TAB N – HUMAN HEALTH.

No above or below ground storage tanks are associated within the proposed Project or in the Project area per Environmental Info 13.14 TAB N – HUMAN HEALTH.

Environmental justice is discussed in 1.2.4.14 Q32 Non-Attainment as submitted in Environmental Information and included under 13.10 Tab J – AIR QUALITY.

The Project is not an EPA superfund site, RCRA site or priority clean-up site.

## 3.0 CULTURAL RESOURCES AND HISTORIC PROPERTIES

The terms “cultural resources” and “historic properties” are being used, respectively, in the context of NEPA and the National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 et seq) (NHPA).

While there is no legally accepted definition of the term “cultural resources” within the federal government, it is used widely to refer to historic, aesthetic, and cultural aspects of the human environment. Under NEPA, cultural resources are integral to the human environment including the human (social and cultural) and the natural and physical (e.g., the built environment or man-made structures) environment and the relationship of people to that environment.

Section 106 of the NHPA requires federal agencies to take into account the effects of their “undertakings” on historic properties that are within the proposal’s “area of potential effect” (APE) and to provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment on such undertakings. The regulations (36 CFR Part 800, Protection of Historic Properties) implementing Section 106, establish the process through which federal agencies meet this statutory requirement.

Notwithstanding the above statement, in most cases Agency actions will not be reviewed by the ACHP but rather by State Historic Preservation Officers (SHPO) and Tribal Historic Preservation Officers (THPOs) on and off tribal land.

The goal of the Section 106 process is to “identify historic properties potentially affected by the undertaking, assess its effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties.” The Section 106 review process, as demonstrated in the graphic (“NEPA and NHPA – A Handbook for Integrating NEPA and Section 106”, Council on Environmental Quality and Advisory Council on Historic Preservation, March 2013, page 8.) shown in RD Instruction 1970-C, Exhibit B page 35, which offers a structured identification and evaluation process that will contribute to identifying and assessing effects not only to historic properties but cultural resources as well.

### 3.1 PA-SHARE Correspondence

Consultation with the PA SHPO was initiated on August 10, 2024 through the PA-SHARES website under Project Number 2024PR03738<sup>19</sup> to determine if historic or archaeological resources would be affected if the Project is implemented. I received feedback on August 12 requesting additional historical aerial photos from 1930 to 1970 as well as a map labeling all existing buildings on the property for evaluation as to whether the farmstead may be eligible for inclusion in the National Register.

#### 3.1.1 PA-SHARE ER Project #2024PR03738.001 re historical farmstead letter

The letter from PA-SHARE regarding the potential that historical farmstead buildings exist on the Project location is included in 13.5.1 PA SHPO Consultation – Gardosik and McKeel, pg. 85 (*Figure 34*, pg. 86).

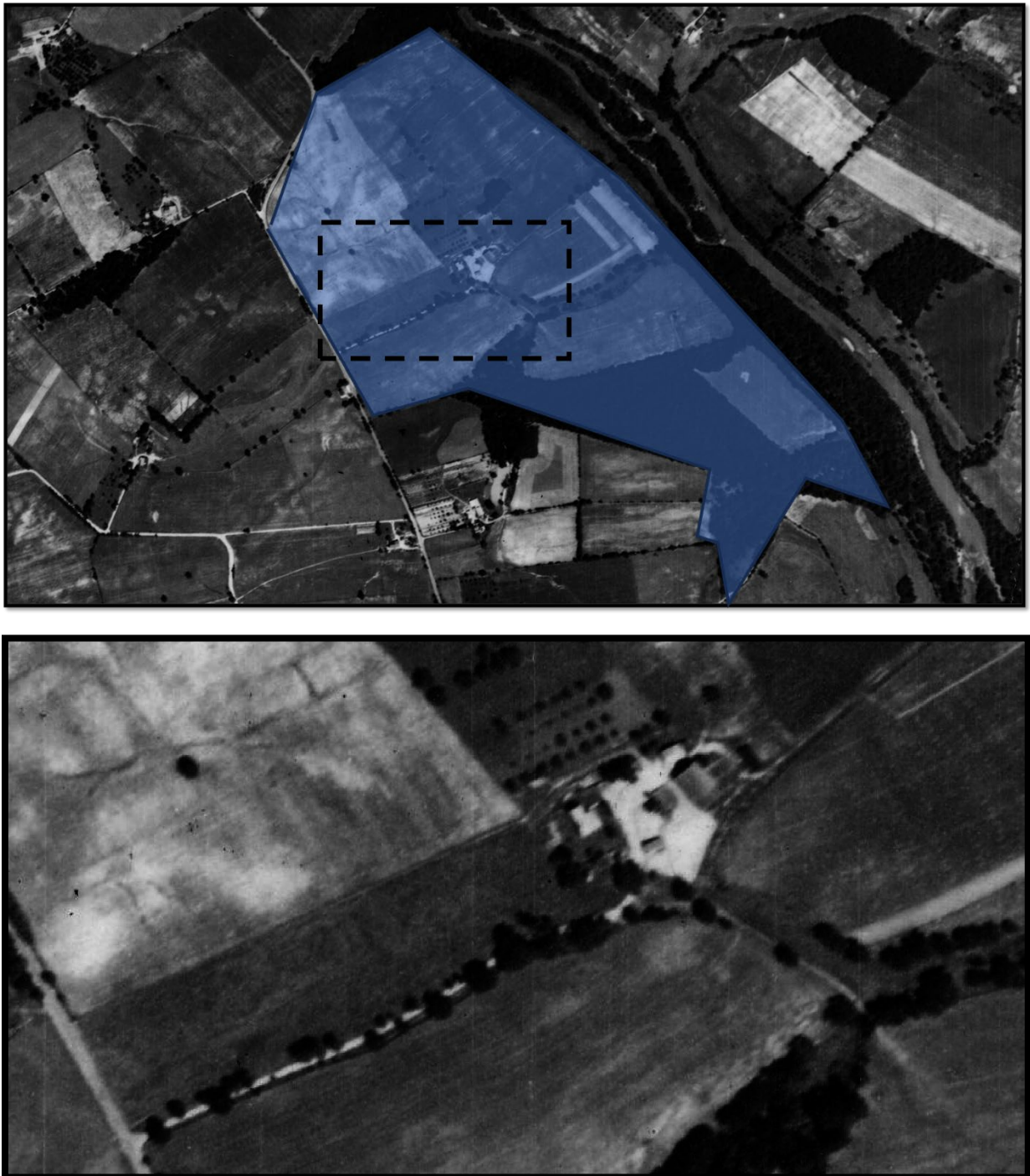
To comply with the request to document the presence of historical buildings on the Ziegler property, I visited the website where historical aerial images can be accessed.<sup>20</sup> By clicking on the 40s icons on the map, I was able to

<sup>19</sup> <https://share.phmc.pa.gov/pashare/projects/view/1697731>

<sup>20</sup> <https://datacommons.maps.arcgis.com/apps/View/index.html?appid=10af5f75f9f94f01866359ba398cb6a9>



access two files in particular, [lebanon\\_080337\\_ahn\\_25\\_68.tif](#)<sup>21</sup> and [lebanon\\_080337\\_ahn\\_25\\_69.tif](#)<sup>22</sup> that revealed the presence of buildings on the Farm Property from 1937 (*Figure 14*).



*Figure 13. Top – portion of lebanon...25\_68.tif image taken on August 3, 1937. The dashed rectangle denotes portion shown in bottom image. Bottom – inset from top image clearly shows a pentagon-shaped clearing with several structures at the end of a tree-lined lane and an orchard north of the clearing .*

### 3.1.2 Email from Noelle Michel, Scientist II (CTR) regarding SHPO, THPO, Land Conversion, Eco Diversity

In preparation of this Environmental Report, I corresponded with Noelle Michel, Scientist II (CTR). Noelle Michel's July 26<sup>th</sup> message primarily regarding SHPO and THPO, as well as Natural Diversity. This email is below, and I have made my best attempt to address each of the issues raised.

**From:** Michel, Noelle (CTR) - RD, MD <[Noelle.Michel@usda.gov](mailto:Noelle.Michel@usda.gov)>  
**Sent:** Friday, July 26, 2024 9:41 AM  
**To:** Bradley Layton <[bradley.layton@humanpoweredfuture.com](mailto:bradley.layton@humanpoweredfuture.com)>; [cpsservices@verizon.net](mailto:cpsservices@verizon.net); HPF Assistant <[assistant@humanpoweredfuture.com](mailto:assistant@humanpoweredfuture.com)>  
**Cc:** Pfeil, Rana - RD, PA <[rana.pfeil@usda.gov](mailto:rana.pfeil@usda.gov)>  
**Subject:** USDA REAP - Environmental Review - Zieglers Blue Mountain Game Farm

Hi Bradley,

I am performing the environmental review for the Ziegler's Blue Mountain Game Farm REAP grant application in Annville, PA. This project is classified as a NEPA Categorical Exclusion 1970.54 which requires an Environmental Report (ER). It looks like a lot of information has already been gathered for this project. Has an environmental report already been written or begun to be written? If not, Pennsylvania has developed an ER template which walks you through everything you need to gather and write about (attached to this e-mail).

Based on the provided documents, I have a few questions and general statements.

- Can you provide letters and/or correspondence with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officers (THPO) if they were contacted? SHPO consultation for PA happens through a portal called PA-SHARE. Typically, once I begin the environmental review, I will complete the Section 106 process with SHPO and THPOs. I can add a contact to the project so you can view SHPO status.
  - o To start Section 106 consultation with the SHPO and THPOs. Section 1.1 of the ER template lists project details needed for consultation.
    - When describing ground disturbance make sure to provide an aerial location and the length, width, and depth. Things like trenching, solar array racking posts, any leveling, etc.
    - Describing and diagraming on an aerial things like access roads, staging areas, fencing, etc.
    - Describing the point of interconnection with the grid. Is it inside or outside of a building? What is the purpose of this building? Age of building? Any additional trenching or ground disturbance?
- It was mentioned communication happened with the Historic District? Can you provide that documentation as well?
- There are five tribes with interests in Lebanon County, PA so THPO consultation will need to happen. Again, I will complete this process after I receive more project details and keep you informed of the results.

I do not believe we have to fill out the Farmland Conversion Impact Rating form (AD-1006). Although the project is on farmland of statewide importance and possibly prime farmland, the project is a small-scale solar array (that covers an area of an acre or less) and not subject to FPPA per 7 CFR 1970.557(b).

I would complete the Pennsylvania Natural Diversity Index earlier on. There is a low percentage of hydric soils on site and the bog turtle is listed on the Threatened and Endangered Species List. A bog turtle survey might be required.

<sup>21</sup> [https://www.pasda.psu.edu/pennpilot/era1940/lebanon\\_1940/lebanon\\_1940\\_photos\\_tif/lebanon\\_080337\\_ahn\\_25\\_68.tif](https://www.pasda.psu.edu/pennpilot/era1940/lebanon_1940/lebanon_1940_photos_tif/lebanon_080337_ahn_25_68.tif)

<sup>22</sup> [https://www.pasda.psu.edu/pennpilot/era1940/lebanon\\_1940/lebanon\\_1940\\_photos\\_tif/lebanon\\_080337\\_ahn\\_25\\_69.tif](https://www.pasda.psu.edu/pennpilot/era1940/lebanon_1940/lebanon_1940_photos_tif/lebanon_080337_ahn_25_69.tif)

Please let me know if you have any questions, I am here to provide help if I can.

Thank you,

**Noelle Michel**  
Scientist II (CTR)  
Federal Contractor for USDA Rural Development  
[Noelle.michel@usda.gov](mailto:Noelle.michel@usda.gov)

## 3.2 Historic Property Findings

In addition to the broiler houses, the Property has seven (7) buildings, two (2) of which appear to be potentially classified as historic (**Table 4**).

Supplemental information regarding PA SHPO correspondence under Project # 2024PR03738.001 may also be found in 13.6 TAB G – WATER QUALITY on pg. 127, especially **Figure 34 - Figure 37** which feature photos of the buildings as they appear today.

**Table 4.** ZBMGF building list.<sup>23</sup>

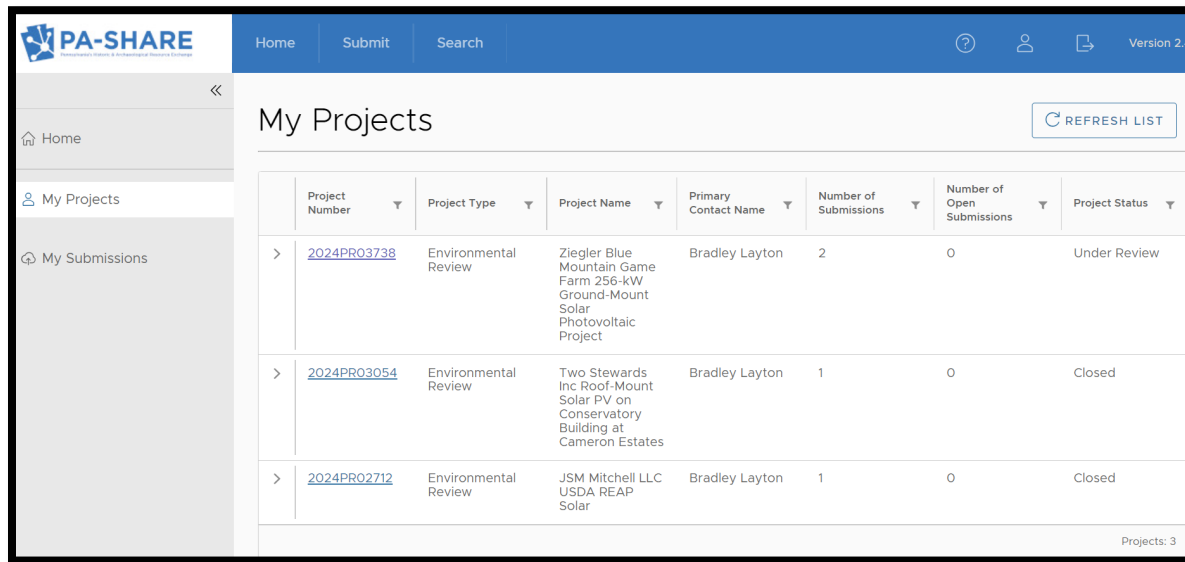
Building	Description	Est. Build	Source
A	Home	1830	Owner
B	Bank Barn	1830	Owner
C	Storage Shed	1970	Owner
D	Pole Barn	2011	Owner
E	Garage	2011	Owner
F	Hay Storage	2011	Owner
G	Implement	2018	Owner

Correspondence with the Owner via the Installer indicates that the Home and Bank Barn were built in the 1830s (**Figure 16**). Photographs of the buildings listed in **Table 4** and seen in **Figure 35 – Figure 38** were uploaded to PA-SHARE<sup>24</sup> on September 10, 2024 under Submission Token 9P72YWYV1BHY, Project Number 2024PRO3738 and acknowledged by John Gardosik of the Pennsylvania State Historic Preservation Office. As of October 13, 2024, this project is still under review (**Figure 15**).

<sup>23</sup> Does not include (recently built) broiler houses.

<sup>24</sup> PA-SHARE <https://share.phmc.pa.gov/pashare/landing> Username: bradley.layton\_31889





Project Number	Project Type	Project Name	Primary Contact Name	Number of Submissions	Number of Open Submissions	Project Status
<a href="#">2024PRO3738</a>	Environmental Review	Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Solar Photovoltaic Project	Bradley Layton	2	0	Under Review
<a href="#">2024PRO3054</a>	Environmental Review	Two Stewards Inc Roof-Mount Solar PV on Conservatory Building at Cameron Estates	Bradley Layton	1	0	Closed
<a href="#">2024PRO2712</a>	Environmental Review	JSM Mitchell LLC USDA REAP Solar	Bradley Layton	1	0	Closed

Projects: 3

Figure 14. Project 2024PRO3738, Ziegler Blue Mountain Game Farm, is under review as of 10/13/2024.



Figure 15. According to this arial image prepared by the Installer and as verified by the Owner, the Home and Bank Barn pictured on the upper right of the image were built in the 1830s.

The labeled image **Figure 16** is consistent with the images of **Figure 14** and **Figure 17** from 1937 as accessed via Penn Pilot.<sup>25</sup>

<sup>25</sup> <https://datacommons.maps.arcgis.com/apps/View/index.html?appid=10af5f75f9f94f01866359ba398cb6a9>



**Figure 16.** Zooming in further of the image of lebanon\_080337\_ahn\_25\_68.tif seen in **Figure 13** depicting the pentagon-shaped clearing, “Utah-shaped” farmhouse, and original “Bank Barn.”



**Figure 17.** Superposition of black and white photo from 1937 seen in **Figure 17** and the present-day color image seen in **Figure 16**. The majority of the driveway structures and some of the landscaping features, with the exception of the 1937 orchard remain consistent.

### 3.3 HUD Tribal Correspondence

HUD's Tribal Directory was used to identify Tribes that may be interested in the location of the proposal. The four [4] tribes listed using the online Tribal Directory Assessment Tool (TDAT) were the Delaware Nation, Oklahoma, the Delaware Tribe of Indians, the Eastern Shawnee Tribe of Oklahoma, and the Seneca-Cayuga Nation. Using the online tool, I downloaded the contact information for each tribe, and I emailed all nine [9] contacts (**Table 5**) on June 6, 2024 and again on Aug 10, 2024 with the following message:

*Dear [Chief Diebold],*  
*I hope this message finds you well.*  
*I'm working on plans for a solar photovoltaic installation at the above-referenced address and would like your input regarding the appropriateness of installing a renewable energy system at this site.*  
*Thank you in advance for your response.*  
HPF Assistant  
assistant@humanpoweredfuture.com  
(406) 203-2365  
[www.humanpoweredfuture.com](http://www.humanpoweredfuture.com)

**Table 5.** Summary of tribal contacts emailed on June 6, 2024 and Aug 10, 2024.

Tribal Name	Last Name	First Name	Title	Street Address	City	State	Zip Code	Work Phone
Delaware Nation, Oklahoma	Dotson	Deborah	President	31064 State Highway 281, Building 100	Anadarko	OK	73005	(405) 247-2448
Delaware Nation, Oklahoma	Lucas	Katelyn	THPO	P.O. Box 825	Anadarko	OK	73005	405-544-8115
Delaware Tribe of Indians	Bachor	Susan	THPO	5100 Tuxedo Blvd	Bartlesville	OK	64006	539.529.1671
Delaware Tribe of Indians	Heady	Larry	THPO	125 Dorry Lane	Grants Pass Oregon	OR	97527	262-825-7586
Delaware Tribe of Indians	Killscrew	Brad	Chief	5100 Tuxedo Blvd.	Bartlesville	OK	74006-2838	(918) 337-6590
Eastern Shawnee Tribe of Oklahoma	Nuckolls	Lora	THPO/Dire	70500 E 128 Rd.	Wyandotte	OK	74370	(918) 238-5151 Ext. 1840
Eastern Shawnee Tribe of Oklahoma	Wallace	Glenna	Chief	127 West Oneida	Seneca	MO	64865	(918) 666-2435
Seneca-Cayuga Nation	Diebold	Charles	Chief	23701 South 655 Road	Grove	OK	74344	(918) 787-5452
Seneca-Cayuga Nation	Tarrant	William	THPO	P.O. Box 453220	Grove	OK	74345	(918)-791-6061

One of the emails bounced. Specifically, [lheady@delawatribetribes.org](mailto:lheady@delawatribetribes.org).

I also got an automated response from Susan Bachor:

*Thank you for reaching out to Historic Preservation. We are currently in the field and will be answering emails in the evening. The office will fully reopen June 17th, 2024. If there is an emergency, please call 610-761-7452.*

#### 3.3.1 Delaware Nation, Oklahoma

I reached out to The Delaware Nation, Oklahoma on June 6<sup>th</sup> and again on August 11<sup>th</sup> with the email given above and have yet to receive a response as of the date of this submission. Should The Delaware Nation, Oklahoma respond, the Installer, the Owner, and the Engineer remain open to concerns or questions raised by The Delaware Nation, Oklahoma.

#### 3.3.2 Delaware Tribe of Indians

I reached out to The Delaware Tribe of Indians on June 6<sup>th</sup> and again on August 11<sup>th</sup> with the email given above and have yet to receive a response as of the date of this submission. Should The Delaware Tribe of Indians respond, the Installer, the Owner, and the Engineer remain open to concerns or questions raised by The Delaware Tribe of Indians.

#### 3.3.3 Eastern Shawnee Tribe of Oklahoma

I reached out to The Eastern Shawnee Tribe of Oklahoma on June 6<sup>th</sup> and again on August 11<sup>th</sup> with the email given above and have yet to receive a response as of the date of this submission. Should The Eastern Shawnee Tribe of

Oklahoma respond, the Installer, the Owner, and the Engineer remain open to concerns or questions raised by The Eastern Shawnee Tribe of Oklahoma.

#### 3.3.4 Seneca-Cayuga Nation

I reached out to The Seneca-Cayuga Nation on June 6<sup>th</sup> and again on August 11<sup>th</sup> with the email given above and have yet to receive a response as of the date of this submission. Should The Seneca-Cayuga Nation respond, the Installer, the Owner, and the Engineer remain open to concerns or questions raised by The Seneca-Cayuga Nation.

#### 3.3.5 Mitigation Measures

Since the proposed Project location is on privately owned rural agricultural property, our Team does not anticipate any tribal mitigation measures. However, we remain prepared to take such measures should they be deemed necessary over the course of this review.



## 4.0 BIOLOGICAL RESOURCES

### 4.1 Listed Threatened and Endangered Species

Under Section 7 of Endangered Species Act, federal agencies and applicants to federal programs must identify the presence of threatened, endangered, or candidate species in the areas affected by the proposal.

ESA consultation under Section 7 includes both “informal” and “formal” processes. The Services work with federal agencies and their applicants to emphasize the identification and informal resolution of potential species conflicts in the early stages of project planning. The purpose of the informal consultation process is to avoid adversely impacting these species and habitats. If the consultation process is not successful in avoiding adverse impacts to these species or habitats, the Agency and its applicant must engage in a “formal” consultation process. The latter process will require a more rigorous analytical and documentation process to determine the effects to species; identify reasonable and prudent alternatives and measures to minimize the impacts; and provide an administrative record of the effects and efforts toward resolution. Therefore, if it appears the proposal could affect (1) a federally-listed threatened or endangered species or its critical habitat or (2) a proposed threatened or endangered species or its proposed critical habitat, the applicant must contact the appropriate Agency environmental staff as soon as possible and the Agency will initiate discussions with the appropriate agencies.

The USFWS Information for Planning and Consultation (IPaC) and Pennsylvania Natural Diversity Index (PNDI) and websites are utilized to screen for Threatened, Endangered, or Candidate Species at or near the proposed project location. The IPaC is utilized to request an official species list, however, the list is limited to county level data at this time. The PNDI provides more site-specific data within a buffer area. PNDI identifies when further consultation is required or conservation or avoidance measures that can be implemented to reduce additional consultation.

#### 4.1.1 PNDI

Under PNDI account bradley.layton\_31889<sup>26</sup> I created project PNDI-820476 (Figure 19). The Pennsylvania Natural Diversity Index (PNDI) Screening Tool was then utilized to screen the Project area for threatened, endangered, or candidate species as well as critical habitats under the USFWS, PA Game Commission, PA Department of Conservation and Natural Resources, and PA Fish and Boat Commission jurisdictions. The results of the screening PNDI yielded the results given in Table 6.



Figure 18. Project number PNDI-820476.

I uploaded the Project proposal, site plan and an aerial view of the Project on 8/11/2024 and received confirmation that the payment has been received and that the receipt of the additional files are pending (Figure 18).



Figure 19. Project number PNDI-820476 in pending status on 8/11/24.

<sup>26</sup> <https://conservationexplorer.dcnr.pa.gov> (click on [PNDI Environmental Review link](#) near bottom of page, then to [map link](#), Then click all Environmental Review Species boxes, )

Within minutes, I received notification that the PNDI review was complete, and that further review was required from the PA FBC and the PA FWS ( *Table 6* ).

*Table 6. PNDI results from PNDI-820476.*<sup>27</sup>

Pennsylvania Department of Conservation and Natural Resources		Project Search ID: PNDI-820476
PNDI Receipt: project_receipt_ziegler_blue_mountain_gam_820476_FINAL_1.pdf		
<b>1. PROJECT INFORMATION</b>		
Project Name: <b>Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project</b>		
Date of Review: <b>8/11/2024 05:01:09 PM</b>		
Project Category: <b>Energy Storage, Production, and Transfer, Energy Production (generation), Solar Power Facility -- new or expansion</b>		
Project Area: <b>0.21 acres</b>		
County(s): <b>Lebanon</b>		
Township/Municipality(s): <b>NORTH ANNVILLE TOWNSHIP</b>		
ZIP Code:		
Quadrangle Name(s): <b>INDIANTOWN GAP</b>		
Watersheds HUC 8: <b>Lower Susquehanna-Swatara</b>		
Watersheds HUC 12: <b>Reeds Run-Swatara Creek</b>		
Decimal Degrees: <b>40.380136, -76.550479</b>		
Degrees Minutes Seconds: <b>40° 22' 48.4900" N, 76° 33' 1.7259" W</b>		
<b>2. SEARCH RESULTS</b>		
<b>Agency</b>	<b>Results</b>	<b>Response</b>
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	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.		

<sup>27</sup> On 10/21/24 I submitted an "updated receipt" request as the Biological Resource list may have been updated.



I received an email from Kathy Gipe regarding PNDI-820476 and responded with an image (**Figure 19**) depicting the Project location relative to nearby wetlands. See **Figure 20** for a zoomed-out view of the nearby wetlands that includes the property boundary.

-----Original Message-----

From: Gipe, Kathy <[c-kjipe@pa.gov](mailto:c-kjipe@pa.gov)>

Sent: Wednesday, August 14, 2024 11:33 AM

To: Bradley Layton <[bradley.layton@humanpoweredfuture.com](mailto:bradley.layton@humanpoweredfuture.com)>

Cc: HPF Assistant <[assistant@humanpoweredfuture.com](mailto:assistant@humanpoweredfuture.com)>

Subject: Re: [External] RE: PNDI Project : Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project

Thank you. For future reference, you can update the project polygon within an existing PNDI without having to start over.

It would still be helpful if you could overlay that project sketch plan on an aerial or something that shows the extent of wetlands and the pond on the property with respect to the project area.

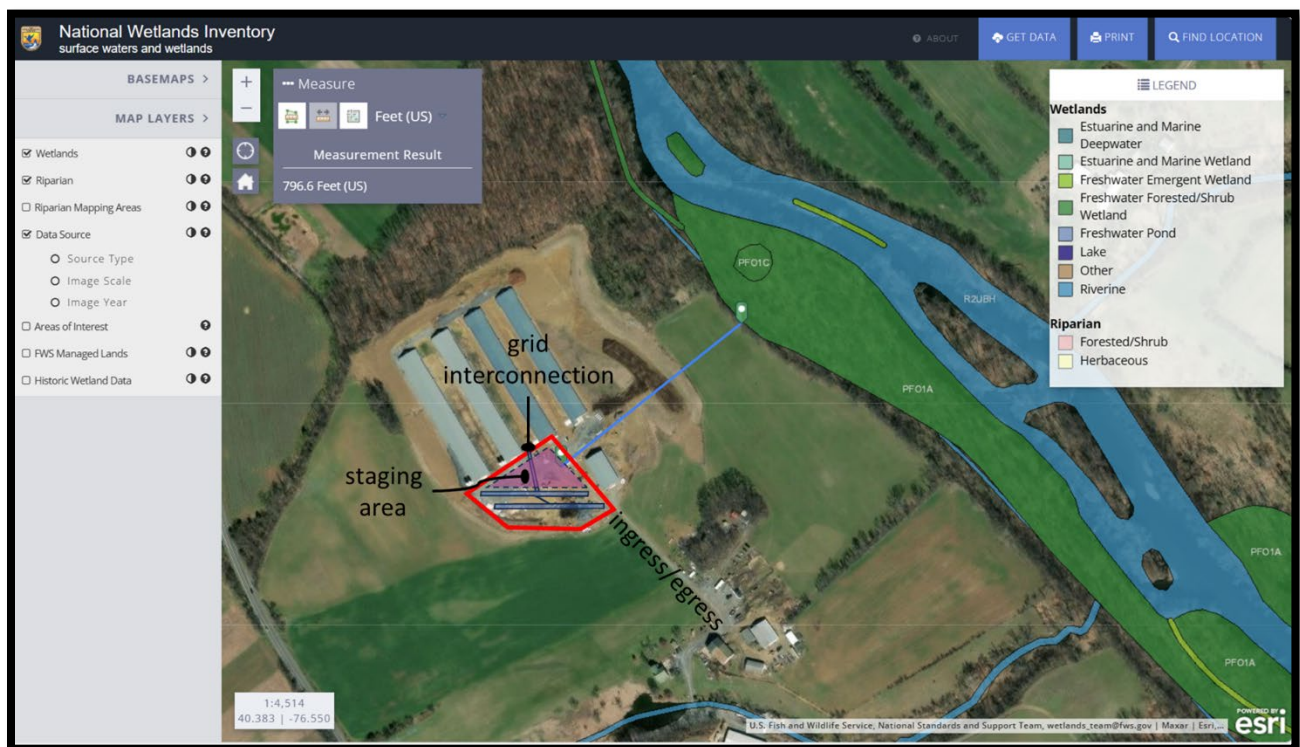
Sincerely,

--Kathy

Kathy Gipe | Herpetologist/Nongame Biologist Pennsylvania Fish and Boat Commission | Natural Diversity Section, Environmental Services

595 E Rolling Ridge Drive | Bellefonte, PA 16823

Office: 814.359.5186 | Cell: 814.470.5831 [fishandboat.com](mailto:fishandboat.com)



**Figure 20.** Image shared with Kathy Gipe referencing PNDI-820476 featuring Project location relative to relevant wetlands. This recent aerial image also features an overlay of trenching, staging areas, point of interconnection to the grid and Project ingress/egress per Noelle Michel's Aug 13, 2024 email request. The full six-page set of PNDI search results for PNDI-820476 is given in 13.5.1 PNDI Receipt on pg. 90, **Figure 40**.

#### 4.1.2 PA Fish and Boat Commission

As further review is required by the Pennsylvania Fish and Boad Commission, I emailed the drawing sets, Project Description, site plans and site photos to the PAFBC at [RA-FBPACENOTIFY@pa.gov](mailto:RA-FBPACENOTIFY@pa.gov) and await their reply.

#### 4.1.3 US Fish and Wildlife Service

As further review is required by the US Fish and Wildlife Service, I emailed the drawing sets, Project Description, site plans and site photos to the USFWS at [IR1\\_ESPenn@fws.gov](mailto:IR1_ESPenn@fws.gov) and await their reply.

#### 4.1.4 FWS via IPaC

Consultation with the U.S. Fish and Wildlife Service (USFWS) was conducted utilizing the Information for IPaC website<sup>28</sup> on August 11, 2024. An official species list was requested and received for assistance in the evaluation of potential impacts of this project to threatened, endangered, or candidate species as well as critical habitats.

The IPaC identified this list of species which are being considered under Section 7 of the Endangered Species Act for this proposal ([Table 7](#)). Additionally, the Bald Eagle and the Golden Eagle were listed. Several other birds were listed as well, including the Black-billed Cuckoo, Black-capped Chickadee, Bobolink, Canada Warbler, Cerulean Warbler, Chimney Swift, Chuck-will's-widow, Eastern Whip-poor-will, Golden-winged Warbler, Kentucky Warbler, Northern Saw-whet Owl, Prairie Warbler, Prothonotary Warbler, Red-headed Woodpecker, Rusty Blackbird, and Wood Thrush. Please see the Probability of Presence summary under TAB F. The resulting fifteen-page IPaC report was generated under Project code FWS 2024-0128788 and is given under TAB F – BIOLOGICAL RESOURCES, Section 13.6.2 USFWS Species List, page 96 and [Figure 41](#).

[Table 7](#). List of species with potential critical habitat in the Action Area under Project code PNDI-820476 and FWS 2024-0128788. LT-listed as threatened, PE-proposed endangered, E-endangered, C-candidate

Scientific Name	Common Name	Federal Status	State Status	Critical Habitat Designated	Type
<i>Glyptemys muhlenbergii</i>	Bog Turtle	LT	PE	No	Reptile
<i>Perimyotis subflavus</i>	Tricolored Bat	LT	PE	No	Mammal
<i>Myotis sodalis</i>	Indiana Bat	LE	E	No	Mammal
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	E	E	No	Mammal
<i>Danaus plexippus</i>	Monarch Butterfly	C	C	No	Insect
<i>Argynnis idalia idalia</i>	Eastern Regal Fritillary	PE	PE	No	Insect

#### 4.1.5 Vegetation Removal

We estimate that the only vegetation clearing required for the proposal and right-of-way, is that of the trenching described and illustrated in [Figure 3](#) and [Figure 4](#). As seen in [Figure 2](#), no tree removal is necessary. In areas deemed necessary, weed block fabric may be installed and native grasses restored for planned “solar grazing” practices. See correspondence with Jeff Graybill.

<sup>28</sup> <https://ipac.ecosphere.fws.gov/user/login>

While a pair of Chapter 93 designated streams are on the Property, these are not near and are not expected to be affected by the Project.

In conclusion, the Project does not appear to affect the any special areas of concern such as riparian zones, wetlands, forested tracts such as bottomland hardwoods or old growth that may be afforded special protection.

There are no mitigation or consultation letters from PNDI to include based on our website-generated results.

## 4.2 Migratory Bird Treaty Act

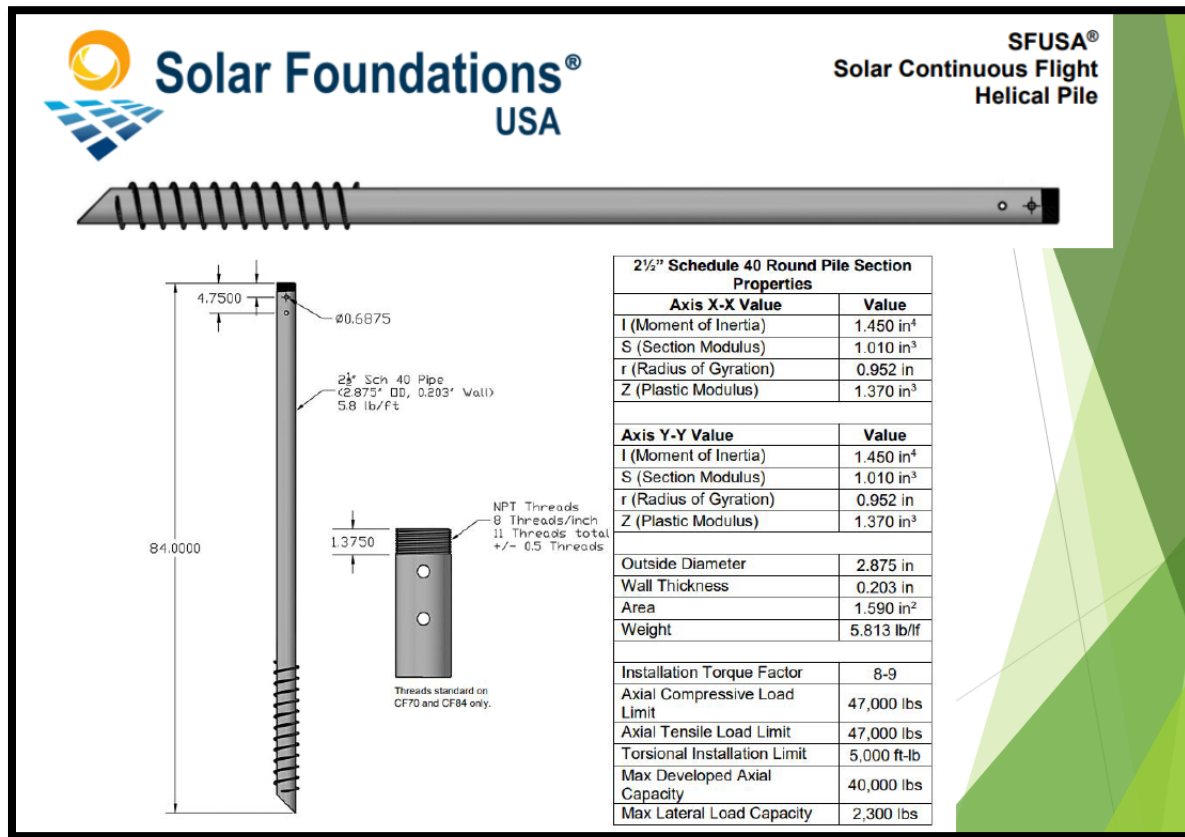
The Migratory Bird Treaty Act (MBTA) implements four separate treaties (or conventions), between the United States and Great Britain (on behalf of Canada) (1916), Mexico (1936) and Japan (1972), and the former Soviet Union (1978). The Act, and the treaties it implements, focused on regulating the “taking” of migratory birds, and introduced the concept of “take” to federal law. Take (defined at 50 CFR 10.12 as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt” any of the foregoing) can be intentional or unintentional, and occur through several means.

The MBTA is a strict liability law, thus forbidding the taking of even one migratory bird. Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* (January 10, 2001), directs executive departments and Federal agencies “to take certain actions to further implement the Act.” Although lending or funding actions (i.e., by federal agencies) are not subject to E.O., applicant actions remain subject to the Act itself. This means that the environmental review process and EA must reflect actions taken to avoid impacts to migratory birds, particularly proposals that present particular risks, such as wind energy facilities or electric transmission lines. The IPaC was reviewed to identify species that may be located at or near the project area.

The proposed site will not need site clearing activities involving tree and/or shrub removal, therefore no impacts to migratory birds is anticipated. Report 2024-0128788 generated on August 11, 2024 is also included in 13.6.2 USFWS Species List on page 96.

The Conservation Planning Report from DCNR’s Conservation Explorer and the Audubon GIS tool indicate that the site is within ten to fifteen miles of three [3] Important Bird Areas: Middle Creek Wildlife Management Area #910, Blue Marsh Lake #911, and Hay Creek – French Creek Forest Block #914. However, the Project is not on an IBA. Please see 13.6.6 Important Bird Area Map, on page 124 for further details.

Since the Project is being sited in a location that is not subject to runoff, due to the limited ground disturbance imposed by the piers to be used, sedimentation is not anticipated. No “ground clearing” per se is planned since the Project will employ ground screws, sometimes also referred to as helical piles (*Figure 22*). As seen in 5.0 Wetlands, the Project site is well away from stream or river flow impedence, and does not involve forest fragmentation, or increased human activity due to increased access to the Project area. We have thus paid particular attention to the proposal’s components or activities that may present a heightened risk to migratory birds and were unable to identify any significant risks. However, if during review, risks are identified our team remains committed to mitigating such risks.



**Figure 21.** The ground screws selected for the Project do not require ground clearing, and minimal ground disturbance.

#### 4.2.1 Mitigation Measures

1. To comply with the spirit and letter of the MBTA, site work will be completed between November 15 and March 31. The Applicant will maintain contact with and consult directly with USFWS and state wildlife agencies for locality-specific data on migratory birds and their nesting season. The Applicant will also welcome USFWS personnel to conduct a site survey at the discretion of the USFWS.
2. The Applicant will implement FWS Nationwide Standard Conservation Measures to employ at the Project's development site with the goal of reducing impacts to birds and their habitats. These measures are grouped into three categories: General, Habitat Protection, and Stressor Management. These measures are updated from time to time and are available at <https://www.fws.gov/media/nationwide-standard-conservation-measures>.

### 4.3 Bald and Golden Eagle Protection Act

The Bald or Golden Eagle Protection Act of 1940, as amended, prohibits anyone without a permit issued by the USFWS from "taking" bald or golden eagles, including their parts, nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle... [or golden eagle], alive or dead, or any part, nest, or egg thereof."

The Act defines 'take' as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

Potential impacts to bald or golden eagles. These impacts may result from the proximity of proposal activities to these species' nests, thus disturbing or interfering with their normal breeding, feeding, or sheltering habits and causing injury, death, or nest abandonment; and

According to the PA Game Commission website, the eastern golden eagle is closely linked to the Appalachian Mountains where it travels the mountain ridgelines during southbound and northbound migrations and spends the winter on the steep forested ridges of the central and southern Appalachians, primarily in Virginia and West Virginia. Pennsylvania hosts its share of migrating and wintering golden eagles, mainly in the Ridge and Valley Province between the Allegheny Front and the Kittatinny Ridge (aka Blue Mountain). Golden eagles do not breed in Pennsylvania; however, some occasionally winter in Pennsylvania in rugged, remote forest terrain, typically nesting on cliffs. The golden eagle is rare in the Northeast. A small population exists in eastern North America. This geographically isolated population breeds in northeastern Canada in the northern forests of Quebec, Labrador and northern Ontario. Golden eagles prefer nesting on cliffs or large trees in forested areas, however, according to the PA Game Commission, there are no recorded nesting pairs in Pennsylvania. Golden eagles are known to migrate through Pennsylvania to their breeding grounds in the north. Compliance with the USFWS Nationwide Standard Conservation Measures for Migratory Birds should be implemented to reduce the likelihood of impacts during their migration in the spring and fall.

The USFWS PA Bald Eagle Nest Locations and Buffer Zones are incorporated in the PNDI and is used to identify any known Bald Eagle Nest locations. As seen in PNDI Receipt 816289 and as summarized in **Table 5** on page 34 above, the **four** entities named in the Pennsylvania Natural Diversity Inventory report all indicated "No Known Impact" and "No Further Review Required." However, compliance with the USFWS Nationwide Standard Conservation Measures for Migratory Birds will be implemented to reduce the likelihood of impacts during their migration in the spring and fall. Please see Migratory Bird Section 4.2 of this report for Mitigation Measures.

#### 4.4 Invasive Species

Executive Order 13112, *Invasive Species* (February 3, 1999), requires federal agencies to prevent the introduction of invasive species, provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species cause. In addition, each federal agency to the extent practicable and permitted by law is required to identify its actions that may affect the status of invasive species, use relevant programs and authorities subject to the availability of appropriations, and within Administration budgetary limits and with regard to the Agency to:

- Prevent the introduction of invasive species;
- Detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner;
- Monitor invasive species populations accurately and reliably; and
- Provide for restoration of native species and habitat conditions in ecosystems that have been invaded.

In addition, federal agencies are directed to not authorize, fund, or carry out actions that they believe are likely to cause or promote the introduction or spread of invasive species, unless the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species and that all feasible and prudent measures to minimize the risk of harm will be taken in conjunction with its actions.

The proposed site was evaluated to determine how the Project may impact invasive species on the site by contacting Jeffrey Graybill, MS CCA, Agronomy Educator of the PennState Extension . Mr. Graybill's site visit is summarized in his email response below. Graybill advised:

*To: W. Stahlman, Bradley Layton, et. al., From: Jeff Graybill, Penn State Agronomy Educator, Lancaster Co, Office*

*Tuesday September 3<sup>rd</sup>, 2024, I walked the proposed solar site with Mr. Stahlman, Mr. Ziegler and an associate. We also reviewed a copy of the PA noxious weed list, and which species are of most concern.*



In summary, the project occupies a small area which has been used as a pasture/ storage area with machinery, mechanical supplies, and other equipment on the site. After a thorough examination, no PA Dept. of Ag. invasive species were found. Weeds which were identified and common to the area included ragweed, foxtail, pokeweed, PA smartweed, and lambsquarters. One weed of note was Maretail (*Conyza canadensis*) which is not on the PA noxious weed list but is now commonly found in Central PA due to the fact that most populations are resistant to the herbicide glyphosate (Roundup). Native grasses and broadleaves included fescue and bluegrass along with white clover.

Going forward after installation, management of this area could include mowing several times a year and/or grazing with sheep or goats. The farm itself is not organically certified but is however farmed organically. Thus, if needed, herbicides could be used in this area as a secondary method of weed management.

Finally, I would not expect this site be any more or less prone to noxious or invasive species than any of the surrounding fields or woodlands.

Sincerely,

Jeff

Jeffrey S. Graybill, MS

Agronomy Educator, Penn State Extension in Lancaster County

1383 Arcadia Road

Lancaster, PA 17601

717-394-6851

C: 717-615-2324



**PennState Extension**

[extension.psu.edu](https://extension.psu.edu)

Dear Jeff Graybill,

I'm writing on behalf of a USDA REAP client I am preparing an environmental report for.

My question for you is in regard to assisting me in answering the questions below.

1. Review PA's State Listing of Invasive Species

([https://www.agriculture.pa.gov/Plants\\_Land\\_Water/PlantIndustry/GISC/Pages/Invasive-Species-in-Pennsylvania.aspx](https://www.agriculture.pa.gov/Plants_Land_Water/PlantIndustry/GISC/Pages/Invasive-Species-in-Pennsylvania.aspx)) and consult with local Penn State Extension Office to determine if there are invasive species of concern within the project area. <https://extension.psu.edu/insects-pests-and-diseases>

2. If invasive species are present, discuss how these species will be eradicated.

3. Discuss the likelihood of the proposal introducing, spreading, or contributing to the continued existence of noxious weeds or non-native species in the proposal's area.

4. Discuss using native species and site stabilization and practices for prevention of introducing invasive species. Refer to above listed websites for controls and other best management practices.

5. The proposed site was evaluated to determine if any invasive species are present on the site by [Identify how presence or absence of species was determine and any consultation conducted with Penn State Extension].

6. Discuss the likelihood of the proposal introducing, spreading, or contributing to the continued existence of noxious weeds or non-native species in the proposal's area.

7. Discuss using native species and site stabilization and practices for prevention of introducing invasive species.

I've attached a few photos of the proposed site to see if we may have issues already and how to begin mitigation.

Thank you!

-Bradley Layton

As this was not one of the primary issues raised by Noell Michel (pg. 25), we will minimize ground disturbance and forgo the site visit for the time being.

Based on Will Stahlman's on-the-ground inspection of the proposed site (*Figure 2*), the grasses appear to remain consistent with the native mix originally purchased locally and planted to support grazing and hay production. Once the Project has entered the 30-day performance period, the portions of the ground that have been disturbed by construction will be monitored for the invasive species named by Jeffrey Graybill.

Since the ground-mount strategy is one of ground screws (*Figure 22*), we assess that the likelihood of the Project introducing, spreading, or contributing to the continued existence of noxious weeds or non-native species in the Project area is minimal versus a project where major sod disturbance is a factor. During trenching, every effort will be taken to maintain the sod, by first cutting the sod then replacing it once trenching is completed.<sup>29</sup>

Since the site already contains some invasive species such as smooth crabgrass *Digitaria ischaemum* and native species such as little bluestem, etc.,<sup>30</sup> any bare spots will be reseeded with the same seed stock that was originally deployed. The site is relatively level, so stabilization is not anticipated to be an issue. Regarding introduction of invasive species, all equipment brought on site will be thoroughly cleaned prior to arrival on site.

#### 4.4.1 Mitigation Measures

1. Contract documents will ensure that any contractors transporting goods, equipment and vehicles from Spotted Lantern Fly quarantine areas are permitted and adhere to the Spotted Lantern Fly quarantine requirements.
2. Best practices will be utilized to reduce the introduction of invasive species such as implementing a vegetative maintenance/landscape plan for monitoring and eliminating invasive species, using certified-weed free seed mixes and native species to revegetate construction areas and landscaping, and cleaning construction vehicles.

## 5.0 WETLANDS

Federal Agencies are required to avoid wherever possible adverse impacts to wetlands, minimize wetlands destruction and preserve the values of wetlands and to avoid to the extent possible the long- and short-term adverse impacts associated with destruction or modification of wetlands and avoid direct and indirect support of new construction in wetlands wherever there is a practicable alternative under Executive Order 11990 Protection of Wetlands 1977.

Under USDA's Land Use Policy, Department Regulation 9500-3, the Agency is responsible for assuring that Agency programs discourage the unwarranted alteration of wetlands or the unwarranted expansion of the peripheral boundaries of existing settlements. Section 363 of the Consolidated Farm and Rural Development Act (7 U.S.C. 2006e) 1990, known as the CON Act, prohibits the use of loan funds for certain purposes. Under the CON Act the Secretary of Agriculture shall not approve any loan under this title to drain, dredge, fill, or level or otherwise manipulate a wetland, or to engage in any activity that results in impairing or reducing the flow, circulation, or reach of water, except in the case of activity related to the maintenance of previously converted wetlands, or in the case of such activity that is already commenced prior to the enactment of this section. The Agency shall not assist in actions that would convert these lands to other uses unless there is a demonstrated, significant need for the project or there are no practicable alternative actions or sites that would avoid conversion, or if conversion is unavoidable, reduce the number of acres to be converted or encroached upon directly or indirectly. The Agency is prohibited from directly funding wetland impact.

<sup>29</sup> <https://www.aconcordcarpenter.com/trenching-your-lawn-without-damage.html>

<sup>30</sup> <https://www.paenflowered.org/AdvancedPlantSearch-grassessedges>

I reviewed both the NRCS Web Soil Survey and the US FWS National Wetland Inventory<sup>31,32</sup> to determine if hydric or partially hydric soils are present in or directly adjacent to the proposed site or if an NWI wetland is present in or directly adjacent to the proposed site. The NWI map is shown in *Figure 23*. See *Figure 21* for a close-up view of the Project site.



*Figure 22. US NWI map of the Project property and surrounding area. The stream on the eastern boundary of the property, the passing through the center of the property, as well as a small pond south of the Project property (near the bottom center of the image) are seen.*

Soils are 1-32% hydric however, this range is not considered by USDA to be an indicator for wetlands and the Project will not impact the resource.

<sup>31</sup> <https://www.fws.gov/program/national-wetlands-inventory/wetlands-mapper>

<sup>32</sup> <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper>

## 6.0 FLOODPLAINS

Federal Agencies are required to avoid to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative under Executive Order 11988 Floodplain Management 1977. The Agency shall not assist in actions that would convert these lands to other uses unless there is a demonstrated, significant need for the project or there are no practicable alternative actions or sites that would avoid conversion, or if conversion is unavoidable, reduce the number of acres to be converted or encroached upon directly or indirectly.

Under Agency policy, if the project meets the criteria for a Critical Action, the 500-year floodplain must be the floodplain of minimum concern, the project must use this floodplain evaluating the proposal. A Critical Action refers to an action for which even a slight chance of flooding is too great because such flooding might result in loss of life, injury to persons, or damage to property. The minimum floodplain of concern for Critical Actions is the 500-year floodplain, i.e., the critical action floodplain.

The proposed site was evaluated using the 100-year floodplain as the minimum floodplain of concern because no part of the proposal meets the Agency criteria for a Critical Action (*Figure 31*, pg. 72). Please also see 13.3 [TAB C – FLOODPLAINS](#), page 72.

## 7.0 COASTAL RESOURCES

### 7.1 Coastal Barrier Resources Act and Coastal Zone Management Act

The Coastal Barrier Resources Act (CBRA) of 1982 applies to undeveloped shoreline along the Atlantic, Gulf and Great Lakes, Puerto Rico, Florida Keys and U.S. Virgin Islands that Congress has designated for inclusion in the Coastal Barrier Resources System. The U.S. Department of Interior, through the U.S. Fish and Wildlife Service is the primary authority for the CBRA and maintain the official maps of the CBRA systems.

Coastal Zones are regulated under the Coast Zone Management Act (CZMA) of 1972. The Act provides for a national policy to preserve, protect and develop, and, where possible, to restore or enhance the resources of the Nation's coastal zone. "Coastal Zone" includes the coastal waters and the adjacent shore land "strongly influenced by each other and in proximity to the shorelines of the coastal states, and includes islands, transitional and inter-tidal areas, salt marshes, wetlands, and beaches." It includes the coastal waters and shore lands of the Great Lakes. The CZMA is administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal Resources Management (OCRM), which is part of the Department of Commerce. This duty has been delegated to the PA Department of Environmental Protection (DEP) Coastal Resources Management Program.

Pennsylvania has no **Coastal Barrier Resources System** communities per the U.S. Fish and Wildlife Service listing found on its website (<https://www.fws.gov/CBRA/Maps/Mapper.html>).

The project area is not located near any designated CBRS systems that are in neighboring states; therefore, no consistency determination is required and no reasonably foreseeable effects to coastal barriers resources are anticipated.

Pennsylvania has two designated **Coastal Zones Management Area (CZMA)** identified as the area along Lake Erie, within Erie County, which varies from 900 feet in urban areas to over 3 miles in more rural areas, and encompasses the floodplains of Lake Erie and tributary streams and coastal wetlands and along the Delaware River Estuary within Delaware, Philadelphia, and Bucks Counties, which extends inland to 660 feet in urbanized areas, to 3.5 miles in rural areas, and includes floodplains of the Delaware and Schuylkill Rivers and their tributaries to the upper limit of tidal and freshwater wetlands.

Review of DEP's Coastal Resources Management Program website (<http://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Coastal%20Resources%20Management%20Program/Pages/About-the-Program.aspx>) confirms that Lebanon County does not contain any designated Coastal Zone Management Areas.

The Project area is not within any designated CZMA; therefore, no consistency determination is required and no reasonably foreseeable effects to coastal uses or resources of the coastal zone are anticipated.

The proposed Project is not within Buck, Delaware, Erie, or Philadelphia counties and therefore will not be located within any designated CZMA, so no consistency determination is required.



## 8.0 IMPORTANT FARMLAND

Pursuant to section 1541(a) of the Farmland Protection Policy Act (FPPA or the Act) 7 U.S.C. 4202(a), as required by section 1541(b) of the Act, 7 U.S.C. 4202(b), federal agencies are (a) to use the criteria to identify and take into account the adverse effects of their programs on the preservation of farmland, (b) to consider alternative actions, as appropriate, that could lessen adverse effects, and (c) to ensure that their programs, to the extent practicable, are compatible with state and units of local government and private programs and policies to protect farmland. FPPA applies only to federal assistance and actions that would convert important farmland to nonagricultural uses. It does not authorize the Federal government in any way to regulate the use of private or nonfederal land or in any way affect the private property rights of owners of private land.

Under the FPPA, “Farmland” means prime or unique farmlands as defined in section 1540(c)(1) of the Act or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary to be farmland of statewide or local importance. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. “Farmland” does not include land already in or committed to urban development or water storage.

A review of the NRCS Web Soil Survey’s Farmland Rating Map indicates the proposed site does have prime farmland soils. However, the solar array is only 0.269-acres and according to 1970.557(b), “*small-scale solar arrays (that cover an area of an acre or less) are exempt from the FPPA.*” Therefore, no further evaluation was performed beyond the results given in **Figure 24** and **Table 2**. By using the Web Soil Survey tool<sup>33</sup> available from the USDA, I obtained a soil map (**Figure 24**).

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<sup>33</sup> <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>



**Figure 23.** Soils map shows that the project is to fall in a BuB (Bucks silt loam) soil zone. If advised it may be feasible to move the arrays to the RaB zone east of the buildings.

From **Figure 24** and **Table 2** – pg. 13 we see that just over half of the soil on the ZBMGF Inc property is classified as either important or prime. However, since the Project is less than one acre, the Project is exempt from the FPPA. As seen in **Figure 2** – pg. 8, the CmB soil is not currently under production, but after the completion of Project, it may actually receive less foot traffic and better shade and become a viable agrivoltaics location.

## 9.0 OTHER RESOURCES

### 9.1 Air Quality

Clean Air Act (CAA), 42 U.S.C §§ 7409, 7410, 7502-7514, 7571-7574, requires establishment of National Ambient Air Quality Standards (NAAQS) and the designation of areas based on achievement of these standards. In Section 176(c) of the CAA, federal agencies must demonstrate that their actions conform to these SIPs (or the Tribal or Federal equivalent of a SIP). The CAA also requires emission limits to be controlled and regulated through permit requirements set by states or tribes.

Developed under the Environmental Protection Agency's (EPA) Conformity Regulations ("Conformity Rule"), 40 CFR Part 93, the Conformity Rules ensure that actions taken by federal agencies do not interfere with a state's plan to meet national standards for air quality. A demonstration of conformity is required per Section 176(c) of the CAA. The EPA is required to promulgate NAAQS for certain classes of pollutants, called the "criteria pollutants" under the CAA. For each criteria pollutant, the EPA sets primary and secondary standards. Primary standards are intended to protect human health, including the health of sensitive populations such as children, the elderly, and people with pre-existing cardiovascular or respiratory disease. Secondary standards are intended to protect public welfare by preventing visibility impairment; protecting animals, crops and buildings, etc. Counties that currently do not meet these standards are listed as "Non-Attainment Areas" and have thresholds imposed upon them that limit the production of various pollutants in the area.

The EPA Greenbook<sup>34</sup> was reviewed to determine if the proposed site is within a county designated with a nonattainment or maintenance status for NAAQS pollutants (**Table 8**). Lebanon County is within a nonattainment or maintenance designation for the following NAAQS pollutants: ozone, therefore an emissions inventory was completed to identify the amount of emissions produced by the construction and operation of the proposed project to determine if a conformity determination is required. The duration of the construction will be outside of nesting season – approximately Late October through early March.

I completed the Gen Conformity Tier I Screening Factors for Small Solar ONLY spreadsheet, and estimated that the construction of the project would see emissions from one [1] compressor, one [1] trencher, and one [1] skid-steer as well as a single-unit short-haul truck and a passenger truck. The spreadsheet produced an estimated 0.024 tons NOX, 0.0027 tons VOC, and 6.2E-5 tons SO2. I put a screenshot of these results in **Table 10** under 13.10 TAB J – AIR QUALITY on page 136 and in **Table 11** on page 136.

**Table 8.** Air Quality results for Lebanon County. Ozone and PM 2.5 are now at attainment levels.

County	NAAQS	Area Name	Nonattainment in Year	Redesignation to Maintenance	Classification	Whole or Part County	Population (2010)	State/County FIPS Codes
Lebanon County	1-Hour Ozone (1979)-NAAQS revoked	Harrisburg-Lebanon-Carlisle, PA	92 93 94 95 96 97 98 99 00 01 02 03 04	/ /	Marginal	Whole	133,568	42/075
Lebanon County	8-Hour Ozone (1997)-NAAQS revoked	Harrisburg-Lebanon-Carlisle, PA	04 05 06	07/25/2007	Former Subpart 1	Whole	133,568	42/075
Lebanon County	PM-2.5 (1997)-NAAQS revoked	Harrisburg-Lebanon-Carlisle, PA	05 06 07 08 09 10 11 12 13	12/08/2014 *	Moderate	Whole	133,568	42/075
Lebanon County	PM-2.5 (2006)	Harrisburg-Lebanon-Carlisle-York, PA	09 10 11 12 13	12/08/2014	Moderate	Whole	133,568	42/075
Lebanon County	PM-2.5 (2012)	Lebanon County, PA	15 16 17 18	10/30/2019	Moderate	Whole	133,568	42/075

<sup>34</sup> [https://www3.epa.gov/airquality/greenbook/anayo\\_pa.html](https://www3.epa.gov/airquality/greenbook/anayo_pa.html)

It appears as if since this Project will not reach the de minimis limits set by the EPA, the estimates given above and summarized in [TAB J](#), and thus a more formal Emissions Inventory is not required.

However, based on the attached Emissions inventory, as summarized above and in TAB J, the proposed Project will not exceed the NAAQS pollutant thresholds; therefore, no conformity determination or mitigation measures are required.

## 9.2 Water Quality

As part of the environmental review process, water quantity and quality issues related to: discharges to or appropriations from surface or ground water; ground water protection programs (e.g., sole source aquifers and recharge areas); and water quality degradation from temporary construction activities must be reviewed. Water quantity and quality changes can impact other (and sometimes quite distant) environmental resources such as: groundwater and drinking water supplies; threatened or endangered species; other fish and wildlife species; and wetlands, among others. Permitting requirements (with mostly state agencies) are the applicant's responsibility and the environmental needs to address any permit requirements including the description of any mitigation or other compliance measures that may be necessary as a condition of any permits.

The proposed Project was reviewed for the presence of waterbodies, aquifers, and well-head protection areas. No water resources are within or immediately adjacent to the proposed site. Based on consultation with the PA DEP a stormwater management plan is not required. No effluent discharges or runoff are associated with the proposal based on consultation with the PA DEP. For additional information, please see recent stormwater study for the property for a previously approved project under 13.14 TAB N – HUMAN HEALTH AND SAFETY, pg. 145.

## 9.3 Noise

The proximity of the proposal's construction activities and operations to other land uses can produce sounds that could create significant noise impacts for proximal sensitive sound receptors, such as schools, hospitals, or residences, etc. Noise is defined as any loud, discordant, or disagreeable sound or sounds. More commonly, in an environmental context, noise is defined simply as unwanted sound. Certain activities inherently produce sound levels or sound characteristics that have the potential to create noise. The sound generated by proposed or existing facilities may become noise due to land use surrounding the facility. When lands adjoining a proposed or existing facility contain residential, commercial, institutional, or recreational uses that are proximal to the facility, noise is likely to be a matter of concern to residents or users of adjacent lands or facilities.

During the course of the Agency's NEPA environmental review process, the applicant or the applicant's consultant must consider any potential noise issues that may result from the location of the project. Proposed commercial or industrial projects must be evaluated to determine the level of noise the construction and operation of their facilities will contribute to any noise-sensitive areas such as residences, schools, hospitals, churches, parks, wildlife refuges, etc. Concurrently, proposals for housing and similarly noise-sensitive RD Instruction 1970-O § 1971.706(e) (Con.) projects must be evaluated to determine if their surroundings produce an unacceptable level of noise. The Agency has adopted and follows the noise impact analysis standards and procedures developed by the U.S. Department of Housing and Urban Development (HUD) and detailed in "Noise Abatement and Control" (24 C.F.R. 51, Subpart B).

The main sources of noise for the proposal will be mechanized trenching equipment, helical pile / ground screw machine, electric screw drivers and cut-off saws. Typical vehicle noise will also be present. Operation of the solar PV equipment is silent.

The proposed site is not located within or near noise sensitive receptors, therefore exposure is limited to the proposed site and anticipated decibel levels on site from construction and operation will be 80 dB during portions of construction. Noise level will be below 55 dB for surrounding residences.

Construction activities will be limited to 8 am to 6 pm over approximately two months outside of nesting season.



## 9.4 Transportation

The proposed site will not be a significant source of traffic generation, nor will it utilize rail transportation for supplies.

The roads to access the proposed site are public roads. The only temporary access to the site is available from the Ziegler's gravel driveway. No permanent access is needed for the proposed site. Beyond the routine electrical permit, no additional permitting is needed to access the site.

The FAA Notice Criteria Tool was used to screen the proposed site to determine if official notice must be filed with the FAA, the screening indicated that no filing is required (*Figure 25*).

**Figure 24.** FAA Notice Criteria Tool results for Project.

No transportation mitigation measures are anticipated.

The screenshot displays the FAA Notice Criteria Tool interface. The 'Structure Type' is set to 'SOLAR | Solar Panel'. The location is defined by Latitude (40 Deg 15 M 23.13 S) and Longitude (76 Deg 5 M 51.52 W). The Horizontal Datum is NAD83, Site Elevation (SE) is 920 (nearest foot), and Structure Height is 10 (nearest foot). The 'Is structure on airport?' checkbox is unchecked. A 'Submit' button is visible. Below the input fields, the 'Results' section states 'You do not exceed Notice Criteria'. A map area is partially visible at the bottom right, showing a red crosshair indicating the site location.

## 9.5 Aesthetics

Consideration is given to proposals near visually sensitive areas or areas of high scenic value (Formally Classified Lands, e.g. parks, recreation areas, historic sites, rivers, etc.; see also Section 2.2, Formally Classified Lands and 3.0 Historic and Cultural Properties). If visual impacts are identified and avoidance of the impacted area is not feasible, efforts should be made to design, construct, and operate the proposal in such a way that aesthetic impacts are minimized.

The proposed site was evaluated to determine if any visually sensitive areas or high scenic value areas are present near the project site and if the proposal would visually impact any of those resources. No visual impacts are anticipated. Please see also 2.2.3 Visual Impacts on page 22 and 13.2.3 Formally Classified Land Documents on page 64.

## 10.0 MITIGATION SUMMARY

The mitigation measures that will be incorporated into the Letter of Conditions (loan agreement) and all construction documents (including sub-contractors) are summarized in **Table 9**.

*Table 9. Mitigation measures summary.*

Area of Concern	Implementing Criteria	Enforcement	Responsible Party
General Construction and Site Activities	No construction shall commence until after the permit(s) are issued. The applicant will send a revised project description to the Agency for evaluation should the impacts associated with the proposal vary significantly from those evaluated in the Environmental Review, and the Environmental Review will be supplemented.	Substantiated at Monthly Construction Inspection by USDA Rural Development Area Specialist.  Incorporated into all construction documents and letter of conditions.	<ul style="list-style-type: none"> <li>• Applicant and its contractors (including sub-contractors).</li> <li>• Applicant will supply list of permits needed and copy of permits issued prior to any site clearing or construction activities commencing.</li> </ul>
Historic Resources	<ul style="list-style-type: none"> <li>• Should the scope and/or nature of the Project change or it becomes known from any source that historic or archaeological resources are located in or near the proposed area, the applicant will immediately cease work and contact the PA State Historic Preservation Office, interested tribes and the USDA Rural Development for further review.</li> <li>• When encountering inadvertent or unanticipated discoveries, the following requirements will be implemented and included in on site construction documents: <ul style="list-style-type: none"> <li>A. Inadvertent discoveries on state and private lands shall comply with applicable state notification standards, federal laws, 36 CFR Part 800.13, and the ACHP's Policy Statement Regarding treatment of Burial Sites, Human Remains, or Funerary Objects (February 23, 2007). The RD applicants shall ensure that their contractors maintain a copy of the inadvertent discoveries plan onsite for review.</li> </ul> </li> </ul>	Substantiated at Monthly Construction Inspection and verified on plans by USDA Rural Development Area Specialist.  Incorporated into all construction documents and letter of conditions.	Applicant and its contractors (including sub-contractors).

	<p>B. Discoveries on private and state lands:</p> <ol style="list-style-type: none"> <li>1. If historic properties are discovered, all work, including vehicular traffic shall immediately stop within a 50-ft radius of the discovery.</li> <li>2. If discoveries are made that contain burial sites or human remains, all work, including vehicular traffic shall immediately stop within a 100-ft radius of the discovery.</li> <li>3. For all discoveries work shall also stop in the surrounding area where further historic properties, subsurface burial sites, or human remains can reasonably be expected to occur.</li> <li>4. The relevant law enforcement authorities will be immediately contacted by onsite personnel to reduce delay times, in accordance with tribal, state, or local laws. If law enforcement determines the remains to not be part of a criminal investigation or a crime scene, the applicant will notify the RD staff who will in turn contact SHPO, and Indian tribes. The evaluation of human remains will be conducted at the site of discovery by a Secretary of Interior (SOI)-qualified professional. Remains that have been removed from their primary context and where that context may be in question may be retained in a secure location, pending further decisions on treatment and disposition.</li> <li>5. Within 48 hours of receiving notification of an inadvertent discovery, the RD applicant and appropriate local authorities will inspect the work site to ensure that all work, including vehicular traffic, has ceased, and protect the area of discovery from looting and vandalism.</li> <li>6. All archaeologists or other specialists, as appropriate, employed in response to inadvertent discoveries will be SOI-</li> </ol>		
--	---	--	--

	<p>qualified and have the knowledge to assess the resources within an undertaking's APE.</p> <p>7. Work may continue in other areas of the undertaking where no historic properties, burial sites, or human remains are present. If the inadvertent discovery appears to be a consequence of illegal activity such as looting, the onsite personnel will contact the appropriate legal authorities immediately if the land ownership has not already done so.</p> <p>8. Work may not resume in the area of the discovery until a notice to proceed has been issued by the RD staff. Compliance with the above must be determined confirming the appropriate local protocols and consulting parties have been consulted.</p> <p>C. Inadvertent discoveries on federal and tribal land shall follow the processes required by the federal or tribal entity.</p>		
Biological Resources Endangered Species	<p>The PNDI determination is valid for two [2] years, therefore if the project has not been fully implemented prior to June 8, 2026, the PNDI screening will be conducted again, results of which will be submitted to USDA Rural Development for further evaluation.</p>	<ul style="list-style-type: none"> <li>• Substantiated at Monthly Construction Inspection and verified on plans by USDA RD Area Specialist.</li> <li>• Incorporated into all construction documents and letter of conditions.</li> </ul>	<p>Applicant will supply a subsequent PNDI if the project is not fully implemented by the date specified.</p>
Biological Resources Migratory Birds	<p>1. To comply with the spirit and letter of the MBTA, site clearing during nesting season will be avoided from the period of March 31 and November 15. The applicant will consult directly with USFWS and state wildlife agencies for locality-specific data on migratory birds and their nesting season, should compliance with this seasonal restriction be unavoidable, a site survey must be conducted to determine presence of any migratory birds.</p> <p>2. Implement FWS Nationwide Standard Conservation Measures to employ at the Project's development site with the goal of reducing impacts to birds and their habitats. These measures are grouped into 3 categories:</p>	<p>Substantiated at Monthly Construction Inspection by USDA Rural Development Area Specialist.</p> <p>Incorporated into all construction documents and letter of conditions.</p>	<p>Applicant and its contractors (including sub-contractors).</p>

	<p>General, Habitat Protection, and Stressor Management.</p> <p>These measures are updated overtime so the Conservation Measures website for the most up-to-date list. Link: <a href="https://www.fws.gov/media/nationwide-standard-conservation-measures">https://www.fws.gov/media/nationwide-standard-conservation-measures</a>.</p>		
<p>Biological Resources Invasive Species</p>	<p>1. Contract documents will ensure that any contractors transporting goods, equipment and vehicles from Spotted Lantern Fly quarantine areas are permitted and adhere to the Spotted Lantern Fly quarantine requirements.</p> <p>2. Best practices will be utilized to reduce the introduction of invasive species such as implementing a vegetative maintenance/landscape plan for monitoring and eliminating invasive species, using certified-weed free seed mixes and native species to revegetate construction areas and landscaping, and cleaning construction vehicles.</p>	<p>Substantiated at Monthly Construction Inspection by USDA Rural Development Area Specialist.</p> <p>Incorporated into all construction documents and letter of conditions.</p>	<p>Applicant and its contractors (including sub-contractors).</p>



## 11.0 SUPPORT DOCUMENTATION

Please see additional supporting documentation in TAB A – TAB N, much of which was included in the March 31, 2024 submission.

As seen in this document the Preparer, in coordination with the Owner and the Installer have made every effort to coordinate and consult with Federal and State environmental regulatory and natural resource agents as well as tribal contacts.

To the most practical extent possible, all correspondence made in preparation of this document, especially in regard to identifying important environmental issues, developing alternatives, and analyzing potential impacts has been either directly included as a quote or referenced.

All documents produced indicating compliance with applicable laws and regulations have been appended to this document and will be made readily available for public inspection. If additional documents become available, these will be appended to a revised version of this document and will be made publicly available.

Please see Attachment A, which includes TAB A (pg. 127)– TAB N (pg. 145) for additional support documents.

## 12.0 LIST OF PREPARERS

This document was prepared by:

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## 12.1 ER Preparation Communication

Hi Bradley,

I am performing the environmental review for the Ziegler's Blue Mountain Game Farm REAP grant application in Annville, PA. This project is classified as a NEPA Categorical Exclusion 1970.54 which requires an Environmental Report (ER). It looks like a lot of information has already been gathered for this project. Has an environmental report already been written or begun to be written? If not, Pennsylvania has developed an ER template which walks you through everything you need to gather and write about (attached to this e-mail).

Based on the provided documents, I have a few questions and general statements.

- Can you provide letters and/or correspondence with the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officers (THPO) if they were contacted? SHPO consultation for PA happens through a portal called PA-SHARE. Typically, once I begin the environmental review, I will complete the Section 106 process with SHPO and THPOs. I can add a contact to the project so you can view SHPO status.
  - o To start Section 106 consultation with the SHPO and THPOs. Section 1.1 of the ER template lists project details needed for consultation.
  - o When describing ground disturbance make sure to provide an aerial location and the length, width, and depth. Things like trenching, solar array racking posts, any leveling, etc.
  - o Describing and diagraming on an aerial things like access roads, staging areas, fencing, etc.
  - o Describing the point of interconnection with the grid. Is it inside or outside of a building? What is the purpose of this building? Age of building? Any additional trenching or ground disturbance?
- It was mentioned communication happened with the Historic District? Can you provide that documentation as well?
- There are five tribes with interests in Lebanon County, PA so THPO consultation will need to happen. Again, I will complete this process after I receive more project details and keep you informed of the results.

I do not believe we have to fill out the Farmland Conversion Impact Rating form (AD-1006). Although the project is on farmland of statewide importance and possibly prime farmland, the project is a small-scale solar array (that covers an area of an acre or less) and not subject to FPPA per 7 CFR 1970.557(b).

I would complete the Pennsylvania Natural Diversity Index earlier on. There is a low percentage of hydric soils on site and the bog turtle is listed on the Threatened and Endangered Species List. A bog turtle survey might be required.

Please let me know if you have any questions, I am here to provide help if I can.

Thank you,

Noelle Michel  
Scientist II (CTR)  
Federal Contractor for USDA Rural Development  
[Noelle.michel@usda.gov](mailto:Noelle.michel@usda.gov)

## 13.0 ATTACHMENT A: ATTACHMENTS AND EXHIBITS

### 13.1 TAB A – PROJECT DESCRIPTION | PURPOSE | ALTERNATIVES

#### 13.1.1 USGS Topographic Map

See *Figure 4*, page 10

#### 13.1.2 Aerial Photos

See *Figure 3*, page 9.

#### 13.1.3 Site Survey/Plan

See *Figure 1*, page 7

#### 13.1.4 Photos of Existing Structure(s)

The System will tie into the grid near the meter seen in *Figure 26*.



*Figure 25.* Photo of the utility building where the system is to be grid-tied.

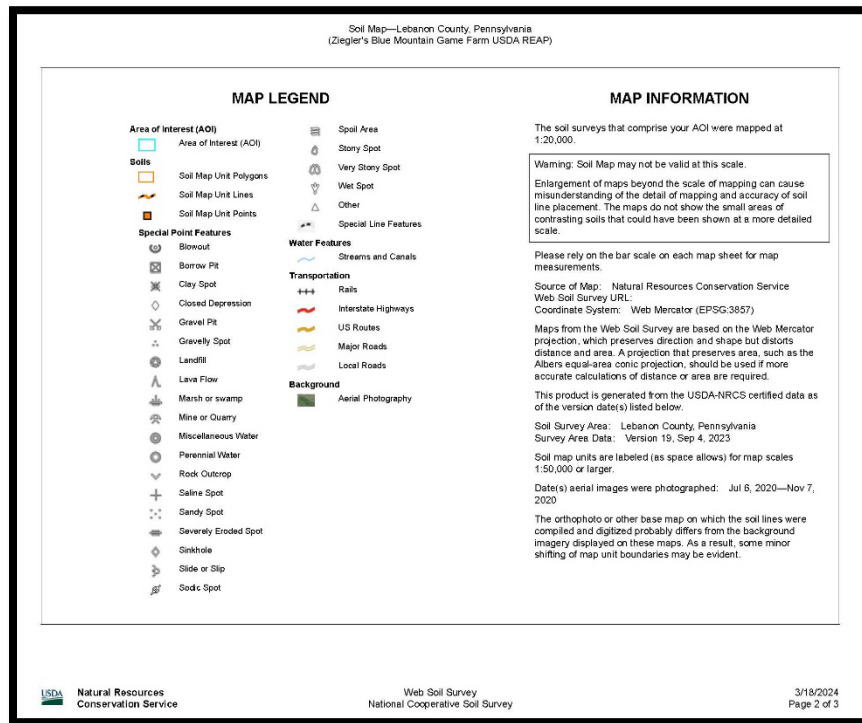
Please see 13.5.3 Photos of Existing Structures on pg. 87 below for additional existing building photographs including those of potential historical significance.

#### 13.1.5 Alternatives

Roof-mount was considered, but not pursued since this would require approximately 40% more solar modules, add additional trenching and thus voltage drop to the meter. Furthermore, the only available structures with sufficient roof space are scheduled for replacement in five (5) years.







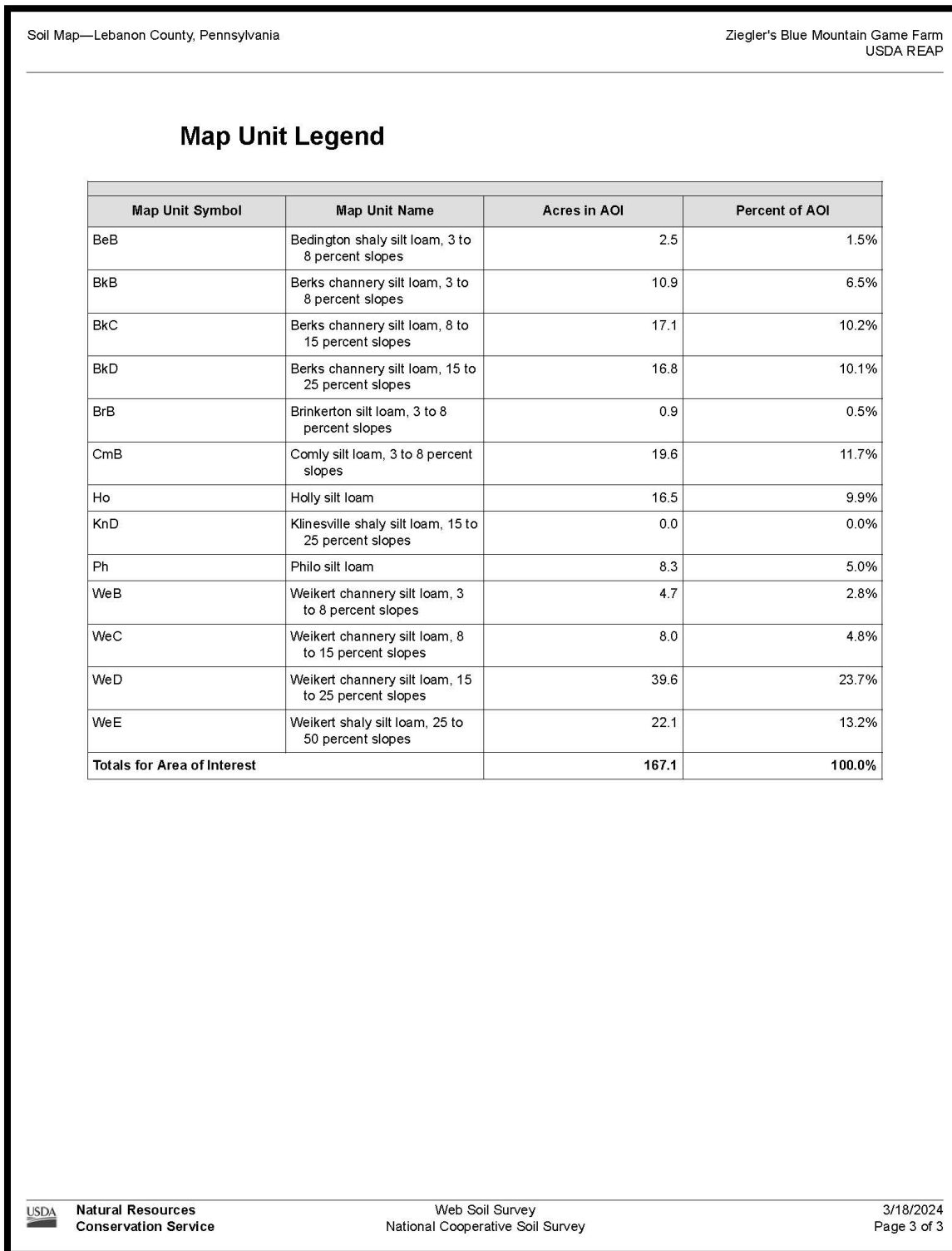


Figure 26. Soil map of ZBMGF.

Per my email correspondence with Noelle Michel (pg. 25), a LESA Form AD-1006 (if converting farmland) is not required.

### 13.2.2 Formally Classified Land and Historical Places Documents

See one-page “1.2.4.2 Q11 Historical Places.pdf,” (*Figure 28*), one-page “1.2.4.10 Q18 – Classified Land” (*Figure 29*), and 5-pg “1.2.4.12 Q29 Env Justice” .

1.2.4.2 State Historic Preservation (Q11)
<p>As seen in the previous section, 1.2.4.1, Historic Places, the Project is not in the viewshed of any nationally or state-registered Historic Places, and the system is not being mounted a building that is fifty-years old or older and thus this criterion is non-applicable.</p>
<p>RD Environmental Information – Question 11 – Historical (&gt;50-year-old buildings) <span style="float: right;">Page 1 of 1</span></p>

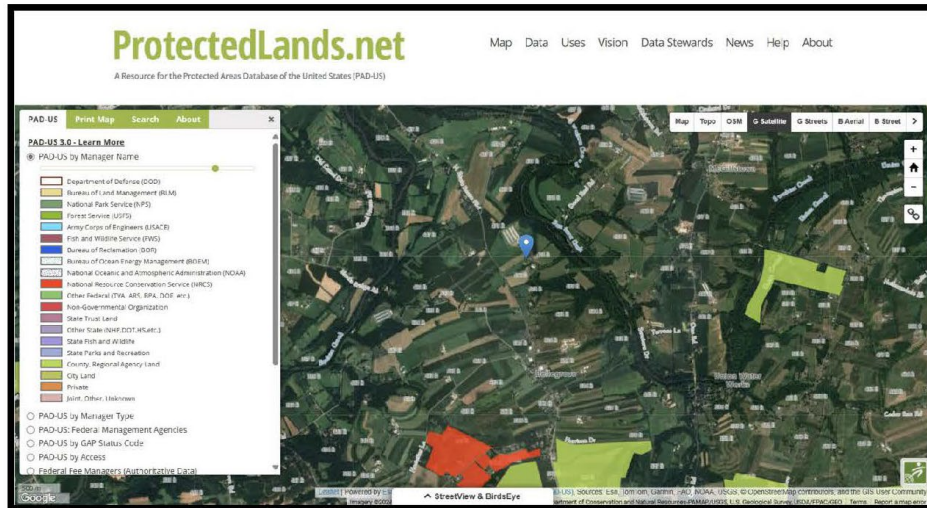
*Figure 27. Response to Environmental Review as submitted Mar 31, 2024 regarding the Project being on or in the viewshed of historically designated places.<sup>35</sup>*

<sup>35</sup> Two buildings currently under review and possible reclassification under this proposal. Please see 3.0 Cultural Resources and Historic Properties for further information regarding potentially historically significant buildings.



#### 1.2.4.10 RD-Environmental-Information Q18 – Classified Land

After performing a web search on protectedlands.net, it appears as if the Project is not adjacent to any Classified Land (**Figure 1**).

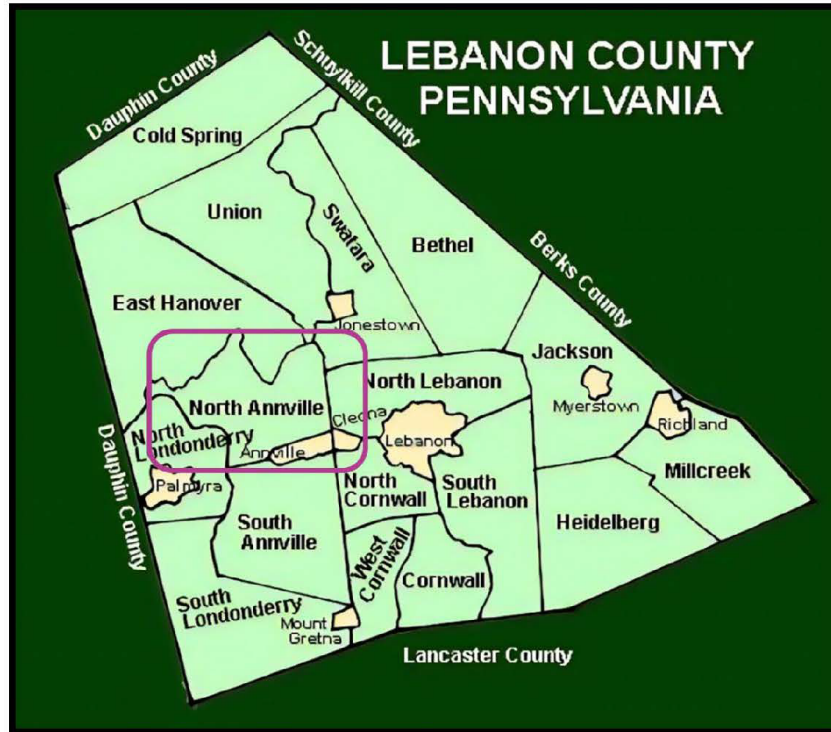


**Figure 1.** The Project, represented by the blue pin, is at least one mile from the nearest Classified Lands: NRCS and County, Regional Agency Land.

**Figure 28.** Classified Land response from Mar 31, 2024 submission.

#### 1.2.4.12 RD Environmental Information – Env Justice (Q29)

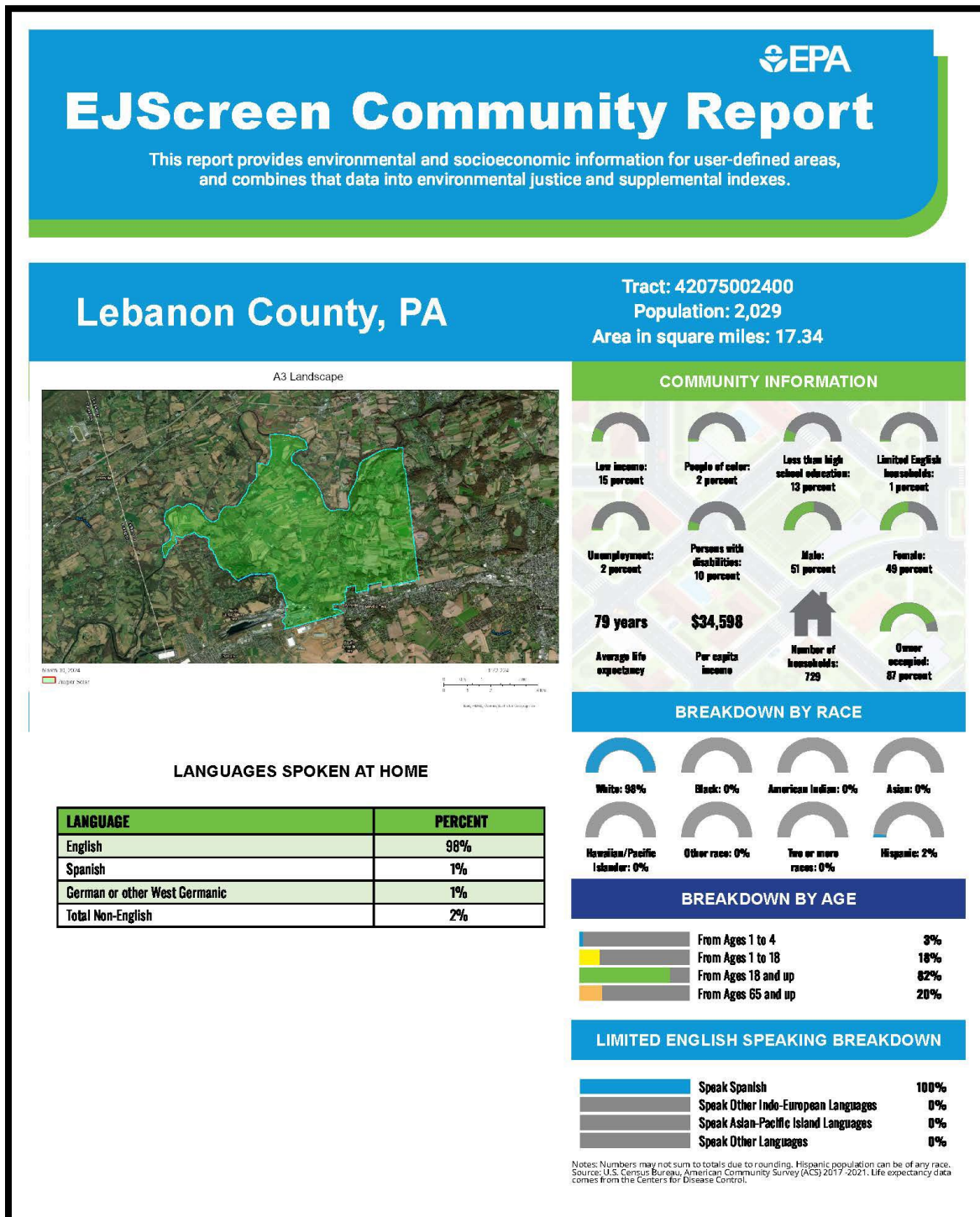
I reviewed the EPA EJScreen website<sup>1</sup> to examine whether or not the Project site is within or near any Environmental Justice sites and determined that it is not (Figure 1).



**Figure 1.** The Project is located in North Annville Township of Lebanon County.

A summary of results follows, indicating that North Annville is on par with the State of Pennsylvania in regard to average statistics on environmental justice.

<sup>1</sup> <https://ejscreen.epa.gov/mapper>



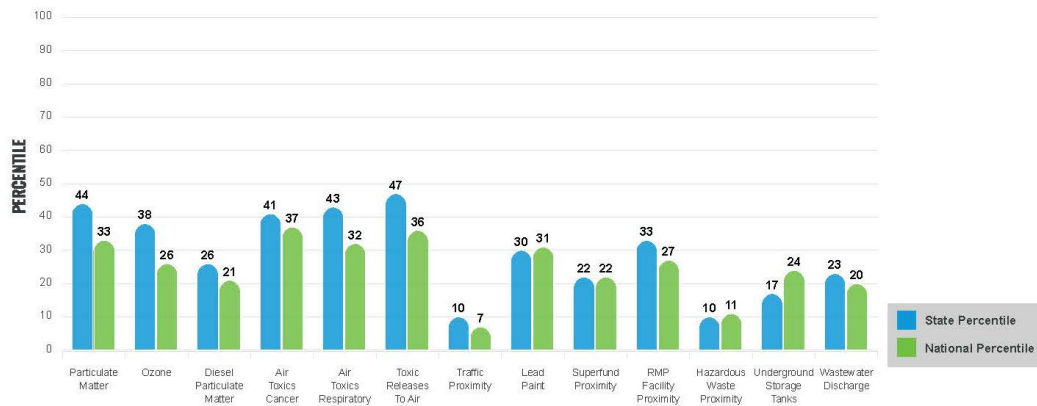
## Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ Indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

### EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

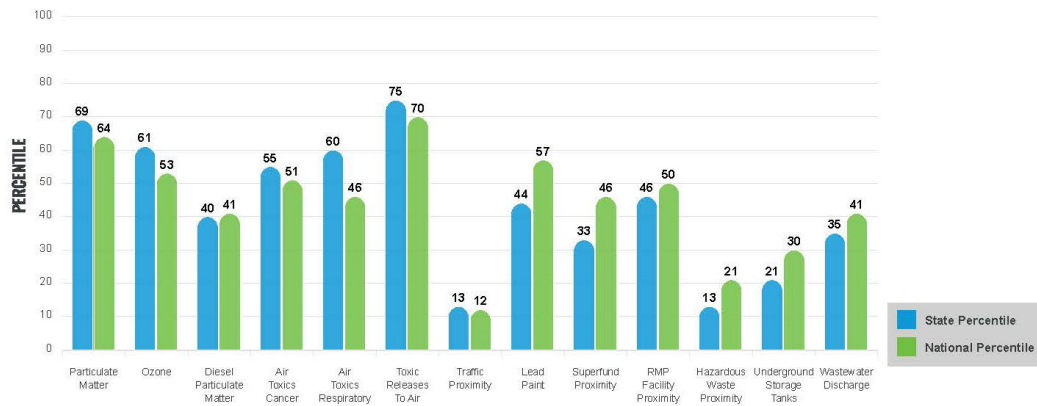
#### EJ INDEXES FOR THE SELECTED LOCATION



### SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

#### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 42075002400



## EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
<b>POLLUTION AND SOURCES</b>					
Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	9.23	8.65	77	8.08	78
Ozone (ppb)	62	61.6	58	61.6	57
Diesel Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	0.182	0.233	35	0.261	40
Air Toxics Cancer Risk* (lifetime risk per million)	30	31	33	28	35
Air Toxics Respiratory HI*	0.3	0.28	33	0.31	31
Toxic Releases to Air	6,300	4,000	88	4,600	88
Traffic Proximity (daily traffic count/distance to road)	5.2	200	12	210	11
Lead Paint (% Pre-1960 Housing)	0.44	0.49	45	0.3	69
Superfund Proximity (site count/km distance)	0.056	0.18	32	0.13	47
RMP Facility Proximity (facility count/km distance)	0.22	0.45	52	0.43	60
Hazardous Waste Proximity (facility count/km distance)	0.1	1.4	12	1.9	20
Underground Storage Tanks (count/km <sup>2</sup> )	0.12	3.6	19	3.9	29
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00061	1.7	34	22	44
<b>SOCIOECONOMIC INDICATORS</b>					
Demographic Index	9%	26%	14	35%	8
Supplemental Demographic Index	10%	13%	39	14%	35
People of Color	2%	24%	15	39%	7
Low Income	15%	28%	30	31%	28
Unemployment Rate	2%	6%	30	6%	32
Limited English Speaking Households	1%	2%	69	5%	58
Less Than High School Education	13%	9%	77	12%	67
Under Age 5	3%	5%	30	6%	29
Over Age 64	20%	19%	61	17%	67
Low Life Expectancy	19%	20%	50	20%	49

\*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/airtoxic/air-toxics-data-update>.

### Sites reporting to EPA within defined area:

Superfund .....	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities .....	0
Water Dischargers .....	17
Air Pollution .....	6
Brownfields .....	0
Toxic Release Inventory .....	2

### Other community features within defined area:

Schools .....	2
Hospitals .....	0
Places of Worship .....	4

### Other environmental data:

Air Non-attainment .....	Yes
Impaired Waters .....	Yes

Selected location contains American Indian Reservation Lands* .....	No
Selected location contains a "Justice40 (CEIST)" disadvantaged community .....	No
Selected location contains an EPA IRA disadvantaged community .....	No

Report for Tract: 42075002400



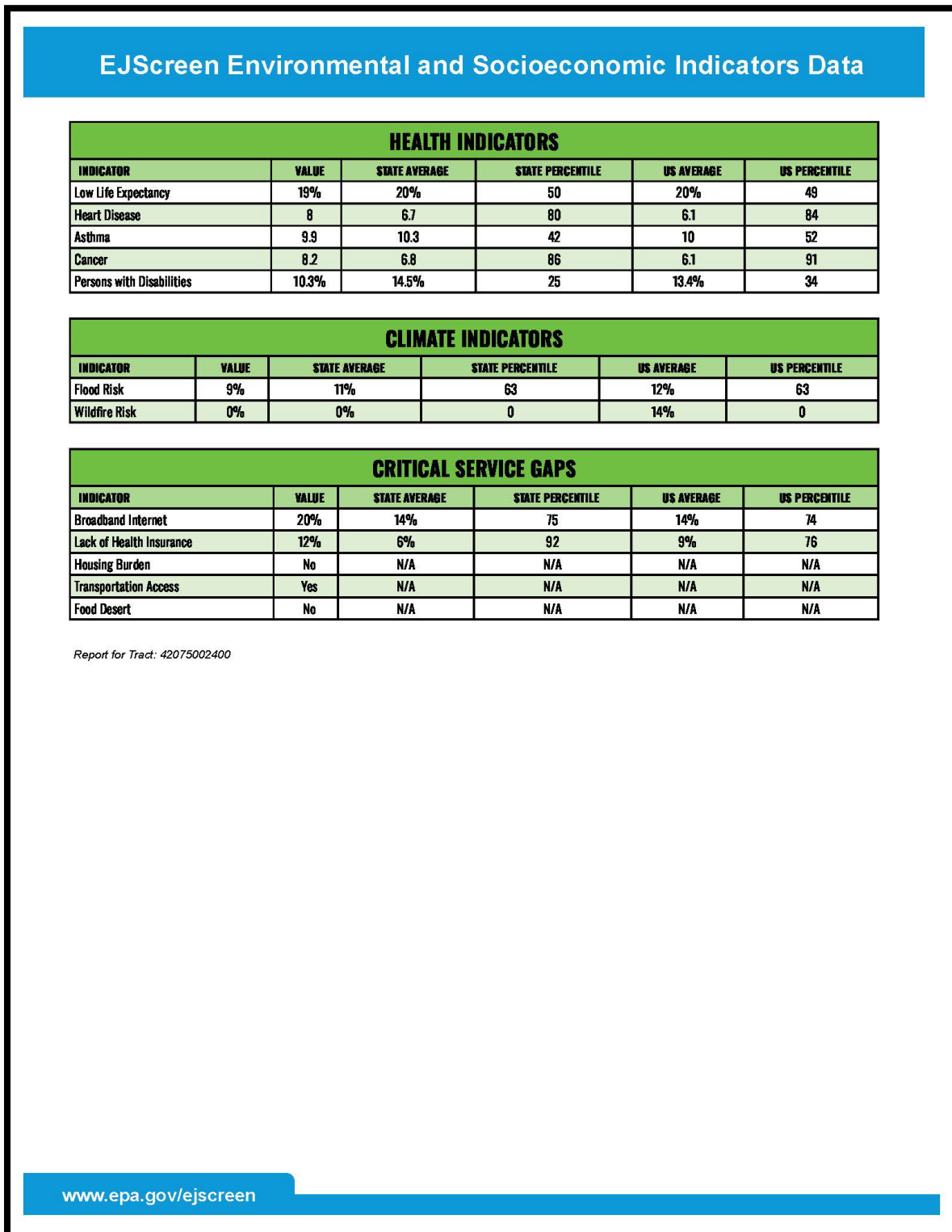


Figure 29. Section 1.2.4.12 from Environmental Section on Environmental Justice from Mar 31, 2024.

### 13.2.3 Intergovernmental Review Comments

N/A

## 13.3 TAB C – FLOODPLAINS

### 13.3.1 FEMA FIRM Map

See **Figure 31** and the one-page “1.2.4.8 Q17 FEMA.pdf” that follows.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel 63 of 780 (**Figure 31**), with a map revision date of April 5, 2016 and FEMA Standard Flood Hazard Determination Form 086-0-032 were reviewed and indicates the proposal is in not in a Flood Zone (unshaded), which is outside of any designated floodplain, therefore this proposal will not impact any floodplain. The community does participate in the National Flood Insurance Program.

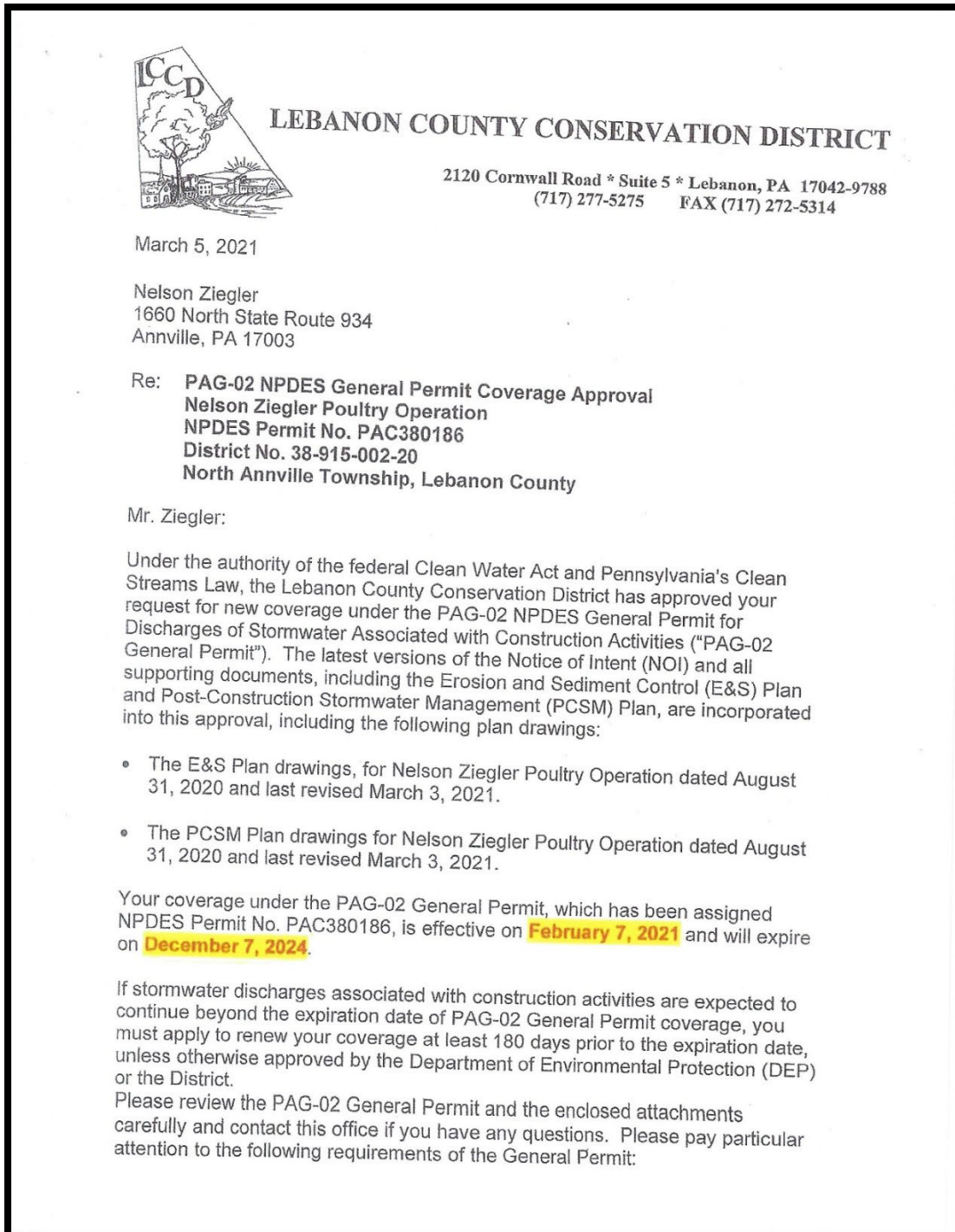


**Figure 30.** Informal FEMA survey indicates that Project, inside dashed circle is not at risk of flooding impact.<sup>36</sup>

<sup>36</sup> Use URL <https://msc.fema.gov/portal/search?AddressQuery=-76.55253754201182%2C%2040.38125115587737> to verify.

### 13.3.2 Stormwater Permit

A 2021 stormwater permit for the property is given in *Figure 32*.





March 5, 2021

LCCD

Page 2 of 4

In accordance with 25 Pa. Code § 102.5(h), operators who are not the permittee shall be co-permittees. An operator is a person who either has oversight responsibility of an earth disturbance activity on a project site who has the ability to make modifications to the E&S Plan, PCSM Plan or site specifications, or has day to day operational control over an earth disturbance activity on a project site. Please be advised that after an operator (contractor) has been selected for the project, the operator must be made a co-permittee and enter into an agreement with the permittee. Please use the enclosed Co-Permittee Acknowledgement Form for Chapter 102 Permits form (3800-FM-BCW0271a) to add a co-permittee.

- A pre-construction meeting is required as specified in 25 Pa. Code § 102.5(e), unless otherwise notified in writing by this office. The purpose of this meeting is to review all aspects of the permit with the permittee, co-permittees, operators, consultants, inspectors and licensed professionals or their designees who will be responsible for the implementation of the critical stages of the approved PCSM Plan. You must provide at least seven days notice of the pre-construction meeting to all invited attendees.
- You must conduct inspections of all best management practices (BMPs) on a weekly basis and after each measurable stormwater event (i.e., precipitation in an amount of 0.25 inch or greater over a 24-hour period) to ensure effective and efficient operation. The Visual Site Inspection Report Form (3800-FM-BCW0271d) is enclosed along with instructions. This form (or an equivalent electronic form providing the same information) must be used to document the required site inspections.
- For any property containing a PCSM BMP, the permittee or co-permittee must record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance (O&M) for PCSM BMPs, and provide notice that the responsibility for long-term O&M of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees. **You must record an instrument with the Recorder of Deeds within 45 days and provide proof of the recording at the time an application to transfer permit coverage is submitted, if applicable, and at the time a Notice of Termination (NOT) is submitted to this office.**

CONSERVING TODAY'S RESOURCES FOR TOMORROW



March 5, 2021

LCCD

Page 3 of 4

- If there are any changes to the PCSM BMPs or long-term operation and maintenance plan after the initial instrument recording and prior to permit termination, the permittee(s) will need to amend the initial recorded instrument at the recorder of deeds office prior to permit termination. Please note, most Recorder of Deeds Offices require that the land owner (at the time of actual recording) signs the instrument to be recorded. If the land owner changes and an amended instrument needs to be recorded, the Recorder of Deeds office will likely require the new land owner's signature on the amended instrument. It is recommended that for any sale or transfer of property to a new owner before this permit is terminated that the permittee seek legal counsel on how to structure the sale or transfer to allow the recorded instrument to be amended.
- The NOT form (3800-PM-BCW0229b) is also enclosed and must be completed and filed when construction activities have ceased and final stabilization has been achieved. The NOT must identify the responsible person(s) for the long-term O&M of the PCSM BMPs. Please be advised that the permittee and any co-permittees remain responsible for all operational maintenance for this project site until the NOT has been filed and acknowledged. **It is important that you fulfill your obligations under the General Permit and submit a complete NOT to this office upon final stabilization of the site.**

Persons aggrieved by an action of a conservation district under 25 Pa. Code Chapter 102 may request an informal hearing with DEP within 30 days of publication of this notice in the *Pennsylvania Bulletin*, pursuant to 25 Pa. Code § 102.32(c). DEP will schedule this informal hearing within 30 days of the request. After this informal hearing, any final determination by DEP may be appealed to the Environmental Hearing Board as provided below.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. § 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board  
Rachel Carson State Office Building, Second Floor  
400 Market Street  
P.O. Box 8457  
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the Pennsylvania Relay Service, 800-654-5984.

CONSERVING TODAY'S RESOURCES FOR TOMORROW

March 5, 2021

LCCD

Page 4 of 4

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at <http://ehb.courtapps.com> or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

**IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.**

**IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.**

If you have questions, please contact Nate Weaver by e-mail at [nate.weaver@lccd.org](mailto:nate.weaver@lccd.org) or by telephone at 717-277-5275.

Sincerely,



Karl Kerchner PG, CPESC  
LCCD Assistant District Manager/  
Land & Water Resources Program Manager

C: Lebanon County Planning  
North Annville Township  
Red Barn Consulting, Inc. c/I Bert Nye  
PADEP Bureau of Clean Water  
PADEP SCRO

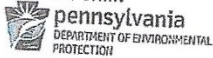
Enclosures:

PAG-02 General Permit  
Stamped Approved E&S Plan Drawings & E&S Module 1  
Approved PCSM Plan Drawings & PCSM Module 2  
Visual Site Inspection Report Form and Instructions  
Co-Permittee Acknowledgement Form and Instructions for Chapter 102 Permits  
Notice of Termination Form

CONSERVING TODAY'S RESOURCES FOR TOMORROW



3600-PM-BCW0405d Rev. 12/2019  
PAG-02 Permit



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF CLEAN WATER

IMPORTANT DOCUMENTS  
PLEASE READ  
SAVE FOR FUTURE USE

PAG-02  
AUTHORIZATION TO DISCHARGE UNDER THE  
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
GENERAL PERMIT FOR DISCHARGES OF  
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

NPDES PERMIT NO: PAC380186

In compliance with the provisions of the Clean Water Act, 33 U.S.C.A. §§ 1251—1387 and Pennsylvania's Clean Streams Law, as amended, 35 P.S. §§ 691.1—691.1001, the Department of Environmental Protection (DEP) authorizes the permittee named below to discharge stormwater associated with construction activities from an earth disturbance activity that involves earth disturbance greater than or equal to one acre, or an earth disturbance on any portion, part, or during any stage of a larger common plan of development or sale that involves earth disturbance greater than or equal to one acre:

Permittee

Nelson Ziegler  
1660 North State Route 934  
Annville, PA 17003

Project Site

Nelson Ziegler Poultry Operation  
1660 North State Route 934  
Annville, PA 17003  
North Annville Township  
Lebanon County

This authorization is subject to DEP's enclosed PAG-02 General Permit (General Permit) which incorporates all effluent limitations, monitoring and reporting requirements, and other terms, conditions, criteria, and special requirements for the discharge of stormwater associated with construction activities to surface waters, including through storm sewers. Authorization to discharge is subject to the implementation of the plans and additional associated information submitted as part of the Notice of Intent (NOI) for general permit coverage.

APPROVAL TO DISCHARGE IN ACCORDANCE WITH THE TERMS AND CONDITIONS HEREIN IS AUTHORIZED BEGINNING ON MARCH 5, 2021 AND WILL EXPIRE ON December 7, 2024 WHEN CONDUCTED PURSUANT TO THE TERMS AND CONDITIONS OF THIS GENERAL PERMIT. GENERAL PERMIT COVERAGE MAY BE TERMINATED PRIOR TO THE EXPIRATION DATE UPON RECEIPT AND ACKNOWLEDGEMENT OF A NOTICE OF TERMINATION FORM AND APPROVAL BY DEP OR THE AUTHORIZED CONSERVATION DISTRICT. NO CONDITION OF THIS GENERAL PERMIT SHALL RELEASE THE PERMITTEE OR CO-PERMITTEE(S) FROM ANY RESPONSIBILITY OR REQUIREMENT UNDER STATE OR FEDERAL ENVIRONMENTAL STATUTES, REGULATIONS, OR LOCAL ORDINANCES.

Coverage under the PAG-02 General Permit is authorized by:

Karl Kerchner, PG, CPESC  
Assistant District Manager, Land & Water Resource Manager  
Lebanon County Conservation District

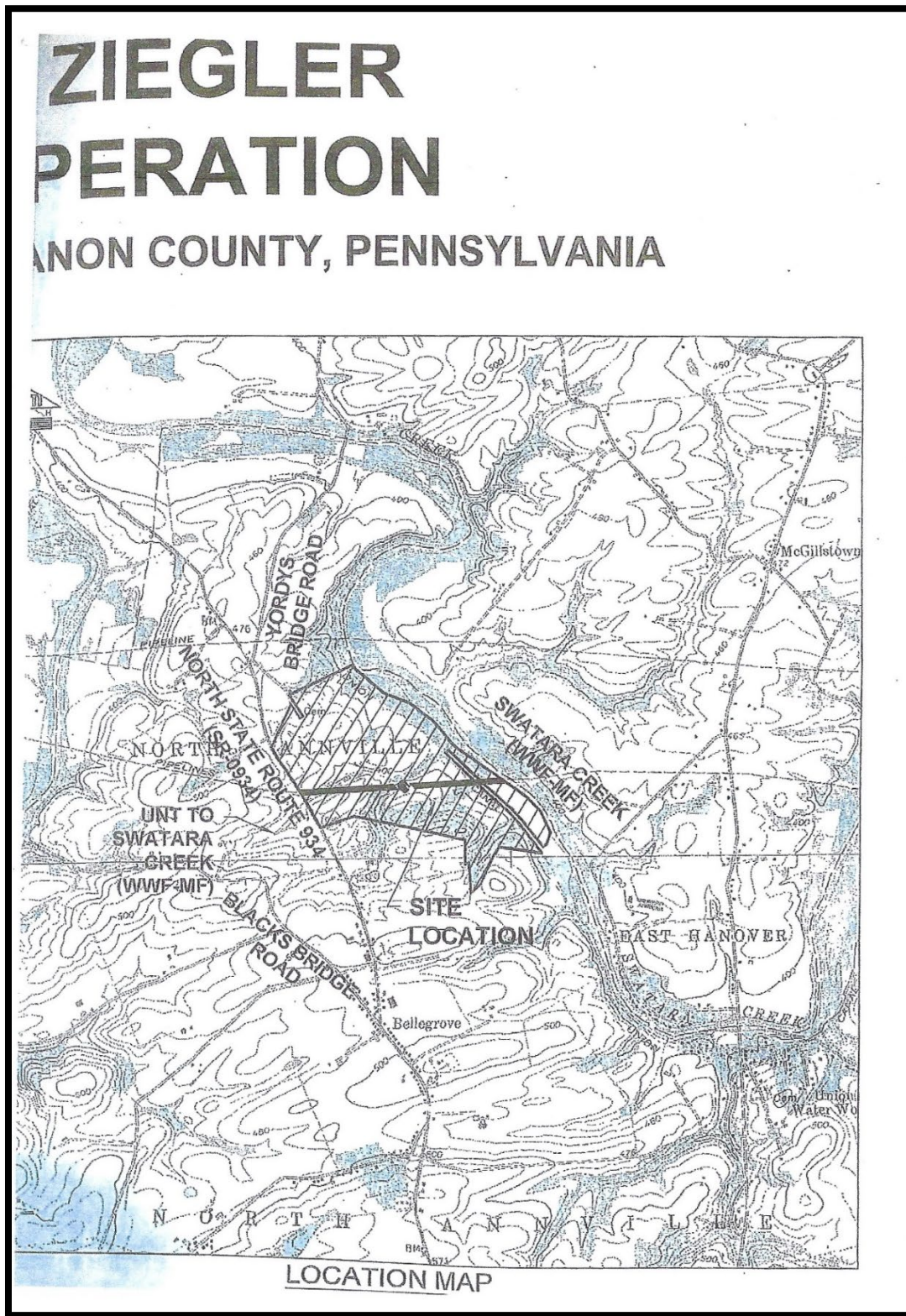


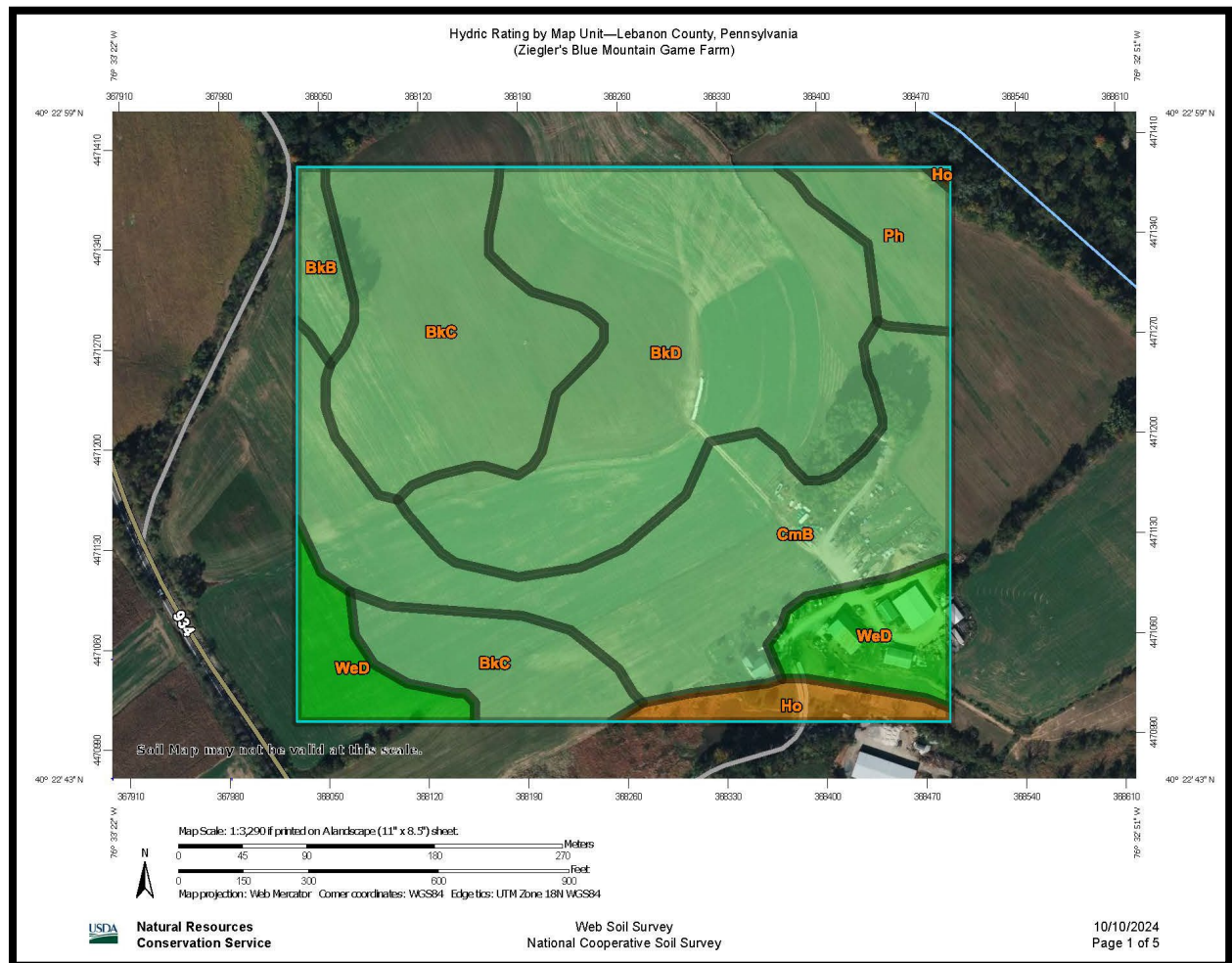
Figure 31. Stormwater permit.

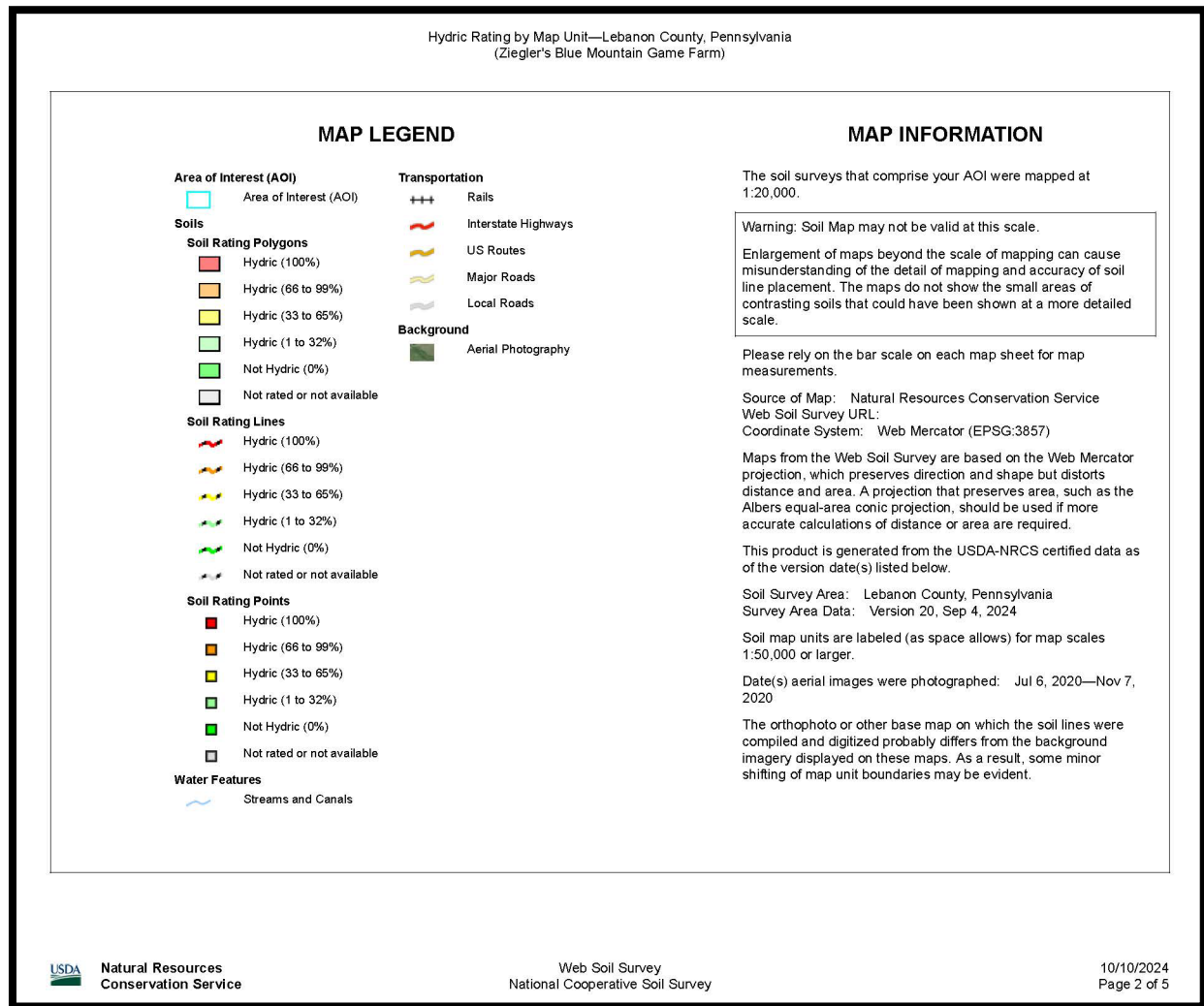


## 13.4 TAB D – WETLANDS

### 13.4.1 NRCS Hydric Soils Map

In addition to the information embodied in (*Figure 33*), please see 8.0 Important Farmland, and 13.2.1 NRCS Farmland Soils Map.







Hydric Rating by Map Unit—Lebanon County, Pennsylvania

Ziegler's Blue Mountain Game Farm

## Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BkB	Berks channery silt loam, 3 to 8 percent slopes	5	1.0	2.2%
BkC	Berks channery silt loam, 8 to 15 percent slopes	5	10.3	23.4%
BkD	Berks channery silt loam, 15 to 25 percent slopes	5	14.3	32.4%
CmB	Comly silt loam, 3 to 8 percent slopes	5	11.4	25.8%
Ho	Holly silt loam	96	1.3	2.9%
Ph	Philo silt loam	10	2.0	4.5%
WeD	Weikert channery silt loam, 15 to 25 percent slopes	0	3.9	8.9%
<b>Totals for Area of Interest</b>			<b>44.3</b>	<b>100.0%</b>



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

10/10/2024  
Page 3 of 5

Hydric Rating by Map Unit—Lebanon County, Pennsylvania

Ziegler's Blue Mountain Game Farm

## Description

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

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

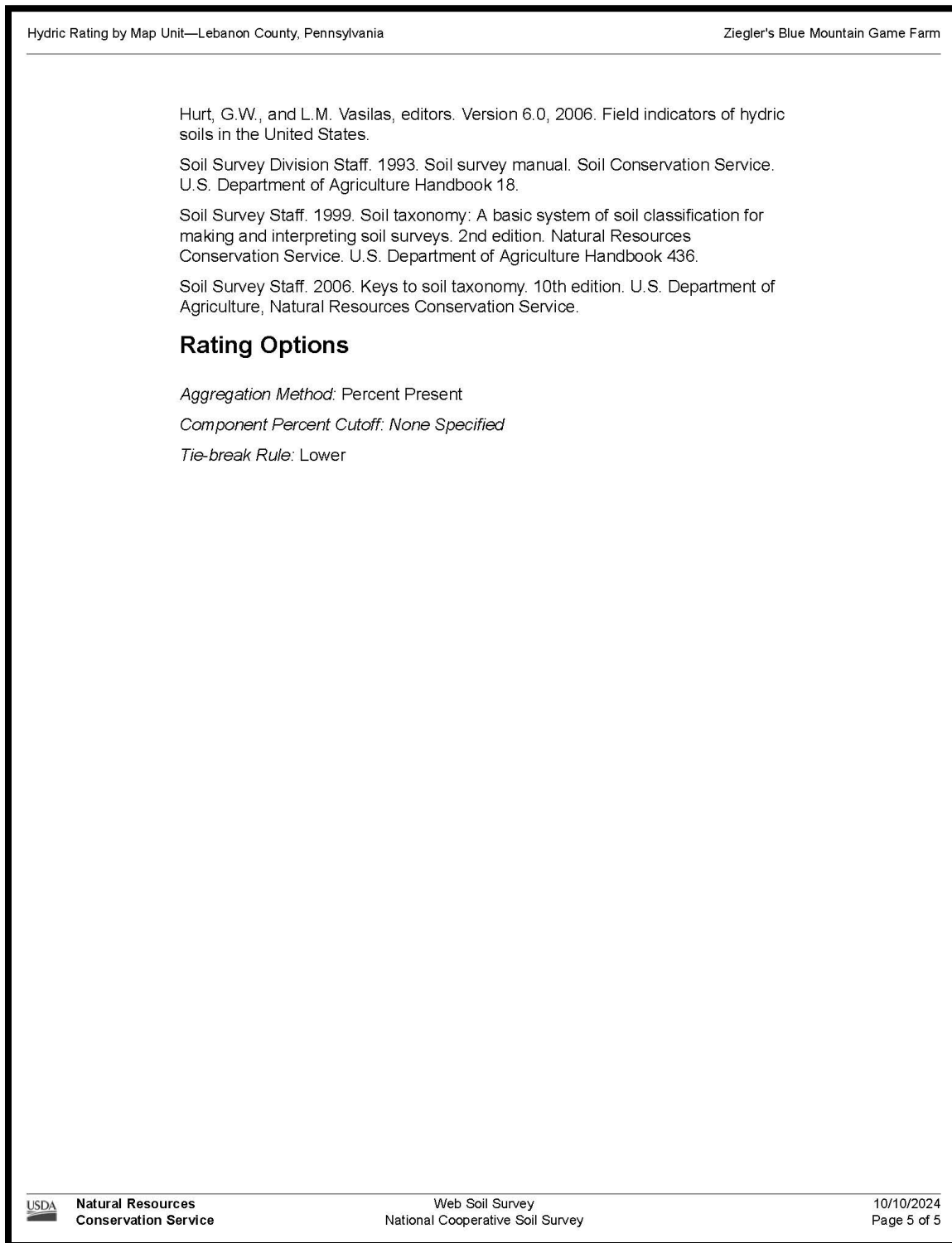


Figure 32. Hydric soils report as generated by Noelle Michel for this Project.

13.4.2 USFWS NWI Map

Please see *Figure 23* on pg. 42.

13.4.3 Wetland Delineation Survey

N/A

13.4.4 USACE Jurisdictional

N/A

13.4.5 Determination (if a structure is located in/near a wetland)

N/A

## 13.5 TAB E – CULTURAL RESOURCES AND HISTORIC PROPERTIES

### 13.5.1 PA SHPO Consultation – Gardosik and McKeel

As addressed in Section 3.1 PA-SHARE Correspondence above, I received a Project Number, 2024PR03738, which triggered a review per correspondence with John Gardosik – [jgardosik@pa.gov](mailto:jgardosik@pa.gov). The letter from Gardosik and McKeel indicated “No Archaeological Resources,” but More Information Requested for Above-Ground Resources,” (*Figure 34*).



**Pennsylvania State Historic Preservation Office**  
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

August 12, 2024

*Sent Via PA-SHARE*

RE: ER Project # 2024PR03738.001, Zeigler Blue Mountain Game Farm 256-kW Ground-Mount Solar Photovoltaic Project, US Department of Agriculture, North Annville Township, Lebanon County

Dear Submitter,

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

**Above Ground Resources**

*More Information Requested - Update Existing Resource*

The PA SHPO considers a farm to be the farmstead (complex of buildings) and historically associated farmland. It appears the land on which the project is proposed is historically associated with the farmstead at this address. Please provide Identification level information for the farm. This should include photographs of the buildings in the farmstead with the photographs keyed to a current aerial map with building names and dates of construction. Please include historic aerial mapping from the 1930s-1970s. Guidance for accessing the aerials is provided in the Attachments section below. The photos, site plan and historic aerials and Identification level information will be used to determine if the farmstead could meet the minimum requirements for National Register eligibility and possibly be a historic property that would require consideration during project planning. Historic aerials: <https://datacommons.maps.arcgis.com/apps/View/index.html?appid=10af5f75f9f4f01866359ba398cb6a9> Please submit the requested materials to the PA SHPO through PA-SHARE using the link under SHPO Requests More Information on the Response screen.

For questions concerning above ground resources, please contact John Gardosik at [jgardosik@pa.gov](mailto:jgardosik@pa.gov).

**Archaeological Resources**

*No Archaeological Concerns - Environmental Review - No Effect - Archaeological*

Based on the information received and available in our files, in our opinion, the proposed project should have No Effect on archaeological resources. Should the scope of the project be amended to include additional ground-disturbing activity and/or should you be made

ER Project # 2024PR03738.001  
Page 2 of 2

aware of historic property concerns regarding archaeological resources, you will need to reinitiate consultation with our office using PA-SHARE.

For questions concerning archaeological resources, please contact Justin McKeel at [jusmckeel@pa.gov](mailto:jusmckeel@pa.gov).

Sincerely,



Emma Diehl  
Environmental Review Division Manager

*Figure 33. PA SHPO correspondence re Above-Ground Resources and Archaeological Resources.*



### 13.5.2 APE Map

The map of the potentially affected area is seen in (*Figure 35*).



*Figure 34.* Map as generated by John Gardosik Aug 2024.

### 13.5.3 Photos of Existing Structures

During the September 3, 2024 walkdown with Jeffrey Graybill of the PennState Extension for the invasive species evaluation, the Installer, Will Stahlman took photographs of the seven (7) buildings extant on the Project site. See *Figure 36- Figure 39* below and *Figure 26*, page 58.



*Figure 35.* Left – farmstead house built circa 1830s. Right – Bank Barn built circa 1830s.



*Figure 36. Left – storage shed built in 1980. Right – pole barn built in 2018.*



*Figure 37. Left – garage built in 2011. Right – hay storage structure built in 2011.*



*Figure 38. Implement shed built in 2018.*

13.5.4 Memorandum of Agreement (if adverse effect)

N/A

## 13.6 TAB F – BIOLOGICAL RESOURCES

### 13.6.1 PNDI Receipt

Please see the six-page 8/11/24 search results summary from the PNDI (*Figure 40*).

Pennsylvania Department of Conservation and Natural Resources

Project Search ID: PNDI-820476

PNDI Receipt: project\_receipt\_ziegler\_blue\_mountain\_gam\_820476\_FINAL\_1.pdf

---

### 1. PROJECT INFORMATION

Project Name: Ziegler Blue Mountain Game Farm 256 kW Ground-Mount Grid-Tied Solar Photovoltaic Project  
Date of Review: 8/11/2024 05:01:09 PM  
Project Category: Energy Storage, Production, and Transfer, Energy Production (generation), Solar Power Facility -- new or expansion  
Project Area: 0.21 acres  
County(s): Lebanon  
Township/Municipality(s): NORTH ANNVILLE TOWNSHIP  
ZIP Code:  
Quadrangle Name(s): INDIANTOWN GAP  
Watersheds HUC 8: Lower Susquehanna-Swataara  
Watersheds HUC 12: Reeds Run-Swataara Creek  
Decimal Degrees: 40.380136, -76.550479  
Degrees Minutes Seconds: 40° 22' 48.4900" N, 76° 33' 1.7259" 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	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Page 1 of 6





Pennsylvania Department of Conservation and Natural Resources

Project Search ID: PNDI-820476

PNDI Receipt: project\_receipt\_ziegler\_blue\_mountain\_gam\_820476\_FINAL\_1.pdf

### Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic



-  Buffered Project Boundary
-  Project Boundary

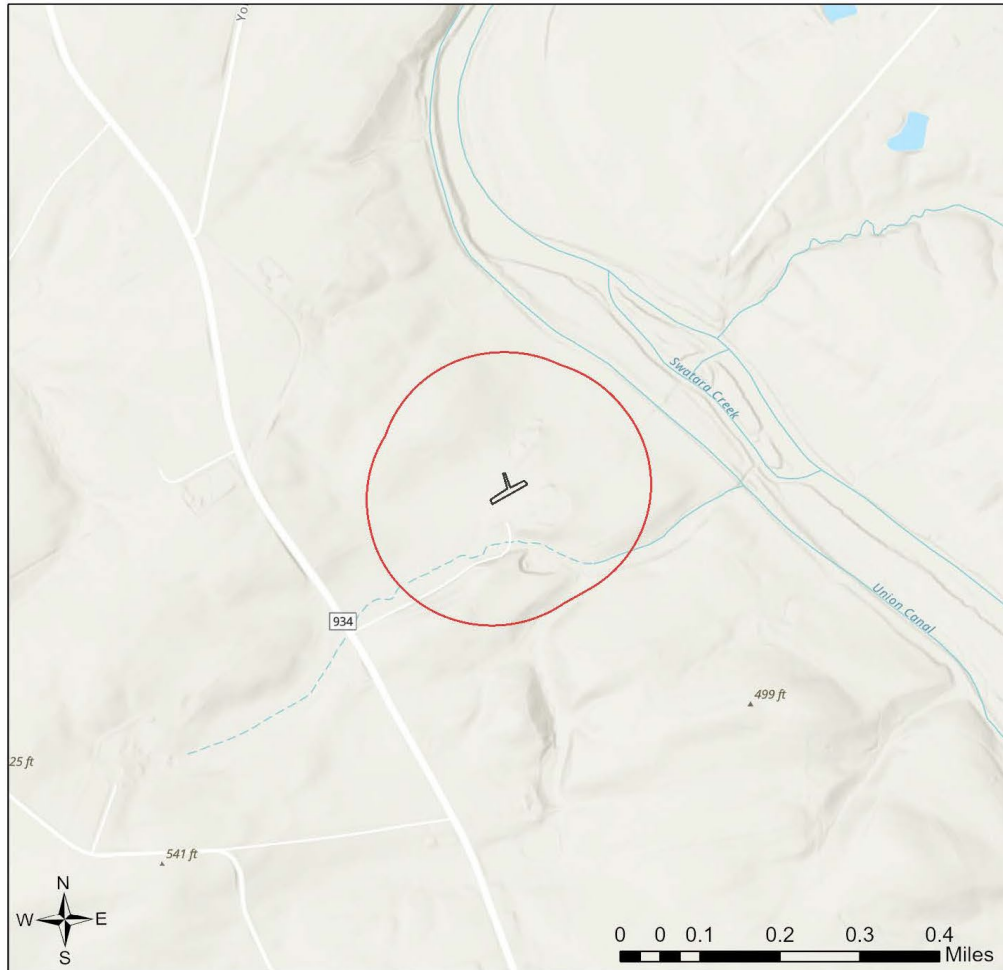




Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Pennsylvania Department of Conservation and Natural Resources  
PNDI Receipt: project\_receipt\_ziegler\_blue\_mountain\_gam\_820476\_FINAL\_1.pdf

Project Search ID: PNDI-820476

### Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic



-  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



Pennsylvania Department of Conservation and Natural Resources Project Search ID: PNDI-820476  
PNDI Receipt: project\_receipt\_ziegler\_blue\_mountain\_gam\_820476\_FINAL\_1.pdf

### 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.

Q2: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: No forests, woodlots or trees will be affected by the project.

Q3: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

### 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:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

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

##### RESPONSE:

Pennsylvania Department of Conservation and Natural Resources

Project Search ID: PNDI-820476

PNDI Receipt: project\_receipt\_ziegler\_blue\_mountain\_gam\_820476\_FINAL\_1.pdf

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

## WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload\* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).

\*If information was requested by USFWS, applicants must email, or mail, project information to [IR1\\_ESPenn@fws.gov](mailto:IR1_ESPenn@fws.gov) to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:

\_\_\_ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

\_\_\_ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

\_\_\_ SIGNED copy of a Final Project Environmental Review Receipt

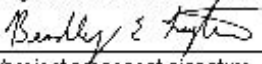
The inclusion of the following information may expedite the review process.

\_\_\_ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

\_\_\_ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist); if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

## 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>.

Pennsylvania Department of Conservation and Natural Resources		Project Search ID: PNDI-820476	
PNDI Receipt: project_receipt_ziegler_blue_mountain_gam_820476_FINAL_1.pdf			
<b>5. ADDITIONAL INFORMATION</b>			
<p>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.</p> <p>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 (<a href="http://www.naturalheritage.state.pa.us">www.naturalheritage.state.pa.us</a>). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.</p>			
<b>6. AGENCY CONTACT INFORMATION</b>			
<p>PA Department of Conservation and Natural Resources Bureau of Forestry, Ecological Services Section 400 Market Street, PO Box 8552 Harrisburg, PA 17105-8552 Email: <a href="mailto:RA-HeritageReview@pa.gov">RA-HeritageReview@pa.gov</a></p> <p>PA Fish and Boat Commission Division of Environmental Services 595 E. Rolling Ridge Dr., Bellefonte, PA 16823 Email: <a href="mailto:RA-FBPAC.ENVOTIFY@pa.gov">RA-FBPAC.ENVOTIFY@pa.gov</a></p>		<p>U.S. Fish and Wildlife Service Pennsylvania Field Office Endangered Species Section 110 Radnor Rd; Suite 101 State College, PA 16801 Email: <a href="mailto:JB1_ESPenn@fws.gov">JB1_ESPenn@fws.gov</a> NO Faxes Please</p> <p>PA Game Commission Bureau of Wildlife Management Division of Environmental Review 2001 Elmerton Avenue, Harrisburg, PA 17110-9797 Email: <a href="mailto:RA-PGC_PNDI@pa.gov">RA-PGC_PNDI@pa.gov</a> NO Faxes Please</p>	
<b>7. PROJECT CONTACT INFORMATION</b>			
Bradley Edward Layton PNDI PILE			
Name: _____			
Company/Business Name: Human Powered Future PLLC _____			
Address: 2205 Mission Ave _____			
City, State, Zip: Missoula, MT 59802 _____			
Phone: (406) 203-2365 _____ Fax: ( ) _____			
Email: <a href="mailto:bradley.layton@humanpoweredfuture.com">bradley.layton@humanpoweredfuture.com</a> _____			
<b>8. CERTIFICATION</b>			
<p>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.</p>			
		August 11, 2024	
applicant/project proponent signature		date	



Page 6 of 6

Figure 39. Pennsylvania Department of Conservation and Natural Resources PNDI-820476 search result.



### 13.6.2 USFWS Species List – continued from 4.1.4 FWS via IPaC

This search for threatened, endangered, proposed and candidate species may be found in the following 15-page report prepared Aug 12, 2024: “2024-0128788 Ziegler Species List\_ Pennsylvania Ecological Services Field Office” (Figure 41).

	<b>United States Department of the Interior</b> <b>FISH AND WILDLIFE SERVICE</b> Pennsylvania Ecological Services Field Office 110 Radnor Road Suite 101 State College, PA 16801-7987 Phone: (814) 234-4090 Fax: (814) 234-0748	
In Reply Refer To: Project Code: 2024-0128788 Project Name: Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project	08/12/2024 01:59:25 UTC	
Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project		
To Whom It May Concern:		
<p>The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 <i>et seq.</i>).</p> <p>New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.</p> <p>The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 <i>et seq.</i>), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.</p> <p>A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))</p>		

Project code: 2024-0128788

08/12/2024 01:59:25 UTC

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

2 of 15



Project code: 2024-0128788

08/12/2024 01:59:25 UTC

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

## OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Pennsylvania Ecological Services Field Office**  
110 Radnor Road Suite 101  
State College, PA 16801-7987  
(814) 234-4090

3 of 15

Project code: 2024-0128788

08/12/2024 01:59:25 UTC

## PROJECT SUMMARY

Project Code: 2024-0128788

Project Name: Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project

Project Type: Federal Grant / Loan Related

Project Description: This Project, to begin after the 2024 nesting season, and to be complete prior to the 2025 nesting season is seeking USDA funding. ZBMGF, the Farm in rural Pennsylvania, wholly owned and operated by Sheila and Nelson Ziegler, is seeking to install a 256-kWDC ground-mount solar photovoltaic system located at 1660 N State Route 934, Annville, Pennsylvania 17003-8535, an agriculturally zoned area in North Annville Township of Lebanon County. The Project consists of the following components:

- kW of system: 256-kWDC
- Number of panels: 528 Q.PEAK DUO XL-10.3/BFG 485 W
- Number of Invertors: 16 SE 11400-H
- Connection point for the grid: Met-Ed service pole
- Method of installation to connect the array and interconnection: new 1,200-A AC disconnect
- New or existing power pole to connect to grid: existing
- Type of ground mount installation: Solar Foundations USA 2 ½" sch-40 helical pile
- Type of ground cover under the array: weed-block fabric followed by topsoil and native grasses
- Fencing: TBD
- Electrical building size: 20' × 25'
- Electrical building description: Existing utility building on property
- Project acreage:
  - trench path:  $563' \times 0.7' = 375 \text{ ft}^2$
  - ground cover: 11,716 ft<sup>2</sup> (0.269 acres)
  - ground contouring: none – proposed site already well-contoured
  - ground excavation: trenching + helical pile driving (375 ft<sup>2</sup> + 11,716 ft<sup>2</sup>)
  - graveled areas: none
  - inverters: mounted on N side of N arrays  $16 \times 1.5' \times 0.5' = 12 \text{ ft}^2$
  - utility line: nearest existing utility pole on property adjacent to State Route 934 approximately 1,200' from array 0 ft<sup>2</sup>
  - connection points: at inverter 12 ft<sup>2</sup>
  - array: 11,716 ft<sup>2</sup>
- Acreage of actual ground disturbance for ground mount: 0.269 ac
- Acreage of actual ground disturbance for trench (depth and width of corridor): 0.093 ac 36" deep × 8" wide
- demolition: none
- utilities: installation of new 1,200-A AC disconnect to utility

4 of 15

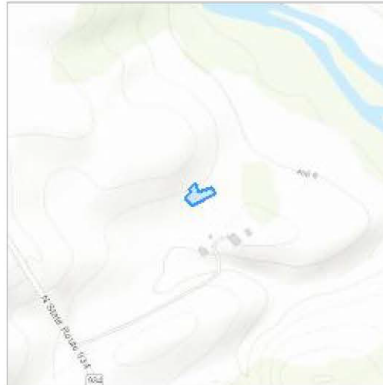
Project code: 2024-0128788

08/12/2024 01:59:25 UTC

- stormwater management: weed fabric, topsoil and reseeding of area under arrays

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.380584150000004,-76.55098939676573,14z>



Counties: Lebanon County, Pennsylvania

Project code: 2024-0128788

08/12/2024 01:59:25 UTC

## ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Project code: 2024-0128788

08/12/2024 01:59:25 UTC

## MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is <b>final</b> critical habitat for this species. Your location does not overlap the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/5949">https://ecos.fws.gov/ecp/species/5949</a>	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10515">https://ecos.fws.gov/ecp/species/10515</a>	Proposed Endangered

## REPTILES

NAME	STATUS
Bog Turtle <i>Glyptemys muhlenbergii</i> Population: Wherever found, except GA, NC, SC, TN, VA No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/6962">https://ecos.fws.gov/ecp/species/6962</a>	Threatened

## INSECTS

NAME	STATUS
Eastern Regal Fritillary <i>Argynnis idalia idalia</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10981">https://ecos.fws.gov/ecp/species/10981</a>	Proposed Endangered
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

7 of 15



Project code: 2024-0128788

08/12/2024 01:59:25 UTC

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act<sup>1</sup> and the Migratory Bird Treaty Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats<sup>3</sup>, should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Bald and Golden Eagle Protection Act](#) of 1940.
2. The [Migratory Birds Treaty Act](#) of 1918.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Sep 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Breeds elsewhere

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

8 of 15

Project code: 2024-0128788

08/12/2024 01:59:25 UTC

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

### Breeding Season (■)

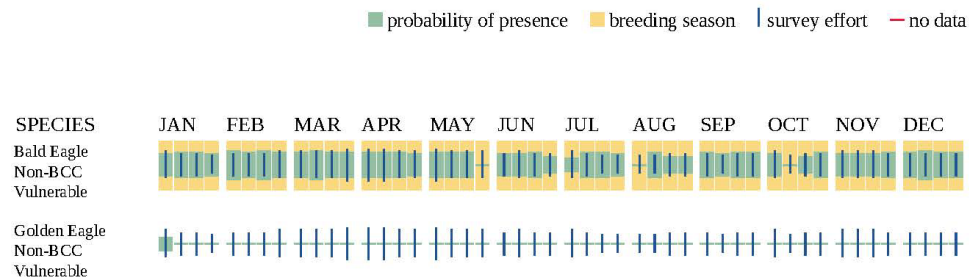
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

**Survey Effort (1)**

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Project code: 2024-0128788

08/12/2024 01:59:25 UTC

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats<sup>3</sup> should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "[Supplemental Information on Migratory Birds and Eagles](#)".

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
<b>Bald Eagle <i>Haliaeetus leucocephalus</i></b> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Sep 1 to Aug 31
<b>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a>	Breeds May 15 to Oct 10
<b>Black-capped Chickadee <i>Poecile atricapillus praticus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/10645">https://ecos.fws.gov/ecp/species/10645</a>	Breeds Apr 10 to Jul 31
<b>Bobolink <i>Dolichonyx oryzivorus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9454">https://ecos.fws.gov/ecp/species/9454</a>	Breeds May 20 to Jul 31
<b>Canada Warbler <i>Cardellina canadensis</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9643">https://ecos.fws.gov/ecp/species/9643</a>	Breeds May 20 to Aug 10
<b>Cerulean Warbler <i>Setophaga cerulea</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/2974">https://ecos.fws.gov/ecp/species/2974</a>	Breeds Apr 27 to Jul 20

10 of 15

Project code: 2024-0128788

08/12/2024 01:59:25 UTC

NAME	BREEDING SEASON
<b>Chimney Swift <i>Chaetura pelagica</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9406">https://ecos.fws.gov/ecp/species/9406</a>	Breeds Mar 15 to Aug 25
<b>Chuck-will's-widow <i>Antrostomus carolinensis</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9604">https://ecos.fws.gov/ecp/species/9604</a>	Breeds May 10 to Jul 10
<b>Eastern Whip-poor-will <i>Antrostomus vociferus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/10678">https://ecos.fws.gov/ecp/species/10678</a>	Breeds May 1 to Aug 20
<b>Golden Eagle <i>Aquila chrysaetos</i></b> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Breeds elsewhere
<b>Golden-winged Warbler <i>Vermivora chrysoptera</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8745">https://ecos.fws.gov/ecp/species/8745</a>	Breeds May 1 to Jul 20
<b>Kentucky Warbler <i>Geothlypis formosa</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9443">https://ecos.fws.gov/ecp/species/9443</a>	Breeds Apr 20 to Aug 20
<b>Northern Saw-whet Owl <i>Aegolius acadicus</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9101">https://ecos.fws.gov/ecp/species/9101</a>	Breeds Mar 1 to Jul 31
<b>Prairie Warbler <i>Setophaga discolor</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9513">https://ecos.fws.gov/ecp/species/9513</a>	Breeds May 1 to Jul 31
<b>Prothonotary Warbler <i>Protonotaria citrea</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9439">https://ecos.fws.gov/ecp/species/9439</a>	Breeds Apr 1 to Jul 31
<b>Red-headed Woodpecker <i>Melanerpes erythrocephalus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9398">https://ecos.fws.gov/ecp/species/9398</a>	Breeds May 10 to Sep 10

11 of 15

08/12/2024 01:59:25 UTC

NAME	BREEDING SEASON
<b>Rusty Blackbird</b> <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9478">https://ecos.fws.gov/ecp/species/9478</a>	Breeds elsewhere
<b>Wood Thrush</b> <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9431">https://ecos.fws.gov/ecp/species/9431</a>	Breeds May 10 to Aug 31

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

### Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

### Breeding Season (🟡)

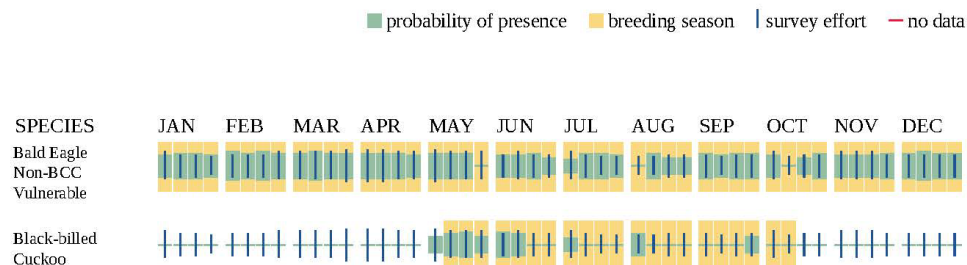
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

**Survey Effort (l)**

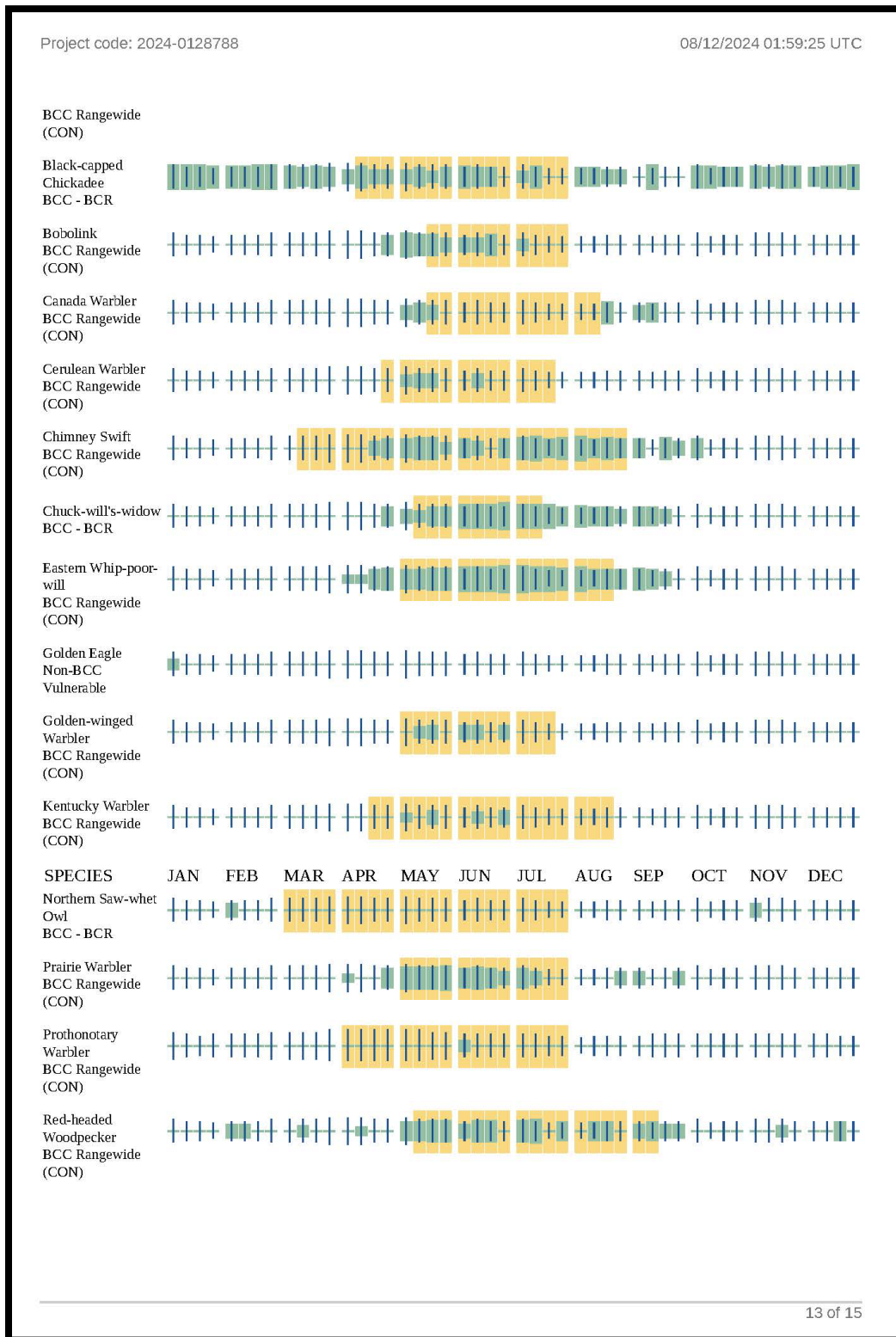
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.

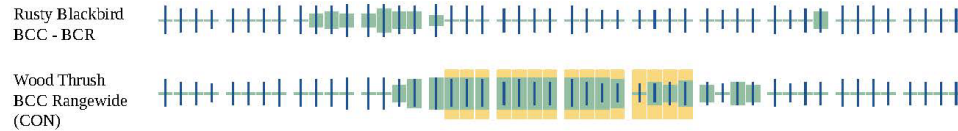






Project code: 2024-0128788

08/12/2024 01:59:25 UTC



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

## WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

Project code: 2024-012878808/12/2024 01:59:25 UTC

**IPAC USER CONTACT INFORMATION**  
Agency: Private Entity  
Name: Bradley Layton  
Address: 2206 Missoula Ave  
City: Missoula  
State: MT  
Zip: 59802  
Email layton.bradley@gmail.com  
Phone: 4062032365

You have indicated that your project falls under or receives funding through the following special project authorities:

- INFLATION REDUCTION ACT (IRA) (OTHER)

15 of 15

**Figure 40.** United States Department of the Interior Fish and Wildlife Service Pennsylvania Ecological Field Office Project Code 2024-0128788 generated from IPaC website on Aug 11, 2024 for Ziegler Project.

### 13.6.3 Bog Turtle *Glyptemys muhlenbergii* habitat near Project

By using the US FWS online map for the Bog Turtle,<sup>37</sup> it appears that the nearest habitat is a small (~1 acre) location just north of the driveway just south of the ZBMGF (Figure 42, Figure 43).

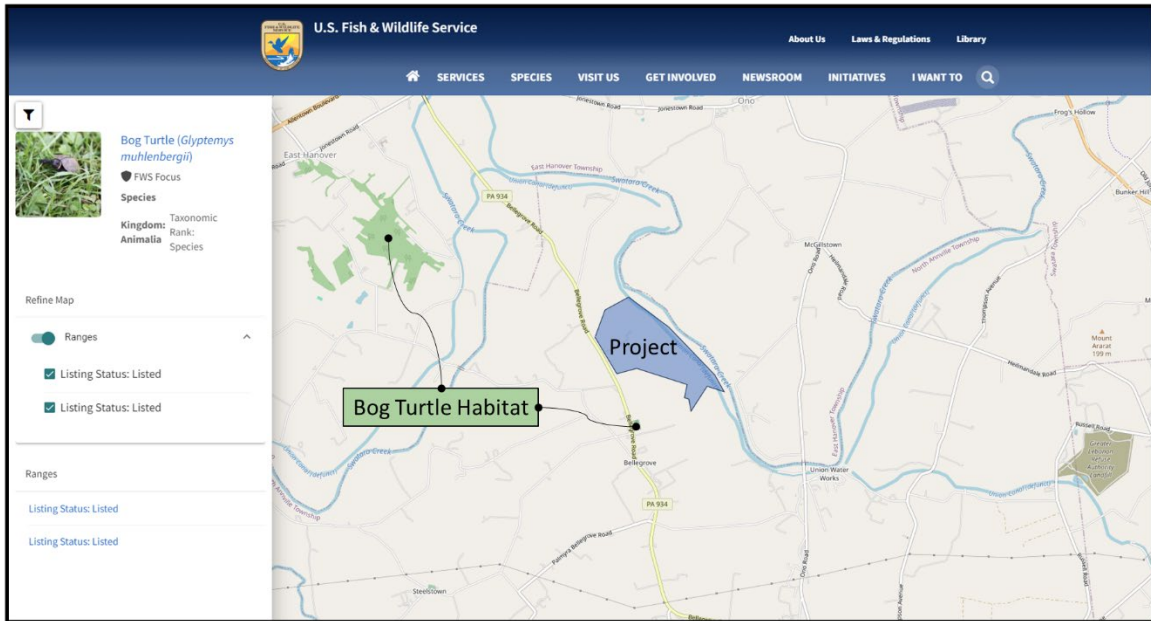


Figure 41. The nearest Bog Turtle habitats are ~1/4 mile south and ~1/2 mile west of the Project.

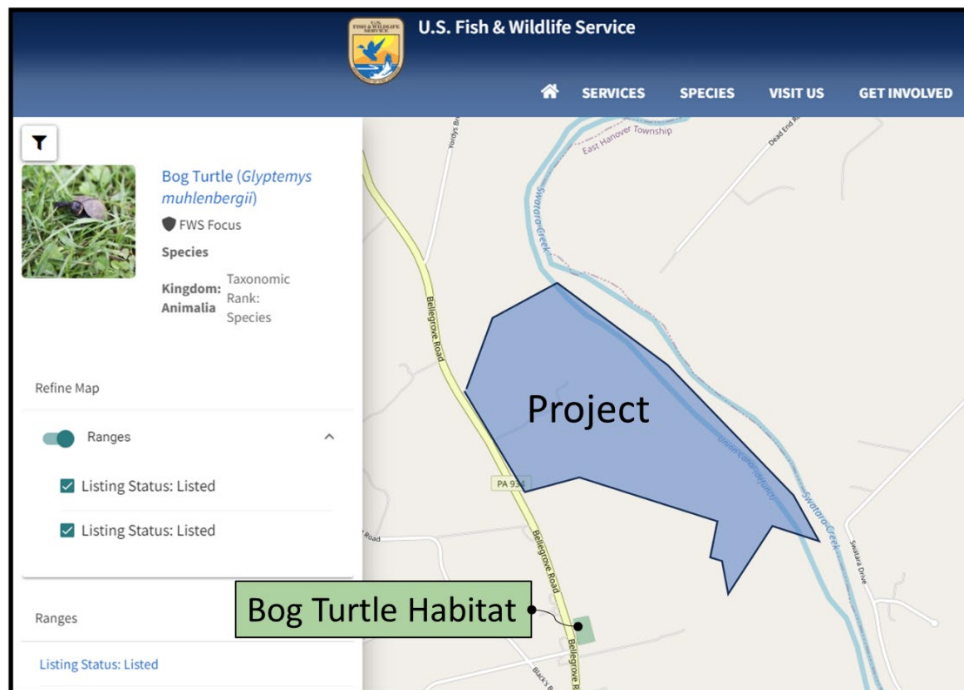
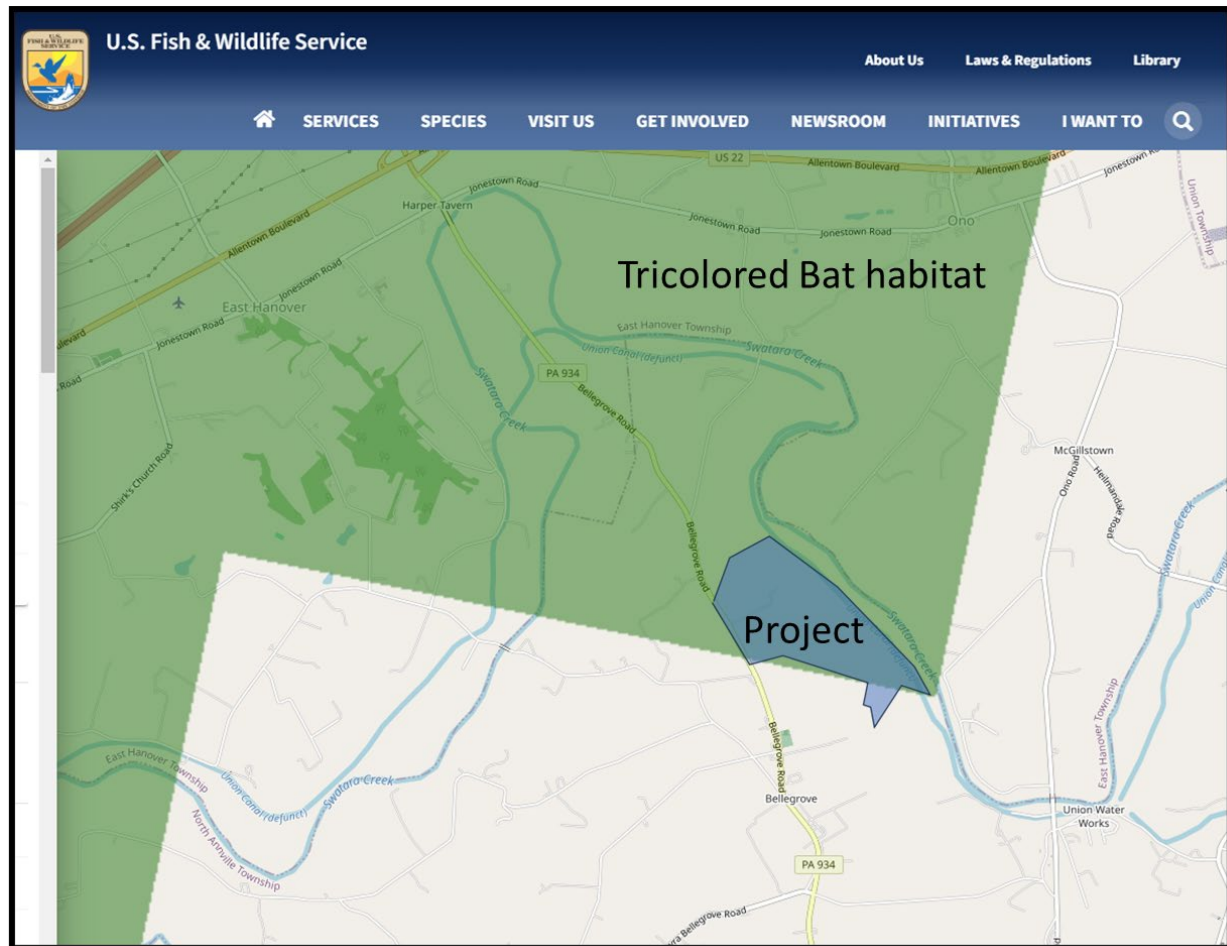


Figure 42. The nearest Bog Turtle habitat is just north of the driveway that is just south of the ZBMGF driveway.

<sup>37</sup> <https://www.fws.gov/species/bog-turtle-glyptemys-muhlenbergii/map>

#### 13.6.4 Tricolored Bat – *Permyotis subflavus*

An online study of the potential impingement of the Tricolored bat habitat with the Project indicates that the Project is within the Tricolored Bat's habitat ( *Figure 44*).



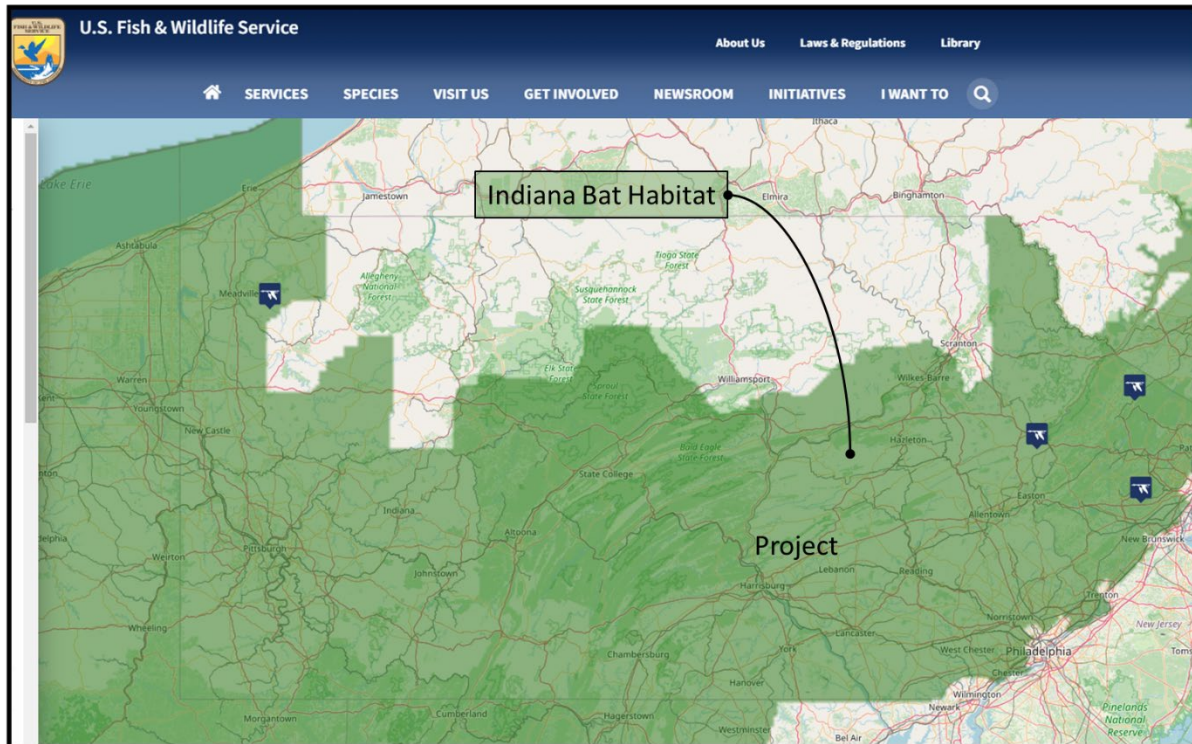
*Figure 43.* The Project is within the Tricolored Bat's habitat.

However, as no demolition or deforestation will be performed, the Tricolored Bat's habitat is expected to be unaffected by the Project.



### 13.6.5 Indiana Bat – *Myotis septentrionalis*



A habitat search for the Indiana Bat on fws.gov revealed that all of southern Pennsylvania as well as western Pennsylvania serves as Indiana Bat habitat (*Figure 45*).



*Figure 44.* The Project is well within the broad habitat of the Indiana Bat.

### 13.6.6 Northern Long-Eared Bat Consistency Letter

Under the DOI FWS PA Ecological Services Field Office Project 2024-0128788, I generated a preliminary assessment that the Project will have “No Effect” on the Northern Long-Eared Bat (*Figure 46*).

	<b>United States Department of the Interior</b>	
<b>FISH AND WILDLIFE SERVICE</b>		
Pennsylvania Ecological Services Field Office 110 Radnor Road Suite 101 State College, PA 16801-7987 Phone: (814) 234-4090 Fax: (814) 234-0748		
 In Reply Refer To: Project code: 2024-0128788 Project Name: Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project		09/11/2024 16:39:25 UTC
 Federal Nexus: yes Federal Action Agency (if applicable): Department of Agriculture		
 <b>Subject:</b> Record of project representative's no effect determination for 'Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project'		
 Dear Bradley Layton:		
<p>This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on September 11, 2024, for 'Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project' (here forward, Project). This project has been assigned Project Code 2024-0128788 and all future correspondence should clearly reference this number. <b>Please carefully review this letter.</b></p>		
<b>Ensuring Accurate Determinations When Using IPaC</b>		
<p>The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.</p>		
<p>Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. <b>Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.</b></p>		
<b>Determination for the Northern Long-Eared Bat</b>		
<p>Based upon your IPaC submission and a standing analysis, your project has reached the determination of “No Effect” on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either</p>		

Project code: 2024-0128788

IPaC Record Locator: 543-149351225

09/11/2024 16:39:25 UTC

positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

#### **Other Species and Critical Habitat that May be Present in the Action Area**

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Bog Turtle *Glyptemys muhlenbergii* Threatened
- Eastern Regal Fritillary *Argynnis idalia idalia* Proposed Endangered
- Indiana Bat *Myotis sodalis* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

#### **Next Steps**

Based upon your IPaC submission, your project has reached the determination of "No Effect" on the northern long-eared bat. If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the Pennsylvania Ecological Services Field Office and reference Project Code 2024-0128788 associated with this Project.

DKey Version Publish Date: 07/09/2024

2 of 8

Project code: 2024-0128788

IPaC Record Locator: 543-149351225

09/11/2024 16:39:25 UTC

### Action Description

You provided to IPaC the following name and description for the subject Action.

#### 1. Name

Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project

#### 2. Description

The following description was provided for the project 'Ziegler Blue Mountain Game Farm 256-kW Ground-Mount Grid-Tied Solar Photovoltaic Project':

This Project, to begin after the 2024 nesting season, and to be complete prior to the 2025 nesting season is seeking USDA funding.

ZBMGF, the Farm in rural Pennsylvania, wholly owned and operated by Sheila and Nelson Ziegler, is seeking to install a 256-kWDC ground-mount solar photovoltaic system located at 1660 N State Route 934, Annville, Pennsylvania 17003-8535, an agriculturally zoned area in North Annville Township of Lebanon County. The Project consists of the following components:

- kW of system: 256-kWDC
- Number of panels: 528 Q.PEAK DUO XL-10.3/BFG 485 W
- Number of Invertors: 16 SE 11400-H
- Connection point for the grid: Met-Ed service pole
- Method of installation to connect the array and interconnection: new 1,200-A AC disconnect
- New or existing power pole to connect to grid: existing
- Type of ground mount installation: Solar Foundations USA 2 ½" sch-40 helical pile
- Type of ground cover under the array: weed-block fabric followed by topsoil and native grasses
- Fencing: TBD
- Electrical building size: 20' × 25'
- Electrical building description: Existing utility building on property
- Project acreage:
  - trench path: 563' × 0.7' = 375 ft<sup>2</sup>
  - ground cover: 11,716 ft<sup>2</sup> (0.269 acres)
  - ground contouring: none – proposed site already well-contoured
  - ground excavation: trenching + helical pile driving (375 ft<sup>2</sup> + 11,716 ft<sup>2</sup>)
  - graveled areas: none
  - inverters: mounted on N side of N arrays 16 × 1.5' × 0.5' = 12 ft<sup>2</sup>
  - utility line: nearest existing utility pole on property adjacent to State Route 934 approximately 1,200' from array 0 ft<sup>2</sup>
  - connection points: at inverter 12 ft<sup>2</sup>
  - array: 11,716 ft<sup>2</sup>
- Acreage of actual ground disturbance for ground mount: 0.269 ac
- Acreage of actual ground disturbance for trench (depth and width of corridor): 0.093 ac 36" deep × 8" wide

DKey Version Publish Date: 07/09/2024

3 of 8

Project code: 2024-0128788

IPaC Record Locator: 543-149351225

09/11/2024 16:39:25 UTC

- demolition: none
- utilities: installation of new 1,200-A AC disconnect to utility
- stormwater management: weed fabric, topsoil and reseeding of area under arrays

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.3806087,-76.55094450288462,14z>



DKey Version Publish Date: 07/09/2024

4 of 8



Project code: 2024-0128788

IPaC Record Locator: 543-149351225

09/11/2024 16:39:25 UTC

## DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (*Myotis septentrionalis*). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

## QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

**Note:** Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

No

3. Does any component of the action involve construction or operation of wind turbines?

**Note:** For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

No

DKey Version Publish Date: 07/09/2024

5 of 8

Project code: 2024-0128788

IPaC Record Locator: 543-149351225

09/11/2024 16:39:25 UTC

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

**Note:** This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

No

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

8. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

No

9. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the [effects of any activities](#) that would not occur but for the proposed action.

If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

**Note:** Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of [Effects of the Action](#) can be found here: <https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions>

Yes

DKey Version Publish Date: 07/09/2024

6 of 8

Project code: 2024-0128788

IPaC Record Locator: 543-149351225

09/11/2024 16:39:25 UTC

## PROJECT QUESTIONNAIRE

Will all project activities be completed by November 30, 2024?

No

DKey Version Publish Date: 07/09/2024

7 of 8

**Figure 45. Northern Long-Eared Bat Preliminary Determination – “No Effect”**

### 13.6.7 Monarch Butterfly – *Danux plexippus*

A search for the Monarch Butterfly revealed that the entire continental United States serves as a portion of its vast habitat *Figure 47*.

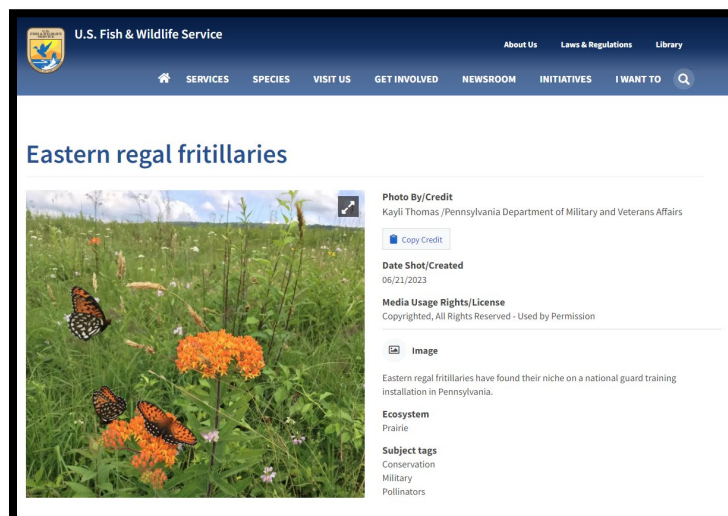


*Figure 46. Monarch habitat.*

As no milkweed was noted during Jeff Graybill's September 3<sup>rd</sup> walkdown, we do not expect the Project to affect Monarch populations. However, milkweed may indeed be a viable option for small-scale agrivoltaics for the ZBMGF Project.

### 13.6.8 Eastern Regal Fritillary – *Argynnis idalia idalia*

Upon searching for the Eastern Regal Fritillary, on fws.gov, only a media page returned (*Figure 48*). No habitat map appears to be available.

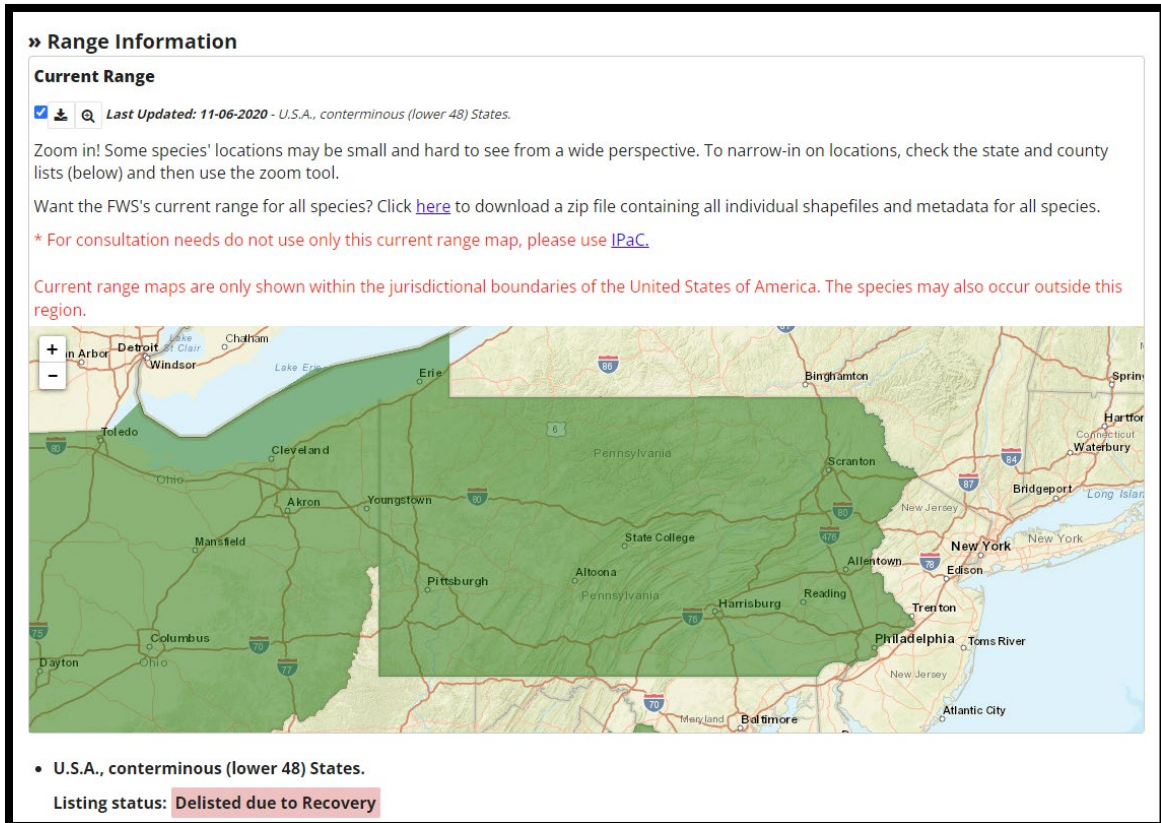


*Figure 47. Photograph of an Eastern Regal Fritillary on a National Guard training installation in Pennsylvania. Eastern regal fritillaries , Kayli Thomas /Pennsylvania Department of Military and Veterans Affairs , Copyrighted, All Rights Reserved - Used by Permission, <https://www.fws.gov/media/eastern-regal-fritillaries>*



### 13.6.9 Bald Eagle Map

By clicking on the URL provided in the body of IPaC 2024-0101479, Report under the Bald Eagle, <https://ecos.fws.gov/ecp/species/1626> I was able to generate a Bald Eagle map, which was last updated 11-06-2020. The map includes the entire state of Pennsylvania, but excludes neighboring states such as New Jersey, New York, Delaware, Maryland, and West Virginia (*Figure 49*).



*Figure 48.* Bald Eagle range map as seen on June 9, 2024 at <https://ecos.fws.gov/ecp/species/1626>.

### 13.6.10 DCNR Conservation Explorer Report

The DCNR Conservation Explorer Report is covered in **PNDI-816289**.

### 13.6.11 DCNR Conservation Explorer Map

Page 2 of the DCNR Conservation Explorer Report included the DCNR Conservation Explorer Map. The Map is shown in *Figure 50*.



**Figure 49.** DCNR Conservation Explorer Map as produced by PNDI-816289.

For the full report, please see 13.6.1 PNDI Receipt on page 90 above.

#### 13.6.12 Important Bird Area Map

I visited <http://www.audubon.org> in search of a tool that would generate an Important Bird Area (IBA) map for Pennsylvania. After failing to find a mapping tool at audubon.org, I performed a broader web search for “map of Audubon important bird areas in Pennsylvania,” which returned the following results:

*Here are some Important Bird Areas (IBAs) in Pennsylvania that have been recognized by the National Audubon Society:*

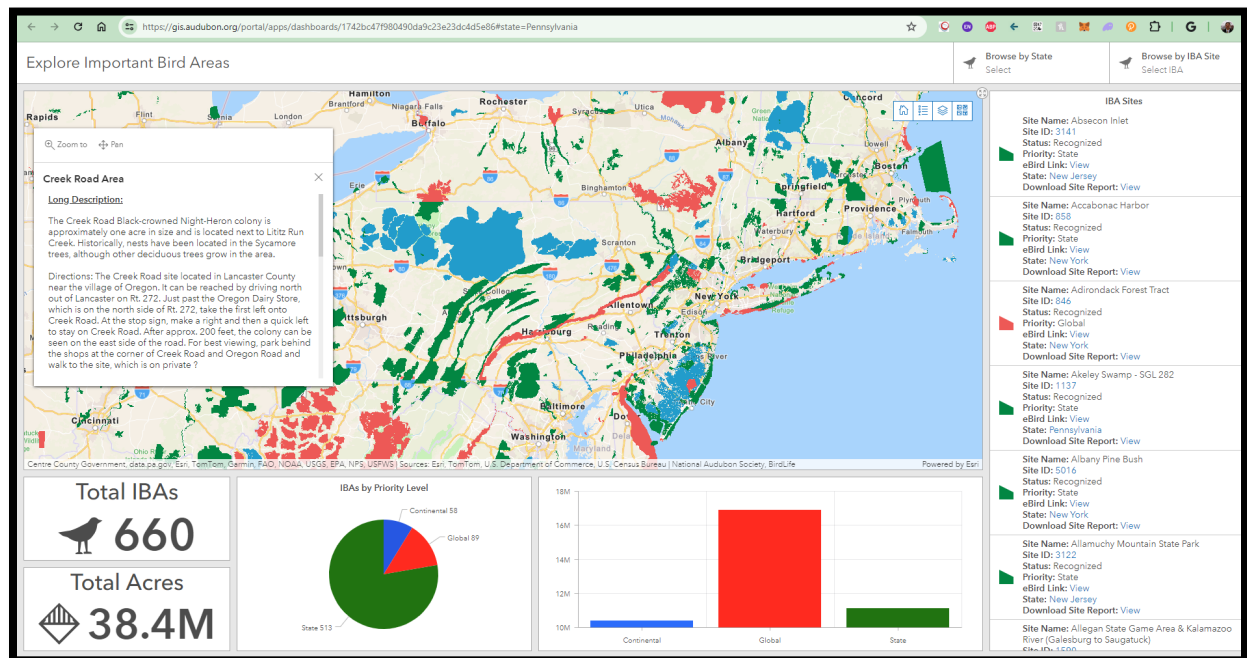
- *Akeley Swamp: Located in Warren*
- *Allegheny Front: Located in Centre, Clearfield, Blair, Cambria, Bedford, and Somerset*
- *Bald Eagle Ridge: Located in Centre, Blair, and Huntingdon*
- *Barrows Heronry & Edward Brucker Sanctuary: Located in Mercer*
- *Black Moshannon State Park & State Forest: Located in Elk, Cameron, Centre, and Clearfield*
- *Blue Marsh Lake: Located in Berks*
- *Buffalo Creek Valley: Located in Butler and Armstrong*
- *Callen Run Research Area: Located in Jefferson*

This general web search then took me to a website, which then took me to the URL<sup>38</sup> that appears to have the required information. For the State of Pennsylvania the following overview was provided:

Overview:

Formed in 1996, Pennsylvania developed the first statewide Important Bird Area (IBA) program in the country. A group of scientific advisors (known as the Ornithological Technical Committee) has identified over 80 IBA sites encompassing over two million acres of Pennsylvania's public and private land. These areas include migratory staging areas, winter roost sites and prime breeding areas for songbirds, wading birds, and other species. Pennsylvania is making an important contribution to the conservation of bird habitat in the western hemisphere. Penn's Woods are critical to many interior forest birds, providing nesting habitat to 17% of the world's Scarlet Tanagers and 9% of the Wood Thrushes. By focusing attention on the most essential and vulnerable areas, the IBA program helps to promote proactive habitat conservation, benefiting birds and biodiversity. Audubon Pennsylvania works with a multitude of partners across the Commonwealth to advance the conservation of Important Bird Areas. For more information on the individual sites, please use the map to the right to navigate to your desired location. See Feature News - and submit your bird observations - on <http://ebird.org/content/pa/news/discover-pennsylvania2019s-important-bird-areas> and <http://pa.audubon.org/iba/faq.html>

On the [gis.audubon.org](https://gis.audubon.org) website, that I identified after a general web search through Google, I was able to access a database identifying 660 IBAs in Pennsylvania (**Figure 51**).

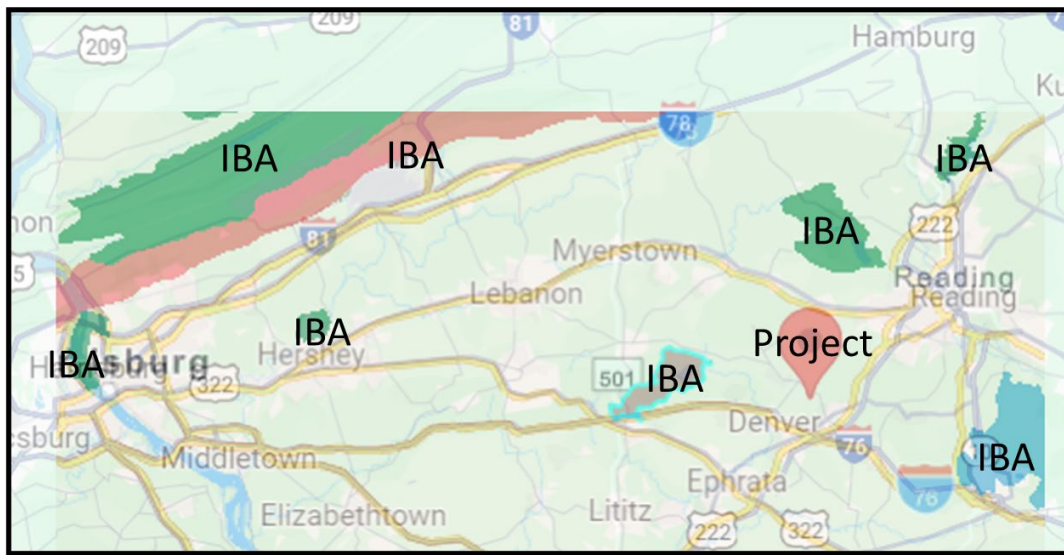


**Figure 50.** A screenshot of the [gis.audubon.org](https://gis.audubon.org) website powered by Esri.

After zooming in, the nearest IBA I was able to find was the Middle Creek Wildlife Management Area. There were a few other IBAs in the general vicinity, but the Project itself is not in an IBA (**Figure 52**).

<sup>38</sup> <https://gis.audubon.org/portal/apps/dashboards/1742bc47f980490da9c23e23dc4d5e86#state=Pennsylvania>





**Figure 51.** By superimposing a Google Map image of the Project over the [gis.audubon.org](https://gis.audubon.org) image of Pennsylvania near the Project, we see that the Project is not in an IBA.

#### 13.6.13 Invasive Species Lists

Please see responses from Extension Officers in 4.4 Invasive Species, page 39.

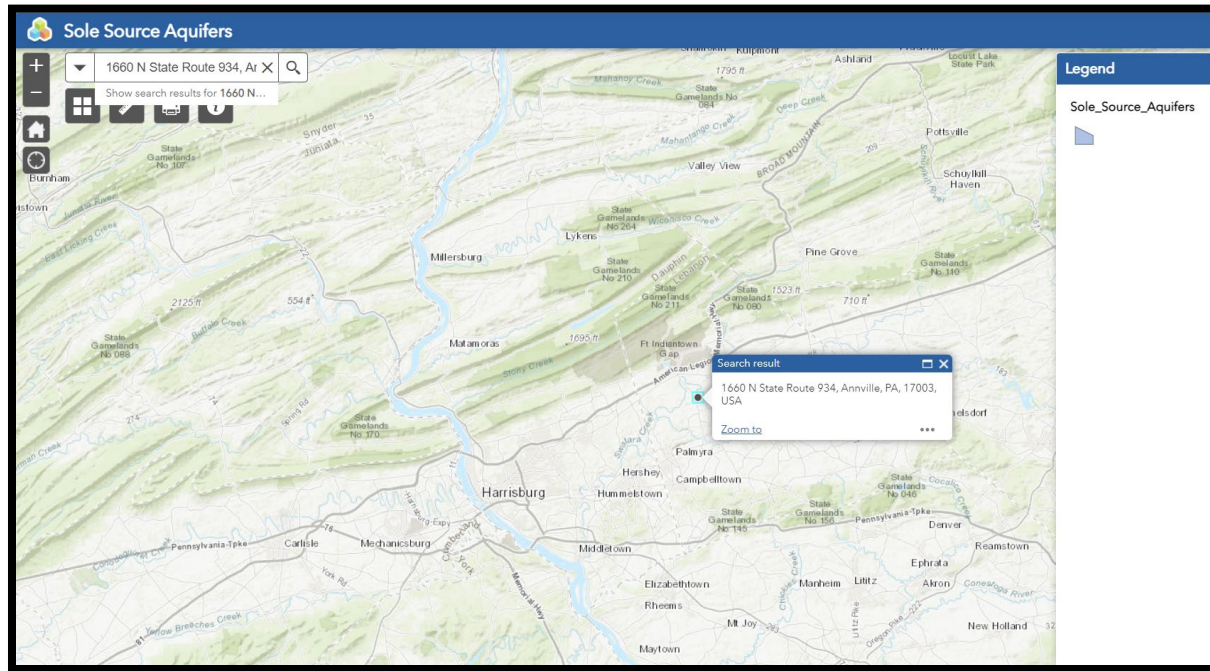
#### 13.6.14 Native Planting/Landscaping Ordinance

As this is private property, there is not a landscaping ordinance to follow per se. Please see **Figure 2** on page 8 for views of what the proposed Project location looks like presently. We anticipate that the site ground cover will look similar once the Project is complete.

## 13.7 TAB G – WATER QUALITY

### 13.7.1 Sole Source Aquifer Map

A Sole Source Aquifer Map reveals that the Project is far-removed from any sole-source aquifers (*Figure 53*).



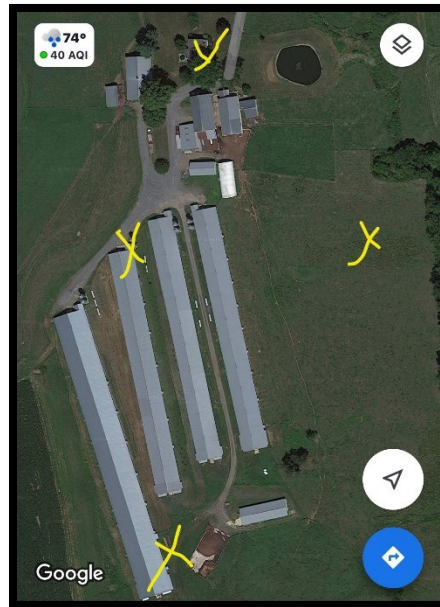
*Figure 52. Sole-Source Aquifer Map places the Project hundreds of miles from nearest sole-source aquifers.*<sup>39</sup>

<sup>39</sup> <https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b>



### 13.7.2 Well Location Map

The property has four wells as marked in *Figure 52*.



*Figure 53.* The property has **four wells** as indicated with the yellow “x’s”.

### 13.7.3 Stormwater Requirements

As seen in 5.0 Wetlands on page 41 and 6.0 Floodplains on page 43, we do not anticipate any stormwater impacts.

### 13.7.4 NPDES Permit

The Project has no discharge.

### 13.7.5 Groundwater Protection Location

The Project, which is to be secured with ground screws, and the footprint of which is to be maintained with the same grasses that are currently growing at the Project location, is not anticipated to impact groundwater. See [TAB N](#) for the results of another recent study for the property.

### 13.7.6 Watershed Plan

Watershed impact, for we anticipate none, is addressed in 5.0 Wetlands on page 41 and 6.0 Floodplains on page 43.

### 13.7.7 Letter on Available Capacity for Public Water and Sewer

As the Project is on private land and does not involve water infrastructure, public water and public sewer capacity are not impacted.

### 13.7.8 Permitting Requirements

As the system does not involve freshwater infrastructure, a separate water permit is not required. Local permitting requirements are given in 2.1.2 Lebanon County Solar Guidelines, page 16 and 2.1.3 North Annville Solar Guidelines, page 17.

## 13.8 TAB H – COASTAL RESOURCES

N/A.

## 13.9 TAB I – SOCIO-ECONOMIC AND ENVIRONMENTAL JUSTICE

### 13.9.1 Minority and Low-Income Populations

Socio-economic Information is included here as 1.2.4.12 Q29 EJ Screen. Maps and Exhibits for Minority and Low-Income Populations are also included in 1.2.4.12 Q29 EJ Screen (*Figure 53*).

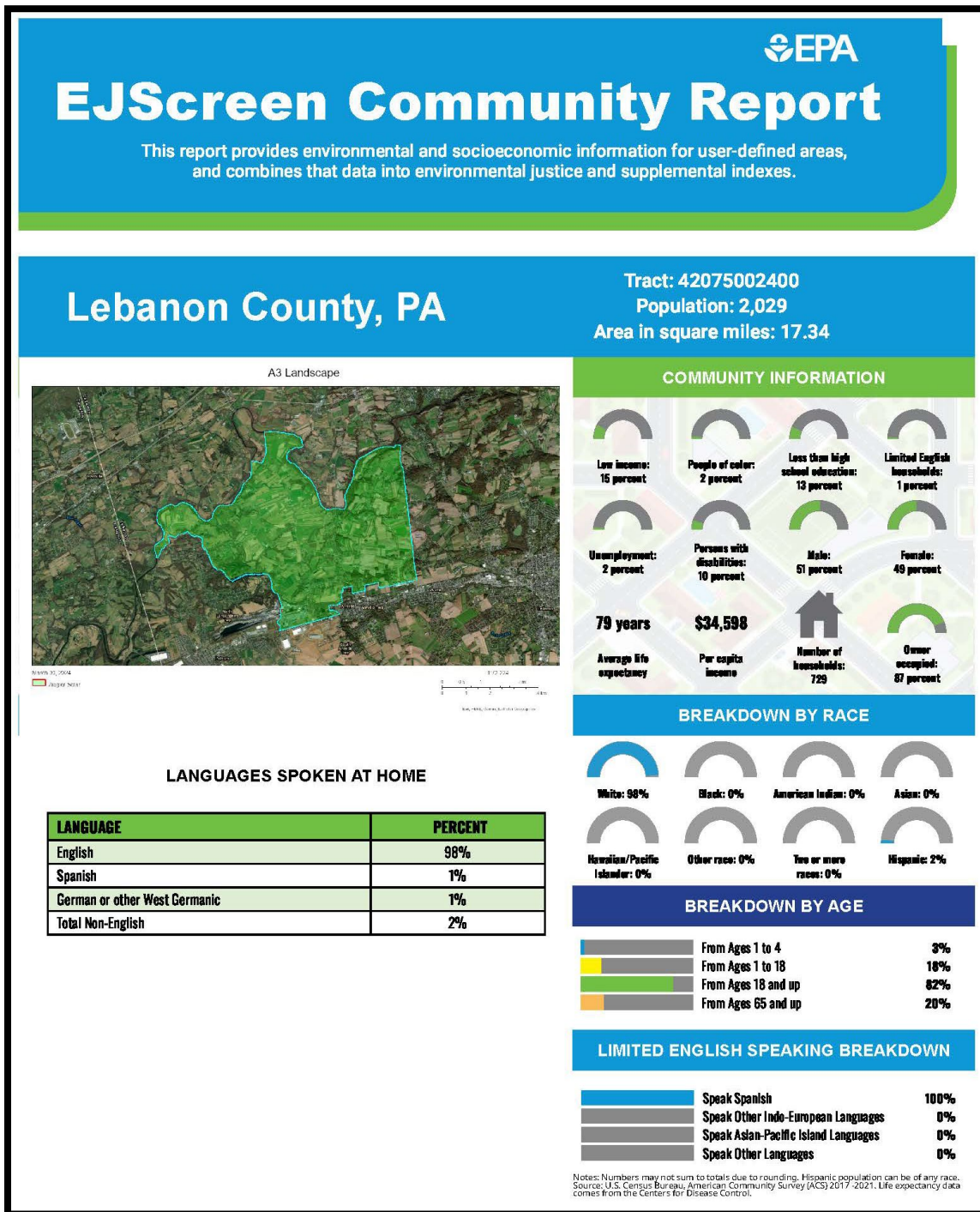
I reviewed the EPA EJScreen website<sup>1</sup> to examine whether or not the Project site is within or near any Environmental Justice sites and determined that it is not (Figure 1).



**Figure 1.** The Project is located in North Annville Township of Lebanon County.

A summary of results follows, indicating that North Annville is on par with the State of Pennsylvania in regard to average statistics on environmental justice.

<sup>1</sup> <https://ejscreen.epa.gov/mapper>



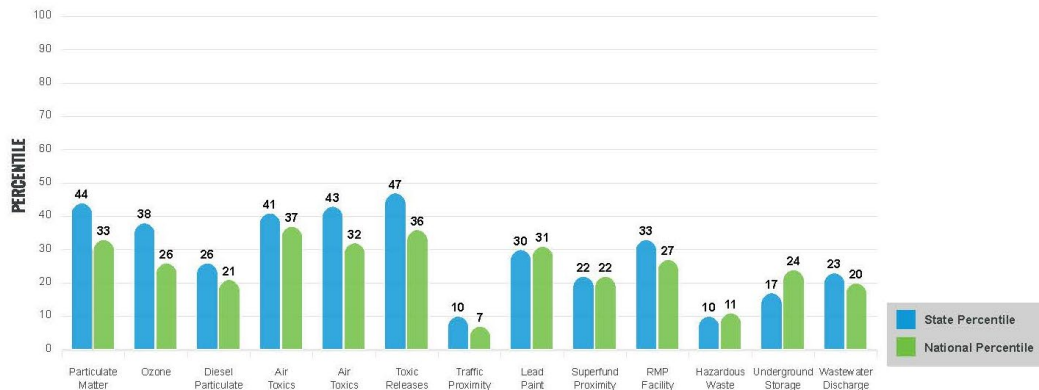
## Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ Indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

### EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

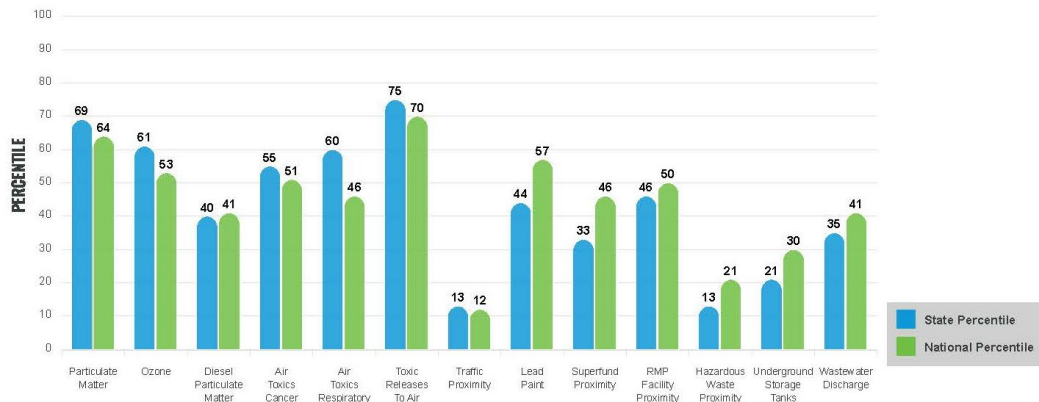
#### EJ INDEXES FOR THE SELECTED LOCATION



### SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

#### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 42075002400



## EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
<b>POLLUTION AND SOURCES</b>					
Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	9.23	8.65	77	8.08	78
Ozone (ppb)	62	61.6	58	61.6	57
Diesel Particulate Matter ( $\mu\text{g}/\text{m}^3$ )	0.182	0.233	35	0.261	40
Air Toxics Cancer Risk* (lifetime risk per million)	30	31	33	28	35
Air Toxics Respiratory HI*	0.3	0.28	33	0.31	31
Toxic Releases to Air	6,300	4,000	88	4,600	88
Traffic Proximity (daily traffic count/distance to road)	5.2	200	12	210	11
Lead Paint (% Pre-1960 Housing)	0.44	0.49	45	0.3	69
Superfund Proximity (site count/km distance)	0.056	0.18	32	0.13	47
RMP Facility Proximity (facility count/km distance)	0.22	0.45	52	0.43	60
Hazardous Waste Proximity (facility count/km distance)	0.1	1.4	12	1.9	20
Underground Storage Tanks (count/km <sup>2</sup> )	0.12	3.6	19	3.9	29
Wastewater Discharge (toxicity-weighted concentration/m distance)	0.00061	1.7	34	22	44
<b>SOCIOECONOMIC INDICATORS</b>					
Demographic Index	9%	26%	14	35%	8
Supplemental Demographic Index	10%	13%	39	14%	35
People of Color	2%	24%	15	39%	7
Low Income	15%	28%	30	31%	28
Unemployment Rate	2%	6%	30	6%	32
Limited English Speaking Households	1%	2%	69	5%	58
Less Than High School Education	13%	9%	77	12%	67
Under Age 5	3%	5%	30	6%	29
Over Age 64	20%	19%	61	17%	67
Low Life Expectancy	19%	20%	50	20%	49

\*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/air/aq/aq-air-toxics-data-update>.

### Sites reporting to EPA within defined area:

Superfund .....	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities .....	0
Water Dischargers .....	17
Air Pollution .....	6
Brownfields .....	0
Toxic Release Inventory .....	2

### Other community features within defined area:

Schools .....	2
Hospitals .....	0
Places of Worship .....	4

### Other environmental data:

Air Non-attainment .....	Yes
Impaired Waters .....	Yes

Selected location contains American Indian Reservation Lands* .....	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community .....	No
Selected location contains an EPA IRA disadvantaged community .....	No

Report for Tract: 42075002400

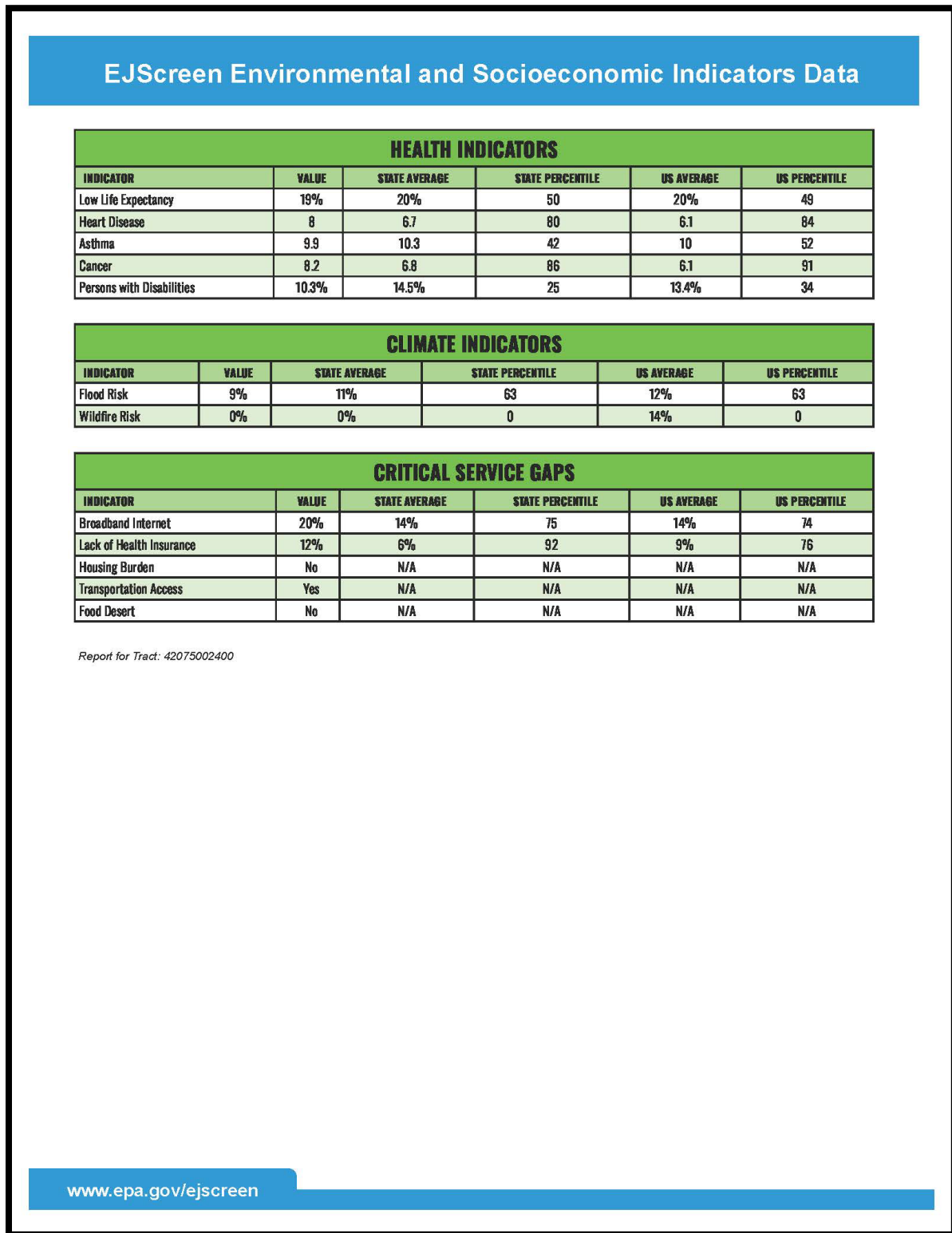


Figure 54. Environmental Justice Screening Results.

#### 13.9.2 Form RD 2006-38

Form RD 2006-38 has been partially completed and awaits the signature of the Certifying Official.

## 13.10 TAB J – AIR QUALITY

### 13.10.1 Tier I Screening

I completed the Gen Conformity Tier I Screening Factors for Small Solar ONLY spreadsheet. Results are summarized in **Table 10** and **Table 11**.

**Table 10.** NOX, VOC and SOX summary for construction equipment.<sup>40</sup>

DIESEL CONSTRUCTION EQUIPMENT													
Equipment Category	Pieces of Equip ment	Weeks Onsite	Total Operat ing Hours	Total Operat ing Hours /week	Tons/y ear NOX	NOX (g/hr operation)		Tons/ye ar VOC	VOC (g/hr operation)		Tons/year SO2	SO2 (g/hr operation)	
						<= 300 HP	> 300 HP		<= 300 HP	> 300 HP		<= 300 HP	> 300 HP
						Skid Steer Loaders	1		1	10		10	0.001
Trenchers	1	1	10	10	0.0028	258	1835	0.00119	19	108	2.54E-05	0.6	2.3
Total					0.0039			0.00137			2.67E-05		
DIESEL COMMERCIAL & INDUSTRIAL EQUIPMENT													
Equipment Category	Pieces of Equip ment	Weeks Onsite	Total Operat ing Hours	Total Operat ing Hours	Tons/y ear NOX	NOX (g/hr operation)		Tons/ye ar VOC	VOC (g/hr operation)		Tons/year SO2	SO2 (g/hr operation)	
						<= 75HP	> 75HP		<= 75HP	> 75HP		<= 75HP	> 75HP
						Air Compressors	2		4	10		80	0.0202
Total					0.0202			0.00131			3.56E-05		
DIESEL OTHER EQUIPMENT													
Equipment Category	Pieces of Equip ment	Weeks Onsite	Total Operat ing Hours	Total Operat ing Hours /week	Tons/y ear NOX	NOX (g/hr operation)		Tons/ye ar VOC	VOC (g/hr operation)		Tons/year SO2	SO2 (g/hr operation)	
						<= 100 HP	> 100 HP		<= 100 HP	> 100 HP		<= 100 HP	> 100 HP
						Total							0
Grand Total					0.0241			0.00269			6.23E-05		

**Table 11.** NOX, VOC, PM2.5, and SOX summary for highway vehicles.<sup>41</sup>

Vehicle Class	Number of Vehicles	Number of Miles (<200 miles per vehicle)	grams emitted per mile driven (g/mi)							
			NOx	tons/year	VOC	tons/year	PM <sub>2.5</sub>	tons/year	SO <sub>2</sub>	tons/year
Combination Long-haul Truck	0	0	13	0	1.3	0	0.7	0	0.02	0
Combination Short-haul Truck	0	0	10	0	0.6	0	0.5	0	0.02	0
Light Commercial Truck	0	0	1.1	0	0.8	0	0.04	0	0.01	0
Passenger Car	0	0	0.7	0	0.7	0	0.04	0	0.01	0
Passenger Truck	1	150	2.3	0.00038	1.7	0.000281	0.06	9.92E-06	0.02	3.31E-06
Single Unit Long-haul Truck	0	0	5.1	0	1	0	0.4	0	0.01	0
Single Unit Short-haul Truck	1	150	5.9	0.00098	1.3	0.000215	0.4	6.61E-05	0.02	3.31E-06
Totals	2	300		0.00136		0.000496		7.61E-05		6.61E-06

To assess air quality per Attainment Designation Greenbook Map, Conformity Evaluation, Permit Requirements, we have used prior Air Quality Study results as seen in 1.2.4.14 Q32 Non-Attainment.

<sup>40</sup> Placeholder

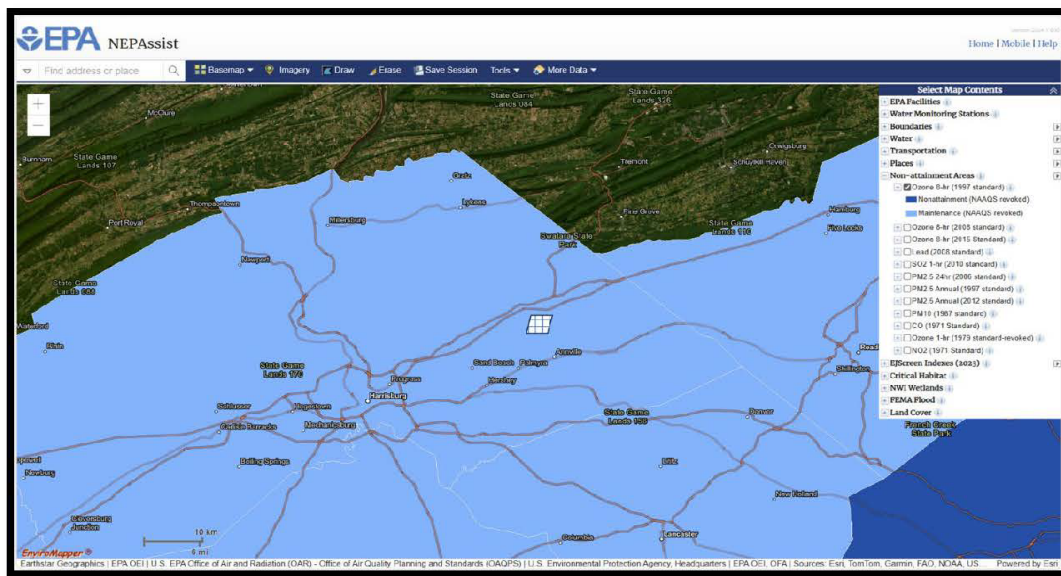
<sup>41</sup> Placeholder

### 13.10.2 Non-Attainment

The non-attainment metrics submitted in the Mar 31, 2024 submission are included in *Figure 54*

#### 1.2.4.13 RD Environmental Information Non-Attainment – Q32

I used the hyperlink<sup>1</sup> provided in the RD 1940-20 form to review all of the Non-Attainment standards provided. Each figure below corresponds to each of the twelve [12] criteria available. The Project location is represented by a parallelogram filled with a square pattern in each figure. Each figure corresponds to a specific standard as described in the respective figure captions.



*Figure 1.2.4.13.1. Ozone 8-hr 1997 Standard. Result: Maintenance.*

<sup>1</sup> <https://www.epa.gov/nepa/nepassist>



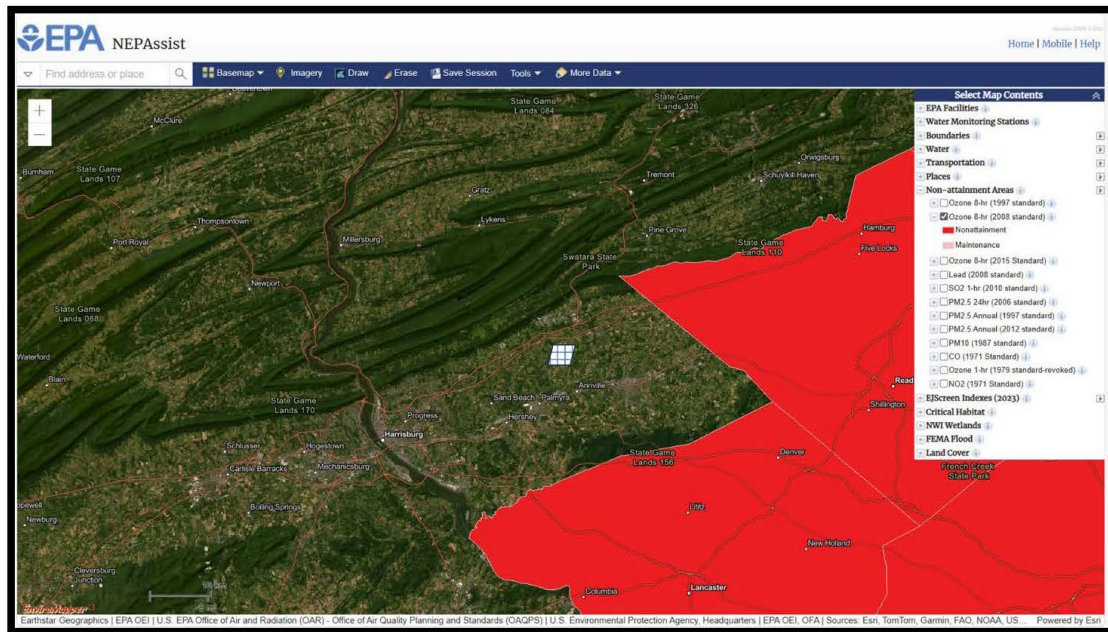


Figure 1.2.4.13.2. Ozone 8-hr 2008 Standard. Result: Attainment.

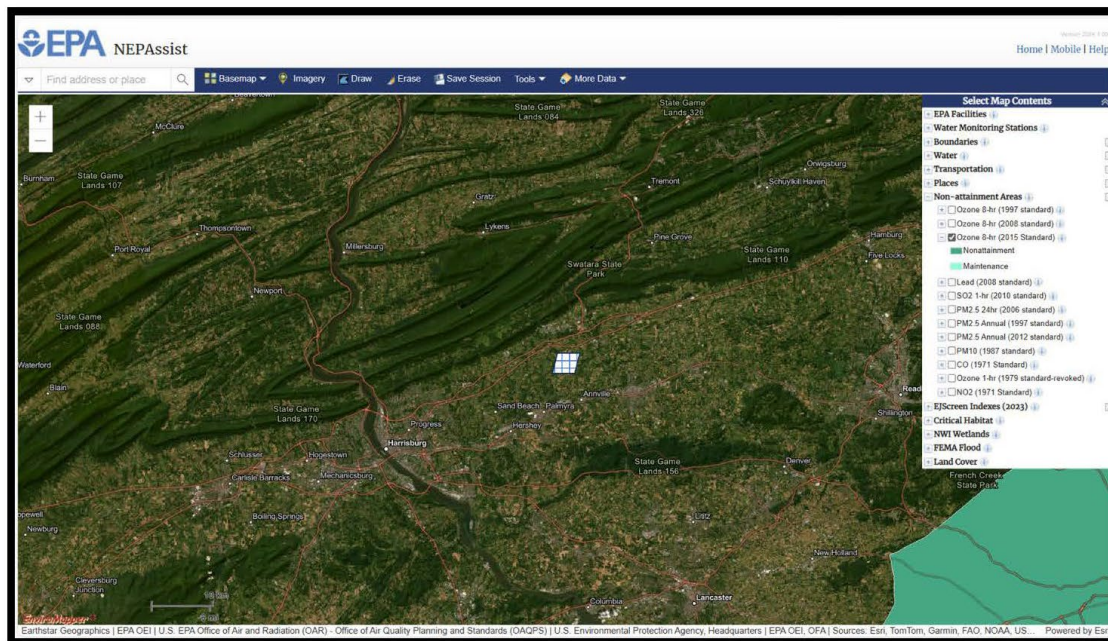


Figure 1.2.4.13.3. Ozone 8-hr 2015 Standard. Result: Attainment.



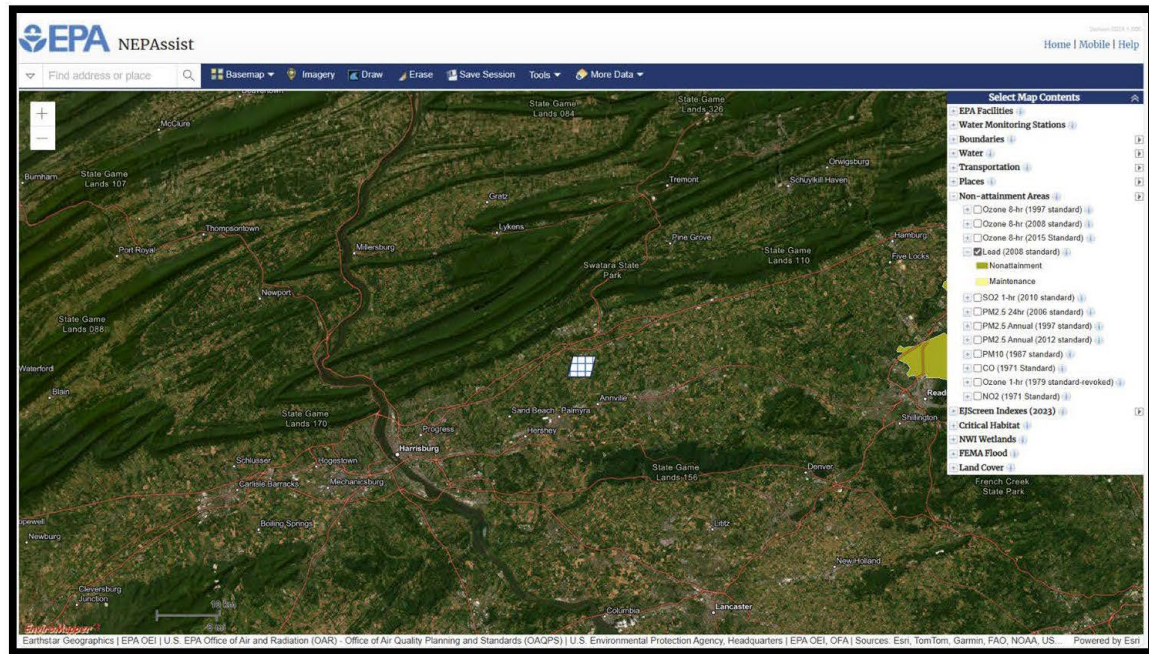


Figure 1.2.4.13.4. Lead 2008 Standard. Result: Attainment.

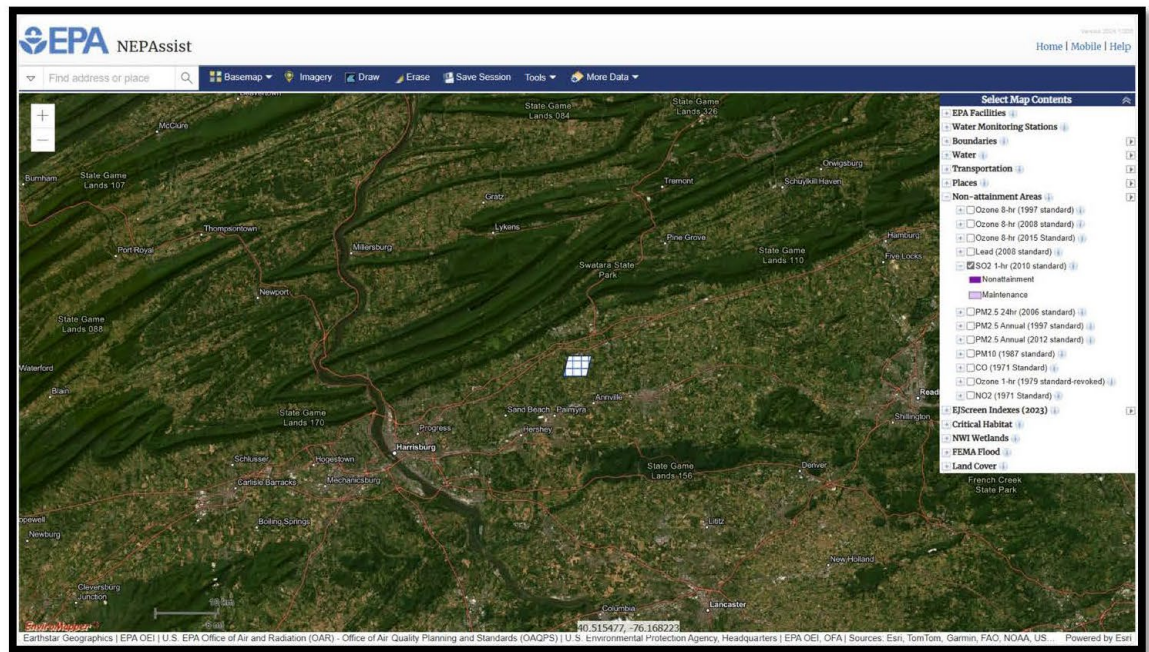


Figure 1.2.4.13.5. SO<sub>2</sub> 1-hr 2010 Standard. Result: Attainment.



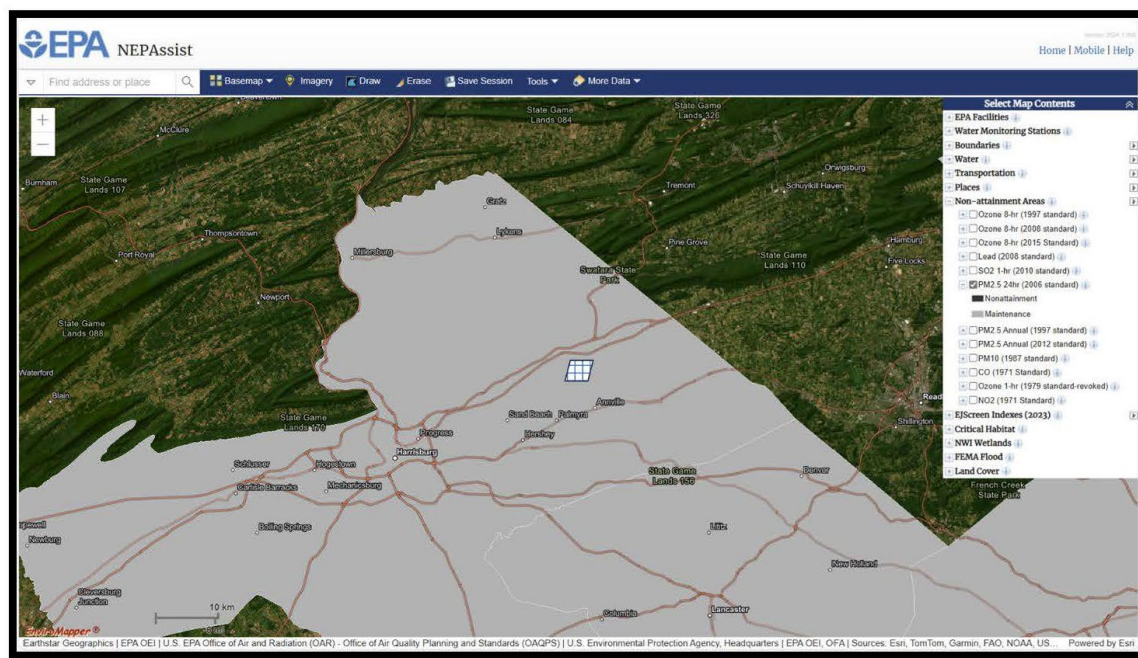


Figure 1.2.4.13.6. PM 2.5 24-hr 2006 Standard. Result: Maintenance.

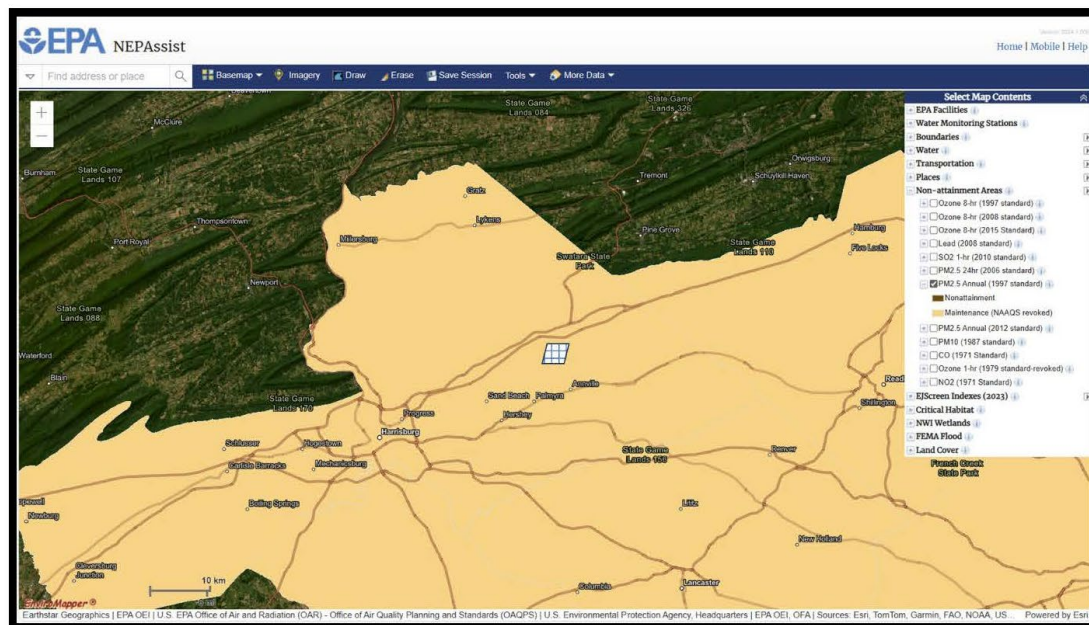


Figure 1.2.4.13.7. PM 2.5 annual 1997 Standard. Result: Maintenance.



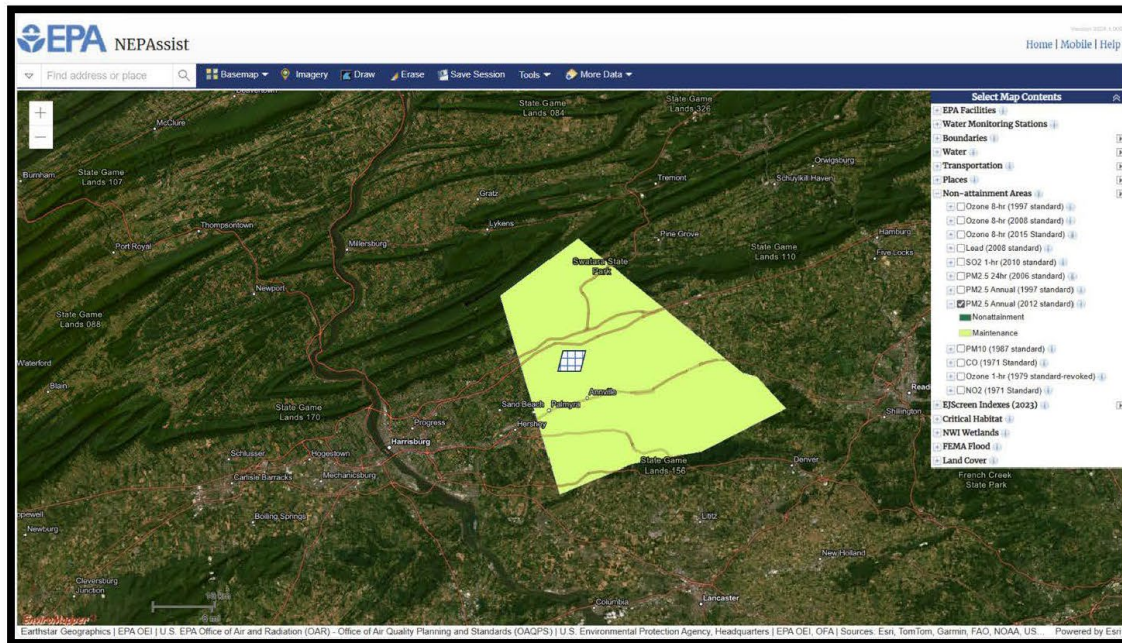


Figure 1.2.4.13.8. PM 2.5 annual 2012 Standard. Result: Maintenance.

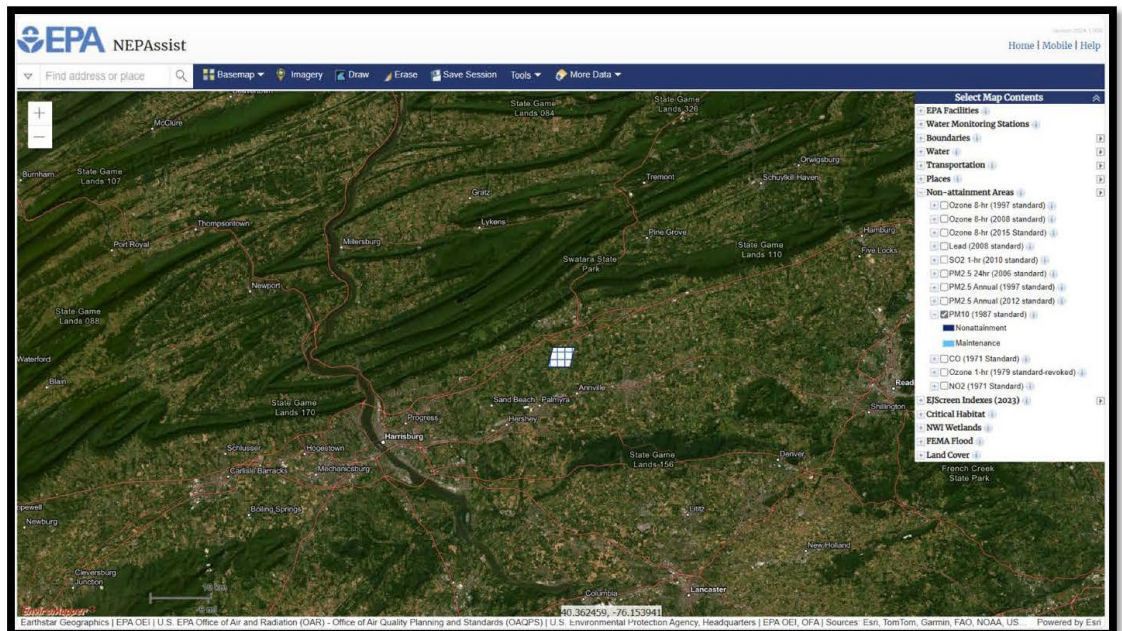


Figure 1.2.4.13.9. PM 10 1987 Standard. Result: Attainment.



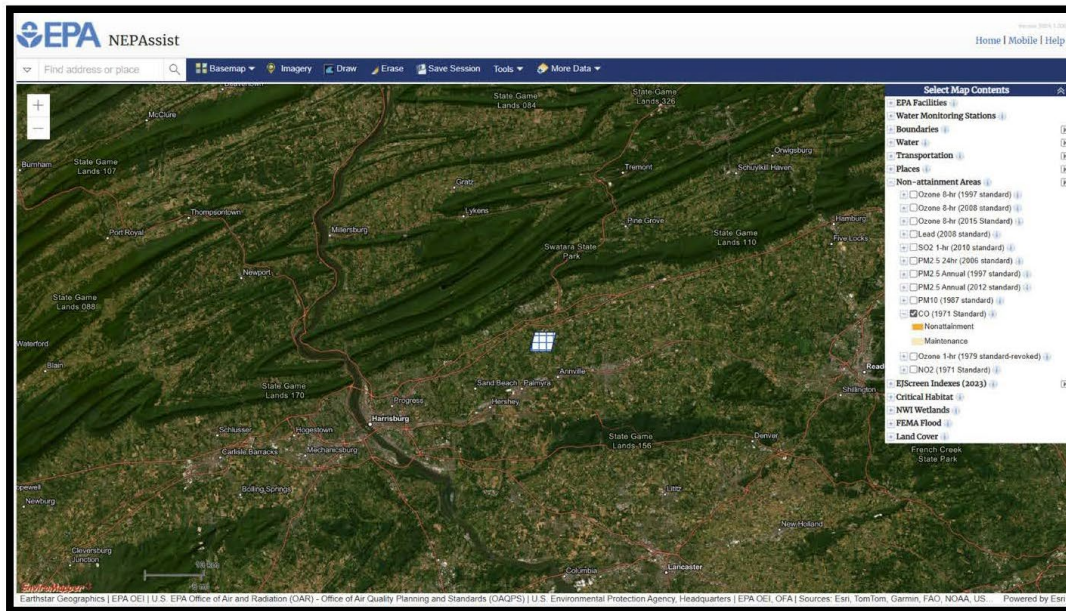


Figure 1.2.4.13.10. CO 1971 Standard. Result: Attainment.

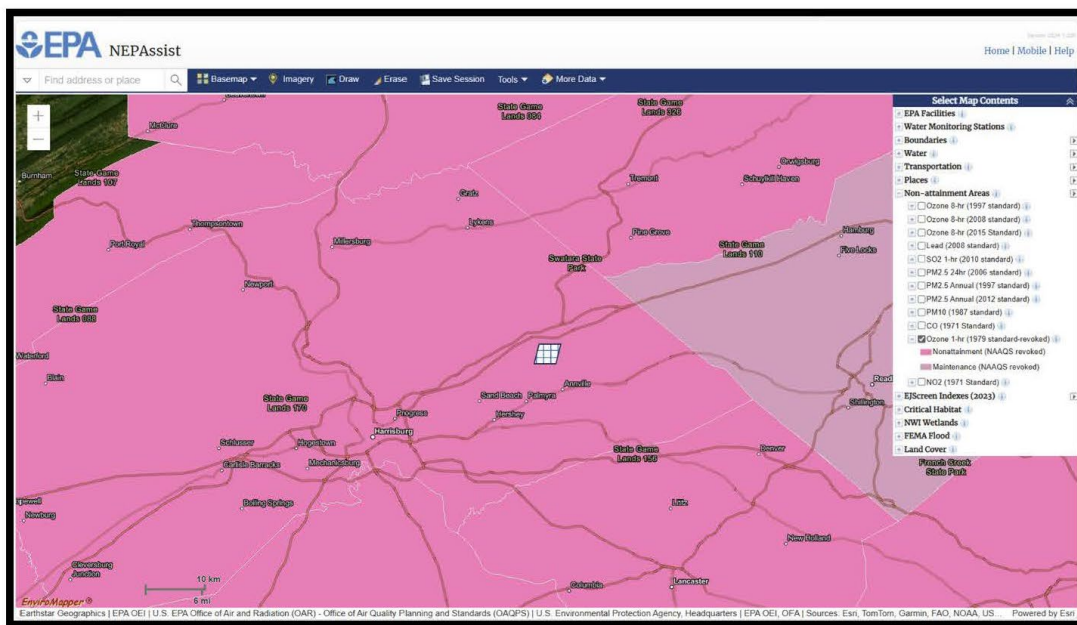


Figure 1.2.4.13.11. Ozone 1979 Standard-revoked. Result: Non-Attainment.



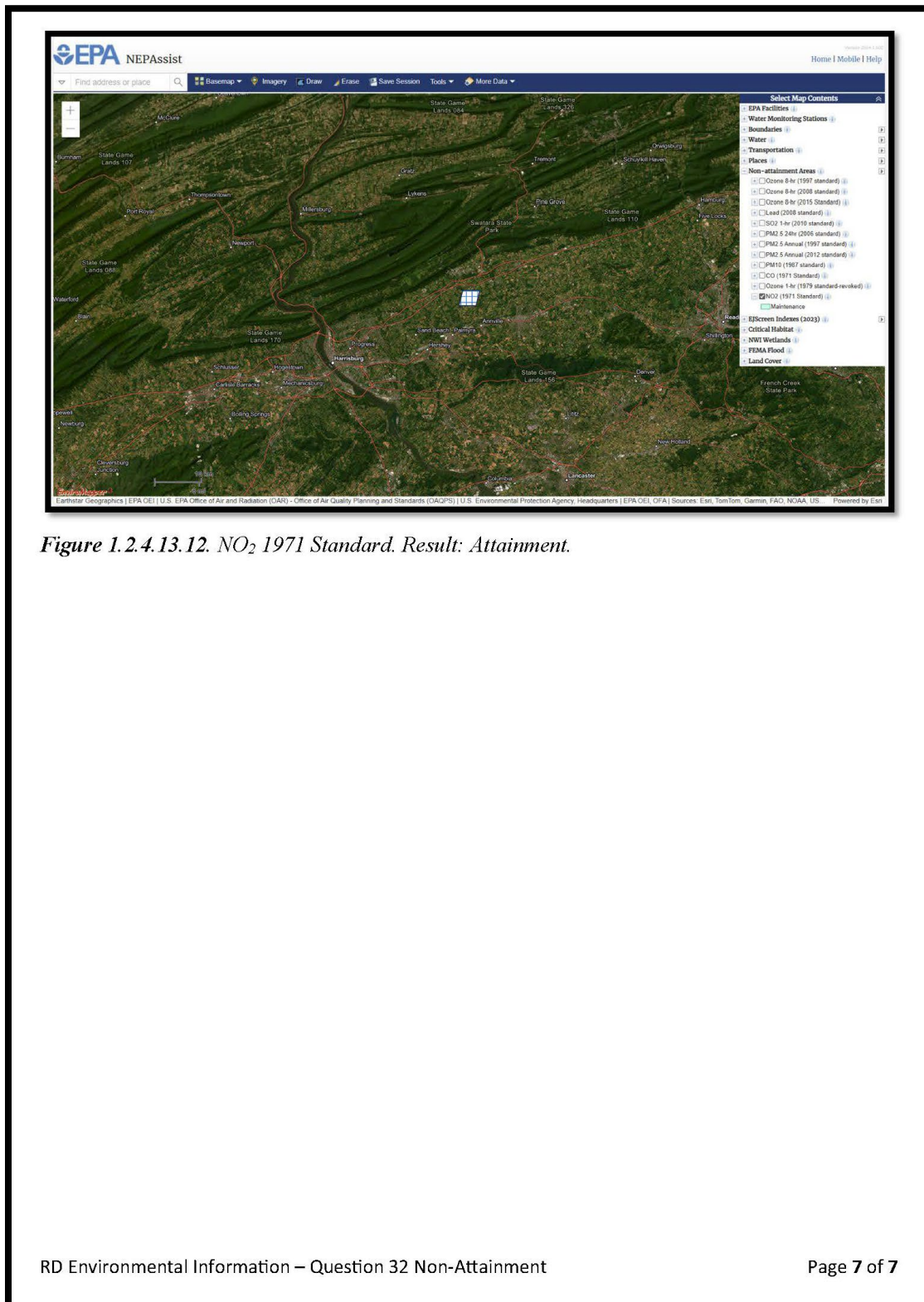


Figure 55. Non-attainment metrics summary.

### 13.11 TAB K – NOISE

During the construction phase, Green Way Solar shall observe all local Noise Ordinances and Noise Regulations and maintain Decibel levels at or below those specified by local ordinances and within noise ordinance hours.

### 13.12 TAB L – TRANSPORTATION

As this Project does not involve highways or traffic, Highway Occupancy Permit(s), Traffic Studies, and Traffic Ordinances are not applicable.

### 13.13 TAB M – AESTHETICS

After searching both Annville and North Annville Township, I was unable to locate any Visually Sensitive Areas Map, nor was I able to locate any Aesthetic Ordinance(s). However, should such a map or ordinance be discovered during review of this document, our team will address issues or concerns raised.

## 13.14 TAB N – HUMAN HEALTH AND SAFETY

Phase I Environmental Site Assessment – Date prepared 3/31/24


Transaction Screen Questionnaire is Included in materials below as embodied in the 8-page Environmental Information document from initial submission.

Additionally, a pair of National Pollution Discharge Elimination System studies were recently completed by professional engineer Molly Hughes see the following two subsections.

13.14.1 National Pollution Discharge Elimination System Module 1 – 2021 submission

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E&S Module 1



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF CLEAN WATER

### NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES EROSION AND SEDIMENT CONTROL (E&S) MODULE 1

Applicant: Nelson Ziegler Project Site Name: Nelson Ziegler Poultry Operation

Surface Water Name(s): DP-001: Swatara Creek / Wetlands / DP-002: UNT to Swatara Creek Surface Water Use(s): WWF-MF / WWF-MF

E&S PLAN INFORMATION																																		
<p>1. Describe the existing topographic features of the project site and the immediate surrounding area.</p> <p><b>The existing disturbed areas and the immediate surrounding areas consist of cultivated crop land. The receiving stream/wetlands are located on the property for DP-001 &amp; DP-002.</b></p>																																		
<p>2. Complete the following table for soils within the earth disturbance area.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Map Unit Symbol</th> <th>Map Unit Name</th> <th>Acres</th> <th>HSG</th> <th>% of Disturbed Area</th> <th>Depth (ft)</th> <th>Hydric</th> </tr> </thead> <tbody> <tr> <td>BkC</td> <td>Berks Channery Silt Loam, 8-15%</td> <td>9.88</td> <td>B</td> <td>41</td> <td>1.6-3.3</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>BkD</td> <td>Berks Channery Silt Loam, 15-25%</td> <td>6.35</td> <td>B</td> <td>37</td> <td>1.6-3.3</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>CmA</td> <td>Comly Silt Loam, 3-8%</td> <td>0.77</td> <td>C</td> <td>22</td> <td>1.6-2.92</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </tbody> </table>							Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric	BkC	Berks Channery Silt Loam, 8-15%	9.88	B	41	1.6-3.3	<input checked="" type="checkbox"/>	BkD	Berks Channery Silt Loam, 15-25%	6.35	B	37	1.6-3.3	<input checked="" type="checkbox"/>	CmA	Comly Silt Loam, 3-8%	0.77	C	22	1.6-2.92	<input checked="" type="checkbox"/>
Map Unit Symbol	Map Unit Name	Acres	HSG	% of Disturbed Area	Depth (ft)	Hydric																												
BkC	Berks Channery Silt Loam, 8-15%	9.88	B	41	1.6-3.3	<input checked="" type="checkbox"/>																												
BkD	Berks Channery Silt Loam, 15-25%	6.35	B	37	1.6-3.3	<input checked="" type="checkbox"/>																												
CmA	Comly Silt Loam, 3-8%	0.77	C	22	1.6-2.92	<input checked="" type="checkbox"/>																												
<p>Discuss any soil limitations and how the E&amp;S Plan was designed to address those limitations.</p> <p><b>CUTBANKS CAVE:</b> Soil cut slopes shall be graded at 3:1 or flatter. All trenching shall be done per OSHA guidelines.</p> <p><b>DROUGHTY:</b> Permanent stabilization shall be completed during the growing season. Care shall be taken to ensure adequate moisture is available for seed germination.</p> <p><b>EASILY ERODIBLE:</b> Erosion will be minimized by establishment of vegetation with a minimum 6" of topsoil, proper compaction of subsoils where required, and the installation of matting per plan specifications and details. Soil slopes shall be graded at 3:1 or flatter.</p> <p><b>FLOODING / PONDING / WETNESS:</b> The site is graded for proper drainage.</p> <p><b>DEPTH TO SATURATED ZONE / SEASONAL HIGH WATER TABLE:</b> Infiltration BMPs shall maintain the recommended separation distance from the limiting zone.</p> <p><b>HYDRIC / HYDRIC INCLUSIONS:</b> The site is located in an area that has been cultivated for the last five years. Site-specific testing was done ensure BMPs were properly placed.</p> <p><b>LOW STRENGTH / LANDSLIDE PRONE:</b> Proper site compaction and permanent site stabilization per plan specifications and details will mitigate this concern. Soil slopes shall be graded at 3:1 or flatter.</p> <p><b>SLOW PERCOLATION:</b> Percolation testing was completed with a double ring infiltrometer to ensure adequate percolation within the infiltration BMPs.</p> <p><b>PIPING:</b> Piping will be avoided with proper compaction and establishment of vegetation.</p> <p><b>POOR SOURCE OF TOPSOIL:</b> Topsoil shall be stripped and stockpiled for later utilization for permanent stabilization. The topsoil will be installed in the infiltration BMP areas.</p> <p><b>FROST ACTION:</b> Commencing/completing the site work prior to inclement weather mitigates this concern. Proper drainage will aid in the reduction of frost action potential.</p> <p><b>SHRINK-SWELL:</b> Establishment of permanent vegetation and proper compaction per plan specifications and details will reduce the shrink-swell potential.</p> <p><b>POTENTIAL SINKHOLES:</b> The site was investigated for sinkhole potential. The recommended DEP loading ratios are maintained to mitigate this potential.</p>																																		
<p>If Hydric soils are present, is a wetland determination attached to this module? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</p> <p>If soils are known to be contaminated, 1) identify the pollutants exceeding Act 2 standards in the space provided below, 2) identify the extent of soil contamination on an E&amp;S Plan Drawing that is attached to this module, and 3) describe the methods that will be used to avoid or minimize disturbance of the contaminated soils in the space provided below.</p> <p style="text-align: center;">N/A</p>																																		

- 1 -

3800-PM-BCW0406a Rev. 12/2019  
E&S Module 1

3. Describe the characteristics of the earth disturbance activity, including the past, present and proposed land uses and the proposed alteration to the project site.

The existing (past 5 years) and previous (past 50 years) land use is agriculture. The existing pre-development site condition for the area of disturbance is cropland.

4. Describe the volume and rate of runoff from the project site and its upstream watershed area.

The runoff from the disturbed areas and the upslope drainage area will be managed during construction with the installation of the basin, conveyances, inlet protection, and siltsock.



3800-PM-BCW0406a Rev. 12/2019  
E&S Module 1

5. Check boxes to indicate all BMPs that will be installed or implemented, identify plan numbers for the BMPs, and describe any deviations from the E&S Manual.

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
<input checked="" type="checkbox"/> Rock Construction Entrance	303	305	ABACT – 150' IN LENGTH
<input type="checkbox"/> Rock Construction Entrance with Wash Rack			
<input type="checkbox"/> Rumble Pad			
<input type="checkbox"/> Wheel Wash			
<input type="checkbox"/> Temporary and Permanent Access Roads			
<input type="checkbox"/> Waterbar			
<input type="checkbox"/> Broad-based Dip			
<input type="checkbox"/> Open-top Culvert			
<input type="checkbox"/> Water Deflector			
<input type="checkbox"/> Roadside Ditch			
<input type="checkbox"/> Ditch Relief Culvert			
<input type="checkbox"/> Turnout			
<input type="checkbox"/> Compost Sock Sediment Trap			
<input type="checkbox"/> Temporary Stream Crossing			
<input type="checkbox"/> Temporary Wetland Crossing			
<input type="checkbox"/> Turbidity Barrier (Silt Curtain)			
<input type="checkbox"/> Dewatering Work Areas			
<input checked="" type="checkbox"/> Pumped Water Filter Bag	303	305	
<input type="checkbox"/> Sump Pit			
<input type="checkbox"/> Waste Management			
<input checked="" type="checkbox"/> Concrete Washout	303	305	
<input checked="" type="checkbox"/> Compost Filter Sock	303	305	
<input type="checkbox"/> Compost Filter Berm			
<input type="checkbox"/> Weighted Sediment Filter Tube			
<input type="checkbox"/> Rock Filter Outlet			
<input type="checkbox"/> Silt Fence (Filter Fabric Fence)			
<input type="checkbox"/> Reinforced Silt Fence			
<input type="checkbox"/> Super Silt Fence (Super Filter Fabric Fence)			

3800-PM-BCW0406a Rev. 12/2019  
E&S Module 1

**E&S BMPs**

E&S BMPs	Plan No(s). Identified	Plan No(s). for O&M	Deviation(s) from E&S Manual
<input type="checkbox"/> Sediment Filter Log (Fiber Log)			
<input type="checkbox"/> Wood Chip Filter Berm			
<input type="checkbox"/> Straw Bale Barrier			
<input type="checkbox"/> Rock Filter			
<input type="checkbox"/> Vegetative Filter Strip			
<input type="checkbox"/> Inlet Filter Bag			
<input type="checkbox"/> Stone Inlet Protection			
<input type="checkbox"/> Runoff Conveyance (Channel)			
<input type="checkbox"/> Bench			
<input type="checkbox"/> Top-of-Slope Berm			
<input type="checkbox"/> Temporary Slope Pipe			
<input type="checkbox"/> Sediment Basin			
<input type="checkbox"/> Sediment Trap			
<input checked="" type="checkbox"/> Riprap Apron	303	306	
<input type="checkbox"/> Flow Transition Mat			
<input type="checkbox"/> Stilling Basin (Plunge Pool)			
<input type="checkbox"/> Stilling Well			
<input checked="" type="checkbox"/> Energy Dissipater			
<input type="checkbox"/> Drop Structure			
<input type="checkbox"/> Earthen Level Spreader			
<input type="checkbox"/> Structural Level Spreader			
<input type="checkbox"/> Surface Roughening			
<input checked="" type="checkbox"/> Vegetative Stabilization	303	301/305	
<input checked="" type="checkbox"/> Erosion Control Blanket	303	301/305	
<input type="checkbox"/> Soil Binders			
<input type="checkbox"/> Sodding			
<input type="checkbox"/> Cellular Confinement Systems			
<input type="checkbox"/> Alternative:			
<input type="checkbox"/> Alternative:			

3800-PM-BCW0406a Rev. 12/2019  
E&S Module 1

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Site Access BMPs											E&S Manual Figure/Detail No.
BMP Name	No.	Length (ft)	Width (ft)	% Slope	Spacing (ft)	Length of Upslope Drainage (ft)	Culvert Diameter (in)	Soil Type in Ditch			
Rock Construction Entrance (RCE)											
RCE with Wash Rack											
Temporary and Permanent Access Roads – Crowned Roadway											
Temporary and Permanent Access Roads – Insloped Roadway											
Waterbar											
Broad-based Dip											
Open-top Culvert											
Water Deflector											
Roadside Ditch											
Ditch Relief Culvert											
Sediment Barriers / Filters											E&S Manual Figure/Detail No.
BMP Name	DA (ac)	Diameter (in)	Storage Capacity (cf)	Trap Height (in)	% Slope	Slope Length Above Barrier (ft)	Barrier Height (in)				
Compost Sock Sediment Trap											
Compost Filter Sock											
Compost Filter Berm											
Silt Fence (Filter Fabric Fence)											
Super Silt Fence											
Sediment Filter Log											
Weighted Sediment Filter Tube											
Straw Bale Barrier											
Wood Chip Filter Berm											
Toe-of-Slope Berm											

- 5 -



3800-PM-BCW0406a Rev. 12/2019  
E&S Module 1

Table 1 – For PAG-01 applicants, complete the requested information for each selected E&S BMP, where applicable.

Runoff Conveyance BMPs													
BMP Name	Temporary	Design Storm	DA (ac)	Multiplier	Qr (cfs)	Q (cfs)	Manning's n	Va (fps)	V (fps)	D (ft)	d (ft)	Flow Depth Ratio	E&S Manual Figure/Detail No.
Vegetated Channel	<input type="checkbox"/>												
Sodded Channel	<input type="checkbox"/>												
Riprap Channel	<input type="checkbox"/>												
Energy Reduction BMPs													
BMP Name	Downstream Distance to Drainage Course (ft)	Downstream % Slope	DA (ac)	Discharge (cfs)	Manhole Depth (ft)	Inflow Pipe Diameter (in)	Outlet Pipe Diameter (in)	E&S Manual Figure/Detail No.					
Level Spreader													
Drop Structure													
Stilling Basins / Wells													
BMP Name	Pipe Diameter (in)	Discharge (cfs)	Well Diameter (in)	Depth of Well Below Invert (ft)	Basin Depth (ft)	Median Riprap Size (in)	Distance from Discharge Pipe to Basin Center (ft)	E&S Manual Figure/Detail No.					
Stilling Basin													
Stilling Well													
Other BMPs													
BMP Name	DA (ac)	Pipe Diameter (in)	Berm Height (in)	Length (ft)	% Slope	Vertical Spacing (ft)	Channel Depth (ft)	Riprap Size	Riprap Thickness (in)	Initial Width (ft)	Terminal Width (ft)	E&S Manual Figure/Detail No.	
Temporary Slope Pipe													
Bench													
Rock Filter													
Riprap Apron													

3800-PM-BCW0406a Rev. 12/2019  
E&S Module 1

For selected BMPs not identified in Table 1, report the name of the BMP and the Figure or Detail No. from the E&S Manual that will be used for design and implementation (PAG-01 only).

BMP Name	E&S Manual Figure/Detail No.	BMP Name	E&S Manual Figure/Detail No.

6. ☒ All applicable Standard E&S Worksheets from Appendix B of the E&S Manual have been completed and are attached.

7. ☒ Other worksheets or calculations equivalent to Appendix B of the E&S Manual have been completed and are attached.

8. Identify the E&S Plan Drawing number(s) that describes the sequence of BMP installation and removal in relation to the scheduling of earth disturbance activities, prior to, during and after earth disturbance activities that ensure the proper functioning of all BMPs.

Sheet 301

9. ☐ Supporting E&S calculations have been completed and are available upon request (PAG-01 only).

10. ☒ Supporting E&S calculations are attached to the NOI/application.

11. ☐ Plan drawings consist of standard Figures/Construction Details in E&S Manual (PAG-01 only).

12. ☒ Plan drawings have been developed for the project and are attached to the NOI/application.

13. ☒ BMPs will be inspected on a weekly basis and after measurable storm events (i.e., at least 0.25 inch).

14. Identify the following information relating to temporary stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, 8) liming rate, and 9) liming rate.

E&S Plan Drawing No(s): Sheet 301

15. Identify the following information relating to permanent stabilization measures on an E&S Plan Drawing and identify the Drawing No. below: 1) vegetative species, 2) % pure live seed, 3) seed application rate, 4) fertilizer type, 5) fertilizer application rate, 6) mulch type, 7) mulching rate, 8) liming rate, 9) anchor material, 10) anchoring method, 11) rate of anchor material application, 12) topsoil placement depth, and 13) seeding season dates.

E&S Plan Drawing No(s): Sheet 301

16. Describe the procedures that will be taken to ensure that recycling or disposal of materials associated with or from the project site will be conducted properly.

No fill material is required to be imported for this project. All building materials and construction waste will be stockpiled, collected, and taken to an approved recycling center.

17. Identify the presence of any naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities. If such formations or conditions exist, identify BMPs that will be implemented to avoid or minimize potential pollution.

There are no naturally occurring site features or conditions that existing which have the potential to cause pollution during earth disturbance.

18. Identify whether the potential exists for thermal impacts to surface waters from the earth disturbance activity. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.

Thermal impacts are mitigated by constructing the basin which will infiltrate water into the ground. Light colored roofing material will be installed to further mitigate thermal impacts.




3800-PM-BCW0406a Rev. 12/2019 E&S Module 1	
19. <input checked="" type="checkbox"/> The E&S Plan has been planned, designed, and will be implemented to be consistent with the PCSM Plan.	
20. If applicable, identify existing and proposed riparian forest buffers on E&S and PCSM Plan Drawings and identify the Drawing No(s) below (select N/A if not applicable).	
E&S Plan Drawing No(s):	<input checked="" type="checkbox"/> N/A
PCSM Plan Drawing No(s):	
<b>E&amp;S PLAN DEVELOPER</b>	
<input type="checkbox"/> I am trained and experienced in E&S control methods. <input checked="" type="checkbox"/> I am a licensed professional.	
Name:	<u>Molly Hughes</u>
Company:	<u>Red Barn Consulting, Inc.</u>
Address:	<u>3050 Yellow Goose Road</u>
City, State, ZIP:	<u>Lancaster, PA 17601</u>
License Type:	<u>Professional Engineer</u>
Title:	<u>Vice President of Engineering</u>
Phone No.:	<u>717-393-2176</u>
Email:	<u>Mollyh@redbarnag.com</u> <u>/bnye@redbarnag.com</u>
License No.:	<u>PE062573</u>
Exp. Date:	<u>September 2021</u>
Molly Hughes _____ E&S Plan Developer Signature	
10/15/20 _____ Date	

Figure 56. 2021 National Pollutant Discharge Elimination System Module 1.

13.14.2 National Pollution Discharge Elimination System Module 2 – 2021 submission

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PCSM Module 2



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF CLEAN WATER

### NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2

Applicant: Nelson Ziegler

Surface Water Name(s): DP-001: Swatara Creek/Wetlands / Dp-002: UNT to Swatara Creek

Project Site Name: Nelson Ziegler Poultry Operation

Surface Water Use(s): WWF-MF / WWF-MF

PCSM PLAN INFORMATION						
1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.						
Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Bio-Retention Basin A	6.4.5	40.38264	-76.55139	13.78
001	2	Swale A	6.4.8	40.38252	-76.55293	1.53
001	3	Swale B	6.4.8	40.38239	-76.55258	1.53
001	4	Swale C	6.4.8	40.38207	-76.55330	1.53
001	5	Swale D	6.4.8	40.38190	-76.55373	1.27
001	6	Swale E	6.4.8	40.38301	-76.55348	0.91

Undetained Areas:  
001= 1.35 acres  
002= 0.02 acres

☐ The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

A detailed construction sequence and critical stages can be found on PCSM Plan Sheet 201.

3800-PM-BCW0406b Rev. 12/2019  
PCSM Module 2

- |   |
|---|
| 3. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and will be available on-site.   |
| 4. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and are attached to the NOI/application.   |
| 5. <input checked="" type="checkbox"/> Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.  |
| 6. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts.<br><br>No geological formations or soil conditions exist within the project site which has the potential to cause pollution during earth disturbance activities. A portion of the site is underlain with karst geology, including area of Basin A. The site has been designed to ensure loading ratios are met. Permanent stabilization occurs once final grade is achieved and on-site testing was completed to aide in the design process in order to minimize the potential for sinkhole activity. |
| 7. Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts.<br><br>Thermal impacts are mitigated by stormwater being captured in the stormwater basin and being infiltrated into the ground. Light colored roofing material will be installed to further mitigate thermal impacts.  |
| 8. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.  |
| 9. <input checked="" type="checkbox"/> A pre-development site characterization has been performed.  |



3800-PM-BCW0406b Rev. 12/2019  
PCSM Module 2

STORMWATER ANALYSIS – RUNOFF VOLUME											
Surface Water Name:		DP-001: Swatara Creek / Wetlands DP-002: UNT to Swatara Creek		Discharge Point(s): 001/002							
1.	<input type="checkbox"/> The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.										
2.	<input checked="" type="checkbox"/> The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.										
3.	<input type="checkbox"/> An alternative design standard is being used.										
4.	<input checked="" type="checkbox"/> A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.										
5.	2-Year/24-Hour Storm Event:	3.03	inches	Source of precipitation data:	NOAA Atlas 14, Volume 2, Version 3						
6.	Stormwater Runoff Volume, Pre-Construction Conditions:	17,737 / 1,143	CF	<input checked="" type="checkbox"/>	Calculations attached						
7.	Stormwater Runoff Volume, Post-Construction Conditions:	68,028 / 437	CF	<input checked="" type="checkbox"/>	Calculations attached						
8.	Net Change (Post-Construction – Pre-Construction Volumes):	50,291 / -705	CF								
9.	Identify all selected structural PCSM BMPs and provide the information requested. <input checked="" type="checkbox"/> Calculations attached										
DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	no	68,028	54,835	0.6	15	<input checked="" type="checkbox"/>	1.0	20,455	37,014	16,834
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				

53,848 (001)  
-705 (002)

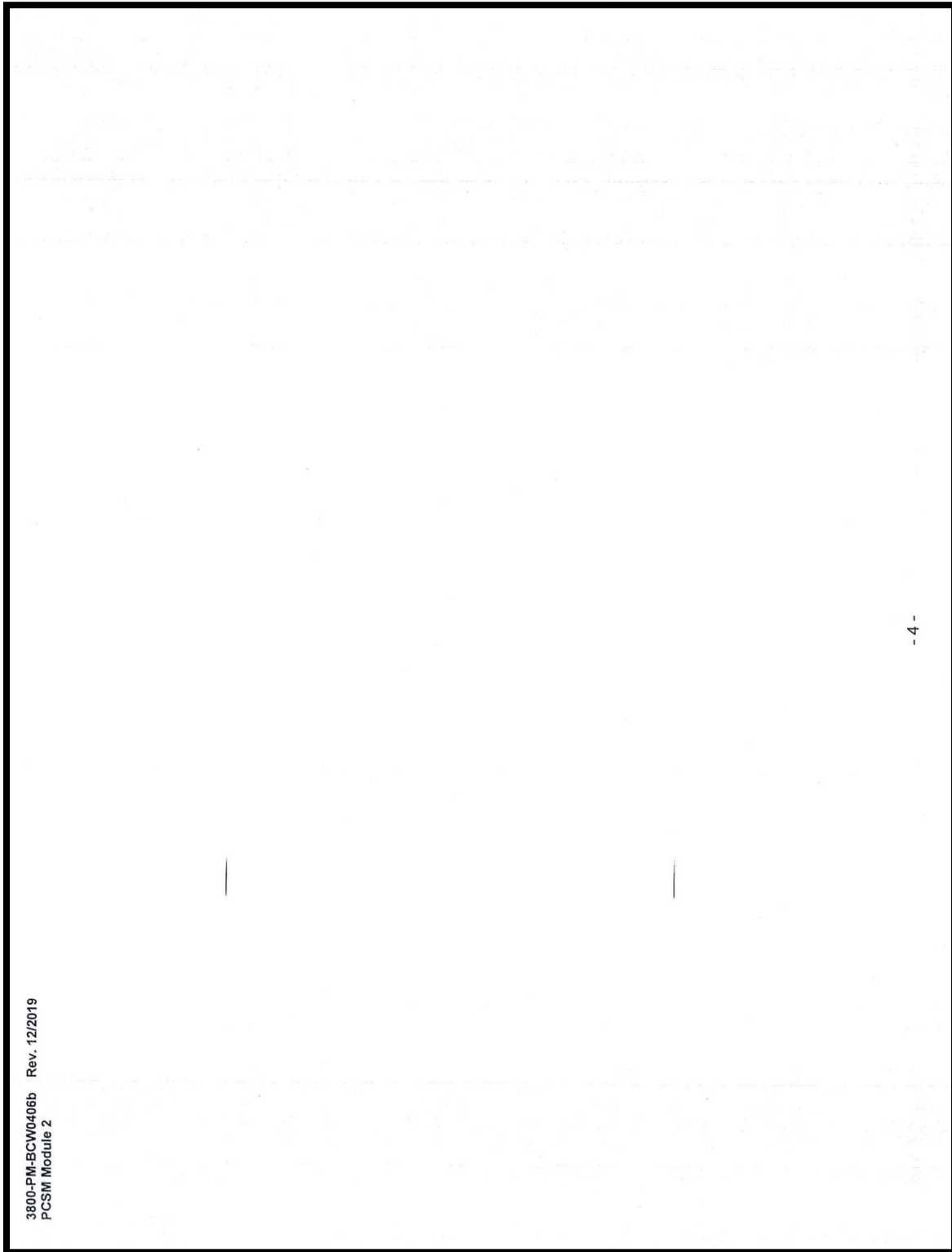
Total Infiltration & ET Credits (CF):

Non-Structural BMP Volume Credits (CF) (Attach Calculations): 0

Managed Release Credits (CF) (Attach MRC Design Summary): 0

Volume Required to Reduce/Manage (CF): 50,291 (001)  
0 (002)

Total Credits (CF): 3,557 (001) -  
705 (002)



- 4 -

3800-PM-BCW0406b Rev. 12/2019  
PCSM Module 2



3800-PM-BCW0406b Rev. 12/2019  
PCSM Module 2

INFILTRATION INFORMATION	
BMP ID: 1 (Discharge Points 001)	<input checked="" type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed: 6	
2. Method(s) used for infiltration testing: Double Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-1 thru TP-6	
4. Avg Infiltration Rate: 0.96 in/hr	5. FOS: 3 : 1
6. Infiltration rate used for design: 0.6 in/hr	
7. Separation distance between the BMP bottom and bedrock: 2.0+ feet	
8. Separation distance between the BMP bottom and seasonal high-water table: 2.0+ feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	<input type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

3800-PM-BCW0406b Rev. 12/2019  
PCSM Module 2

### STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: DP-001: Swatara Creek / Wetlands  
DP-002: UNT to Swatara Creek Discharge Point(s): 001/002

1. ☐ The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.

2. ☒ The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.

3. ☐ An alternative design standard is being used.

4. ☐ A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.

5. ☐ Alternative rate calculations are attached.

6. Identify precipitation amounts. Source of precipitation data: NOAA Atlas 14, Volume 2, Version 3

2-Year/24-Hour Storm: 3.03 10-Year/24-Hour Storm 4.53

50-Year/24-Hour Storm: 6.54 100-Year/24-Hour Storm 7.61

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	DP-001: 1.95 / DP-002: 0.14	DP-001: 29.74 / DP-002: 0.01	DP-001: 27.79 / DP-002: -.13
10-Year/24-Hour	DP-001: 10.75 / DP-002: 0.82	DP-001: 54.44 / DP-002: 0.04	DP-001: 43.69 / DP-002: -0.78
50-Year/24-Hour	DP-001: 28.37 / DP-002: 2.11	DP-001: 91.72 / DP-002: 0.08	DP-001: 63.35 / DP-002: -2.03
100-Year/24-Hour	DP-001: 39.11 / DP-002: 2.89	DP-001: 112.73 / DP-002: 0.11	DP-001: 73.62 / DP-002: -2.78

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
1 (DP-001)	28.98	51.83	86.05	105.28	.04	0.06	2.14	4.71

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	DP-001: 1.95 / DP-002: .14	DP-001: 0.79 / DP-002: 0.01	DP-001: -1.16 / DP-002: -0.13
10-Year/24-Hour	DP-001: 10.75 / DP-002: 0.82	DP-001: 2.65 / DP-002: 0.04	DP-001: -8.1 / DP-002: -0.78
50-Year/24-Hour	DP-001: 28.37 / DP-002: 2.11	DP-001: 5.73 / DP-002: 0.08	DP-001: -15.4 / DP-002: -2.03
100-Year/24-Hour	DP-001: 39.11 / DP-002: 2.89	DP-001: 7.53 / DP-002: 0.11	DP-001: -31.58 / DP-002: -2.78

*Figure 57. 2021 National Pollutant Discharge Elimination System Module 2.*