

Natural Resources Impact Report

Posey Solar
Posey County, Indiana



June 23, 2021

PRESENTED TO

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EXECUTIVE SUMMARY

Tetra Tech Inc., on behalf of Posey Solar LLC, is gathering information for the proposed Posey Solar Project (Project) to be located east of the city of Mt. Vernon in southeast Posey County, Indiana. The Project has a proposed nameplate energy generation capacity of up to 300 megawatts (MW) alternating current (AC). An area of 3,530 acres is being evaluated for development of the Project based on the June 17, 2021 preliminary site development plan (Project Area).

The purpose of this report is to summarize the present status of assessment of natural resources within the Project Area (topography, geology, vegetation, soil types, water resources [floodplains and wetlands/streams], and wildlife habitats [avian, terrestrial, and marine], as applicable) and how Posey Solar LLC plans to avoid, minimize, and mitigate potential impacts to these natural resources. Consultation with the United State Fish and Wildlife Service (USFWS) and Indiana Department of Natural Resources (IDNR) regarding potential impacts to natural resources under their jurisdictions is underway. This report also outlines how Posey Solar LLC will comply with applicable air and water quality standards, which will include consultation with United States Environmental Protection Agency (EPA) and the Indiana Department of Environmental Management (IDEM).

The table below provides a summary of findings for this report based on the review of the eight environmental factors, and proposed Project actions to avoid, minimize, and mitigate any potential impacts.

Environmental Factor	Summary of Potential Impacts
Topography	Localized grading to facilitate solar panel placement will be required. Overall topography of the Project Area will not be impacted by the Project. Avoidance, minimization, and mitigation measures are not anticipated for impacts to topography.
Geology	The Project will avoid existing oil and gas infrastructure and will not impact development on existing oil and gas leases. Minimization and mitigation measures are not anticipated for impacts to geology.
Vegetation	Project facilities will largely be sited within agricultural areas and will avoid identified natural resource areas where practicable. Minimization and mitigation measures are not anticipated for impacts to vegetation unless identified during agency consultations.
Soil Types	The Project will convert some Prime Farmland and Prime Farmland if Drained currently used for agriculture to solar energy production. However, at the end of the Project's service life the Project will be decommissioned, and the lessor parties (landowners) can return properties to agricultural use.
Water Resources (Floodplains)	Project facilities will be sited to avoid the 156.3 acres located within the flood hazard areas. If flood hazards areas cannot be avoided, Posey Solar LLC will seek applicable permits from the IDNR and Posey County.
Water Resources (Wetlands and Streams)	Project facilities will be sited to avoid wetlands and streams to the extent practicable, and avoidance buffers for regulated streams. If wetlands and streams cannot be avoided, necessary permits will be obtained from the USACE and IDEM.

Environmental Factor	Summary of Potential Impacts
Wildlife (Avian/Bat)	<p>Project facilities will largely be sited within agricultural areas and avoid identified natural resource areas where practicable. With regard to avian and bat species, the Project will avoid clearing potential nesting or roosting habitat during use periods (i.e., spring through fall) and will schedule tree clearing activities in the winter. If tree clearing cannot occur in the winter, the Project will consult with the USFWS and IDNR to mitigate any potential impacts to protected species' habitat.</p> <p>The Project Area will be seeded with a vegetation mix that may promote greater biodiversity and higher quality habitat for birds and insects, including pollinators.</p>
Wildlife (Terrestrial)	<p>For terrestrial species, which are mostly plants, insects, and a few reptiles, the Project will largely be sited within agricultural areas and avoid identified natural resource areas. Potential impacts to natural resource areas will be limited to areas with low plant species diversity, as practical. Silt fencing will be placed between the Project work site and potential natural resources areas to inhibit reptiles from entering the work area. Best management practices will also be established to outline steps to be taken if a state-listed terrestrial species is observed on site. The Project will consult with the IDNR on these proposed steps.</p>
Wildlife (Marine)	<p>For marine species (mollusks, insects, fish, amphibians, reptiles, and some plants), the Project will largely be sited within agricultural areas and avoid wetlands and streams. Best-management practices will be used to limit off-site sedimentation from Project construction activities. If wetland and stream impacts cannot be avoided, the Project will consult with the USACE and IDEM to acquire necessary permits. Permits of this nature will require an assessment of listed species that may be potentially present and impacts to their habitats.</p>
Air Quality	<p>Based on the minimal impacts from vehicle emissions and fugitive dust anticipated during construction, potential negative impacts to local air quality are not expected. Beneficial impacts from the Project are anticipated to include a regional reduction in carbon emissions over the lifetime of the Project and improvements to long-term regional air quality.</p>
Water Quality	<p>A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented for the Project; therefore, water quality degradation due to erosion and sedimentation from Project related construction activity is not anticipated.</p>

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1.0 INTRODUCTION

Tetra Tech Inc., on behalf of Posey Solar LLC, is gathering information for the proposed Posey Solar Project (Project) to be located east of Mt. Vernon in southeast Posey County, Indiana. The Project has a proposed nameplate energy generation capacity of up to 300-megawatts (MW) alternating current (AC). An area of 3,530 acres is being evaluated for development of the Project based on the June 17, 2021 preliminary site development plan (Project Area).

1.1 PURPOSE OF THE STUDY

Posey Solar LLC is submitting an application to the Posey County Planning Commission for Preliminary Development Plan Approval. As part of the application, Posey Solar LLC is required to submit a Natural Resource Impact Report as part of the preliminary filing materials as stated within the *Renewable Energy Generation Systems – Solar and Wind: Tier 1, 2, and 3 projects for Unincorporated Posey County - 153.124.02 Preliminary Development Plan Approval (I)* (Posey County 2020a). The requirements for this report are:

The Applicant shall submit a Natural Resources Impact Report for the proposed project site. The Natural Resources Impact Report shall include a detailed description of the potential natural resource impacts as a result of the construction, operation, and maintenance of the SECS that includes identification and analysis of (a) topography, geology, vegetation, soil types, water resources including wetlands, avian, terrestrial, and marine wildlife habitats as applicable; (b) compliance with applicable air and water quality standards; (c) compliance with any USFWS solar energy guidelines as applicable, and (d) compliance with any site specific recommendations made by IDNR or IDEM. The report shall include a study area map with identification of any areas of importance such as bat habitat, flood zones, wetlands and watercourses evaluated in the report. The report shall also include any potential mitigation measures such as open space, erosion control, and habitat replacement to reduce the identified impacts on the project area.

The purpose of this report is to summarize the present status of assessment of natural resources within the Project Area (topography, geology, vegetation, soil types, water resources [floodplains and wetlands/streams], and wildlife habitats [avian, terrestrial, and marine], as applicable and how Posey Solar LLC plans to avoid, minimize, and mitigate potential impacts to these natural resources. Consultation with the United State Fish and Wildlife Service (USFWS) and Indiana Department of Natural Resources (IDNR) regarding potential impacts to natural resources under their jurisdictions is underway. Applicable agency comments are provided below (Appendix D). The report also outlines how Posey Solar LLC will comply with applicable air and water quality standards, which will include consultation with United States Environmental Protection Agency (EPA) and the Indiana Department of Environmental Management (IDEM).

2.0 NATURAL RESOURCES SETTING AND ANALYSIS

There are six natural resources categories that will be evaluated for potential impacts associated with the construction, operation, and maintenance of the Project: topography, geology, vegetation, soils, water resources

(floodplains and wetlands/streams), and wildlife habitats (avian, terrestrial, and marine). A summary based on desktop and/or field data is presented for each resource within the Project Area in addition to the anticipated steps Posey Solar LLC will take to avoid, minimize, and mitigate potential impacts. Agencies to be consulted will also be discussed under each resource, as appropriate.

2.1 TOPOGRAPHY

A review of the U.S. Geological Survey (USGS) 7.5-minute series Caborn (1978) and West Franklin (1981), Indiana Topographic Quadrangles revealed that elevation within the Project Area ranges from approximately 360 feet to 470 feet above mean sea level (Appendix A, Figure 1). Generally, the topography in the Project Area is level to gently rolling in the southern portions with hills and greater topographic variation in the northern portions.

2.1.1 Avoidance, Minimization, and Mitigation

The overall topography of the Project Area will not be impacted by the Project. Only localized grading to facilitate solar panel placement will be required. For this reason, avoidance, minimization, and mitigation measures are not anticipated for impacts to topography.

2.2 GEOLOGY

The Project Area is located within the Wabash Lowland Section of the Southern Hills and Lowlands Physiographic Region (Indiana Geological Survey [IGS] 1998). The Wabash Lowland Section is characterized by rolling hills of low relief (Gray 2000). Extensive floodplains are present along the dominant rivers. Bedrock is predominately Pennsylvanian age shale, sandstone, limestone, and clay (IGS 2013).

According to data from the IGS and the IDNR, no surface coal mines, coal mine entries, underground coal mines, abandoned or active industrial quarries, or abandoned or active sand and gravel pits are located within the Project Area (IDNR 2016a, 2016b, 2016c; IGS 2001a, 2001b, 2016).

Four oil and gas fields (approximately 2,030 acres [58 percent of Project Area]) underlie the Project Area (IGS 2015a) (Appendix A, Figure 2). Additionally, 222 wells related to petroleum extraction are located within the Project Area (IGS 2015b) (Appendix A, Figure 2). Of the 222 wells, 113 of the wells are classified as dry or abandoned oil or gas wells, 30 wells are active oil or gas wells, 18 wells represent the path of a deviated hole (PATH), 3 wells are the surface location of the deviated holes, and 3 are the permitted location for new wells. Additionally, 24 wells are abandoned water injection wells, 12 wells are for active water injection, 1 well is a temporarily abandoned water injection well, and 3 are abandoned saltwater disposal wells. The remaining wells include 2 locations of a non-potable water supply and 13 wells that are unclassified.

2.2.1 Avoidance, Minimization, and Mitigation

The Project will avoid existing oil and gas infrastructure and will not impact development on existing oil and gas leases. Minimization and mitigation measures are not anticipated for impacts to geology.

2.3 VEGETATION

According to the 2016 National Land Cover Dataset (NLCD) (USGS 2019), the Project Area is predominately cultivated cropland (95 percent of land cover) (Appendix A, Figure 3; Table 1). A review of the National Agriculture Imagery Program (NAIP) aerial photograph from 2020 confirmed that the Project Area is primarily agricultural cropland with scattered wooded areas and residences (USDA FSA APFO 2020).

Table 1. Land Cover within the Project Area

Land Cover	Acres in Project Area	Percent of Project Area
Cultivated Crops	3,357	95%
Developed, Open Space	114	3%
Woody Wetlands	33	1%
Deciduous Forest	11	<1%
Developed, Low Intensity	9	<1%
Hay/Pasture	2	<1%
Mixed Forest	2	<1%
Emergent Herbaceous Wetlands	1	<1%
Open Water	0.4	<1%
Developed, Medium Intensity	0.4	<1%
Barren Land	0.2	<1%
Total	3,530	100%

Additionally, Posey Solar LLC completed natural resource surveys for the Project Area in 2020 and 2021. During field surveys for natural resource areas¹, the majority of the Project Area was observed to be cropland primarily for the cultivation of corn and soybeans. Approximately 77 acres of natural resource areas, or 2 percent of the Project Area, including 69.5 acres of deciduous forest, 4.7 acres of grassland/herbaceous, and 2.8 acres of mixed forest were documented during the field surveys. Approximately 17.1 acres of the deciduous forest natural resource areas were recorded as having primarily native plant species with high species diversity (more than 25 species of plants), 51.0 acres were recorded as having primarily native plant species or a mix of native and non-native plant species with medium diversity (10-25 species of plants), and 1.4 acres were identified as having primarily native plant species or a mix of native and non-native plant species with low diversity (fewer than 10 species of plants).

2.3.1 Avoidance, Minimization, and Mitigation

Project facilities will largely be sited within agricultural areas and avoid identified natural resource areas where practicable. Because of this, minimization and mitigation measures are not anticipated for impacts to vegetation unless identified in during agency consultation.

¹ Natural resource areas are defined as any parts of the Project that are not cultivated cropland or with otherwise human manipulated vegetation.

2.4 SOIL TYPES

The federal Farmland Protection Policy Act (FPPA) (7 USC 4201) was established to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The FPPA does not authorize the Federal Government to regulate the use of private or nonfederal land or, in any way, affect the property rights of owners. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance as designated by the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS). 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 (USDA NRCS 2021a).

According to the USDA NRCS Soil Survey Geographic Database (SSURGO) (USDA NRCS 2021b), approximately 65 percent (2,303 acres) of soils within the Project Area are classified as Prime Farmland if Drained (Appendix A, Figure 4). Of the remaining 35 percent, 17 percent (611 acres) is classified as Prime Farmland, 11 percent (378 acres) is classified as Not Prime Farmland, 5 percent (157 acres) is classified as Prime Farmland if Drained and Protected from Flooding, and 2 percent (81 acres) is classified as Prime Farmland if Protected from Flooding.

2.4.1 Avoidance, Minimization, and Mitigation

As described above in Section 2.3, the majority of the Project Area is currently used for row-crop agriculture. The Project will convert some Prime Farmland currently used for agriculture to solar energy production. However, at the end of the Project's service life the Project will be decommissioned, and the lessor parties (landowners) can return properties to agricultural use. During decommissioning, buildings and ancillary equipment will be removed to a minimum depth of 4 feet, and underground cables will be removed to a minimum depth of 3 feet. The solar panels and ancillary facilities will be recycled or otherwise appropriately disposed. Access road material will be removed and these areas will be restored to approximately the same conditions as prior to construction unless the landowner requests to keep the road in place. Impacted areas will be returned to approximately the same topography that existed prior to construction with topsoil respread in areas disturbed by the construction or decommissioning activities. Lands could then be returned to agricultural production or the soils will be stabilized and vegetated as dictated by any agreements that may exist between Posey Solar LLC and the leasing property owner(s). Grading, topsoil additions, and reseeding will follow guidance from the USDA NRCS and other applicable agencies.

2.5 WATER RESOURCES

2.5.1 Flood Plains

Tetra Tech reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Map Numbers 18129C0230C, 18129C0235C, 18129C0240C, 18129C0245C, and 18129C0265C, effective November 5, 2014 (FEMA 2020) (Appendix B). Approximately 13 acres of Zone A flood hazard area (100-year floodplain) were identified in the northern portion of the Project Area along Little Creek, and approximately 1.3 acres of Zone A flood hazard areas were identified within the western portion of the Project Area along McFadden Creek

(Appendix A, Figure 5). Additionally, approximately 142 acres of Zone AE flood hazard areas (100-year floodplain with known flood depths) were identified in the southern portion of the Project Area (Appendix A, Figure 5).

The Indiana Flood Control Act (IC 14-28-1) authorizes the IDNR to regulate construction activities within the floodway of any river or stream in the State of Indiana. The State of Indiana defines a floodway as the channel of a river or stream and adjoining portion of the floodplain that carry and discharge flood water or flood flow of a river or stream (State of Indiana 2019).

2.5.2 Wetlands and Streams

The potential for U.S. Army Corps of Engineers (USACE) or IDEM jurisdictional waters and wetlands within the Project Area was determined by reviewing USFWS National Wetlands Inventory (NWI) data, the USGS National Hydrography Dataset (NHD), and the IGS Waterbodies Dataset (USFWS 2020a; USGS 2020a; IGS 2019). Additionally, Posey Solar LLC completed wetland surveys for the Project Area in 2020 and 2021.

Review of the NWI data identified 51 wetlands within the Project Area comprising approximately 63 acres (1.8 percent) of the Project Area (Appendix A, Figure 6). The NWI wetlands within the Project Area include roughly 32 acres of freshwater forested/shrub wetlands, 25 acres of riverine wetlands, 5.5 acres of freshwater ponds, and 0.5 acre of freshwater emergent wetlands.

Five named drainages and multiple unnamed drainages are mapped throughout the Project Area (Appendix A, Figure 6). The NHD waterways generally correspond with the NWI riverine wetlands. Table 2 summarizes the NHD waterways in the Project Area.

Table 2. NHD Waterways within the Project Area

Name	Location in Project Area	Length within Project Area (miles)
Castleberry Creek	Southeastern	1.5
Cypress Ditch	Southeastern	1.1
Persimmon Pond Ditch	Southwestern	0.3
Dixon Ditch	Southern	<0.1
McFadden Creek	Central	<0.1
Unnamed drainages	Throughout	52.3

Waterbodies in the IGS Waterbodies Dataset generally corresponded with the NWI dataset; however, they did not encompass as much acreage (Appendix A, Figure 6). Additionally, approximately 2.4 miles of McFadden Creek and its tributaries and approximately 0.3 mile of Persimmon Pond Ditch within the Project Area are Posey County regulated drainages (Posey County 2020b) (Appendix A, Figure 6). A 75-foot avoidance buffer is required for these regulated drainages. For McFadden Creek and its tributaries, this is approximately 23.5 acres and for Persimmon Pond Ditch, this is approximately 5.7 acres.

During the wetland field surveys, 28 intermittent stream segments, 2 perennial stream segments, 82 wetlands, and 1 pond were delineated in the Project Area. The intermittent streams totaled approximately 7 miles in length and

13 acres in area, and the perennial streams totaled about 880 feet in length and 0.5 acre in area in the Project Area. All of the streams in the Project Area were either manmade or modified within excavated ditches. The wetlands and pond totaled about 36 acres in the Project Area. Most of the wetlands were identified either within cropland and were regularly cultivated or were within excavated drainages. The pond was also identified in an excavated depression.

2.5.3 Agency Comments

On March 18, 2021, the Project received an email response from the USACE (ID Number LRL-2021-255) regarding the Project's initial coordination letter sent on March 17, 2021 (Appendix D). The USACE indicated the proposed Project boundary contains waters of the United States (WOUS) and a Department of the Army permit may be needed if the Project would involve a discharge of dredged and/or fill material below the Ordinary High Water elevation of any WOUS or any wetlands. According to the response, WOUS include all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. The USACE indicated that multiple streams and potential wetlands appear to be present on the site.

USACE provided next steps in ensuring the appropriate permits are obtained. The first is to provide a thorough delineation of all WOUS located within the proposed boundaries. The delineation must be conducted in accordance with the USACE's 1987 Wetlands Delineation Manual and should include all streams, open waters, and wetlands. A Jurisdictional Determination (preliminary or approved) Form should then be completed with the information obtained from the fieldwork and submitted to the USACE Newburgh Regulatory Office to verify the presence of the delineated waters.

If the Project will necessitate the discharge of dredged or fill material into WOUS including wetlands, the USACE indicated an application and complete plans should then be submitted for review.

2.5.4 Avoidance, Minimization, and Mitigation

Project facilities will be sited to avoid the 1,455 acres located within the flood hazard areas. If flood hazard areas cannot be avoided, Posey Solar LLC will seek applicable permits from the IDNR and Posey County.

Project facilities will be sited to avoid wetlands and streams to the extent practicable, and avoidance buffers for regulated streams. If wetlands and streams cannot be avoided, necessary permits will be obtained from the USACE and IDEM.

2.6 PROTECTED SPECIES

2.6.1 Federal Listed Species

An official species list was obtained for the Project from the USFWS Information for Planning and Consultation (IPaC) tool (Appendix C). The IPaC indicated that one endangered species (Indiana bat [*Myotis sodalis*]), and one threatened species (the northern long-eared bat [NLEB] [*Myotis septentrionalis*]) may occur within the Project Area (Table 3). The IPaC tool did not identify any other federally listed species or critical habitat for the proposed Project

Area (USFWS 2021). Due to the limited contiguous forest habitat identified federally-listed species have a low likelihood of occurrence in the Project Area.

Table 3. Federally-Listed Threatened and Endangered Species that May Occur in Project Area

Common Name	Scientific Name	Federal Status	Species Habitat in Project Area	Likelihood of Occurrence ¹
Indiana bat	<i>Myotis sodalist</i>	Endangered	Limited contiguous forest habitat	Low
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Limited contiguous forest habitat	Low

¹Likelihood of Occurrence: Low- species range overlaps with Project Area and marginally suitable habitat in Project Area; Moderate- species range overlaps with Project Area and suitable habitat present in Project Area, or species known to occur in habitat similar to Project Area; High- species observed during site visit, or known populations exist in Project Area, and highly suitable habitat present in Project Area.

2.6.2 State Listed Species

A search of the IDNR list of endangered, threatened, and rare species by county identified 51 state endangered species, 30 state threatened species, 16 special concern species, 2 state rare species, 8 watch list species, 5 state significant high-quality natural communities, and 16 state extirpated species within Posey County (IDNR 2021) (Appendix C). Only state-listed threatened and endangered species are protected in Indiana under the Nongame and Endangered Species Conservation Act (State of Indiana [2017]: Indiana Code 14-22-34-1), with the exception of reptiles and amphibian listed under 312 IAC 9-5-4 Endangered Species of Reptiles and Amphibians, Section 4, which are protected under Indiana Code 14-22-34-12. These protected species are included in Table 4 below. State listed species with the highest likelihood of occurrence within the Project Area include those that use roadside ditch, drainage ditch, and agricultural habitat (Appendix A; Figure 3).

Table 4. State-Listed Threatened and Endangered Species with Occurrences in the Project Area

Common Name	Scientific Name	State Status	Species Habitat in Project Area	Likelihood of Occurrence ¹
Mollusks				
Eastern fanshell pearlymussel	<i>Cyprogenia stegaria</i>	Endangered	Lack of medium to large river habitat	Low
Snuffbox	<i>Epioblasma triquetra</i>	Endangered	Lack of sand, gravel, or cobble substrates in swift small and medium sized river habitat	Low
Round hickorynut	<i>Obovaria subrotunda</i>	Endangered	Lack of medium sized river habitat	Low
Sheepnose	<i>Plethobasus cyphus</i>	Endangered	Lack of large river habitat	Low
Clubshell	<i>Pleurobema clava</i>	Endangered	Limited small stream habitat	Low
Rough pigtoe	<i>Pleurobema plenum</i>	Endangered	Limited small stream and lack of large stream habitat	Low
Fat pocketbook	<i>Potamilus capax</i>	Endangered	Lack of large river habitat	Low

Common Name	Scientific Name	State Status	Species Habitat in Project Area	Likelihood of Occurrence ¹
Rabbitsfoot	<i>Theliderma cylindrica</i>	Endangered	Lack of medium sized river habitat	Low
Rayed bean	<i>Villosa fabalis</i>	Endangered	Lack of headwater creek and large river habitat	Low
Sharp wedge	<i>Xolotrema obstrictum</i>	Endangered	Limited moist forest and floodplain habitat	Low
Insects				
A carrion beetle	<i>Necrophilus pettiti</i>	Threatened	Limited forest habitat	Low
Manitoba white burrowing mayfly	<i>Tortopsis primus</i>	Threatened	Lack of large river habitat	Low
Southern plains bumble bee	<i>Bombus fraternus</i>	Endangered	Lack of prairie and similar open habitat	Low
Marbled underwing moth	<i>Catocala marmorata</i>	Endangered	Limited forested wetland habitat	Low
Pinkpatched looper moth	<i>Eosphropteryx thyatyroides</i>	Threatened	Limited deciduous forest and forest edge habitat	Low
A prominent moth	<i>Hyperaeschra georgica</i>	Threatened	Limited deciduous forest habitat	Low
Appalachian eyed brown	<i>Lethe appalachia appalachia</i>	Threatened	Limited forested swamp and streambank habitat	Low
Fish				
Lake sturgeon	<i>Acipenser fulvescens</i>	Endangered	Lack of large lake and river habitat	Low
Gilt darter	<i>Percina evides</i>	Endangered	Limited small stream habitat	Low
Amphibian				
Blanchard's cricket frog	<i>Acris blanchardi</i>	State-species of concern	Limited shoreline habitat	Low
Mole salamander	<i>Ambystoma talpoideum</i>	Endangered	Limited lowland forest, valley, and floodplain habitat	Low
Eastern hellbender	<i>Cryptobranchus alleganiensis alleganiensis</i>	Endangered	Lack of cool, rocky, swiftly flowing stream habitat	Low
Reptile				
Timber rattlesnake	<i>Crotalus horridus</i>	Endangered	Lack of dry, rocky, ridge-tops of mature oak-hickory forest habitat	Low
Eastern mud turtle	<i>Kinosternon subrubrum subrubrum</i>	Endangered	Slow moving water with abundant vegetation including drainage ditches and surrounding upland areas	Moderate
Alligator snapping turtle	<i>Macrochelys temminckii</i>	Endangered	Lack of deep pools in large river habitat	Low

Common Name	Scientific Name	State Status	Species Habitat in Project Area	Likelihood of Occurrence ¹
Copperbelly water snake	<i>Nerodia erythrogaster neglecta</i>	Endangered	Limited forested floodplain, shrubby wetland adjacent to shallow lake and pond habitat	Moderate
Smooth green snake	<i>Opheodrys vernalis</i>	Endangered	Lack of remnant prairie and savanna habitat	Low
Eastern river cooter	<i>Pseudemys concinna concinna</i>	Endangered	Lack of river, lake, and tidal marsh habitat	Low
Eastern box turtle	<i>Terrapene carolina carolina</i>	State-species of concern	Limited forest, grassland, and wetland habitat	Low
Western ribbon snake	<i>Thamnophis proximus proximus</i>	State-species of concern	Limited stream, pond, and lakes with surrounding shrub habitat	Low
Bird				
Least bittern	<i>Ixobrychus exilis</i>	Endangered	Limited marsh habitat	Low
Loggerhead shrike	<i>Lanius ludovicianus</i>	Endangered	Suitable nesting habitat may be present in agricultural fencerows and shrubs	Low (see Section 2.6.3.1)
Yellow-crowned night heron	<i>Nyctanassa violacea</i>	Endangered	Limited wetlands, wooded swamp, and marsh habitat	Low
Cerulean warbler	<i>Setophaga cerulea</i>	Endangered	Lack of mature deciduous forest habitat	Low
Interior least tern	<i>Sternula antillarum athalassos</i>	Endangered	Lack of river and sandbar habitat	Low
Mammal				
Indiana bat	<i>Myotis sodalis</i>	Endangered	Limited contiguous forest habitat	Low
Evening bat	<i>Nycticeius humeralis</i>	Endangered	Limited forest and open areas such as river corridor habitat	Low
Swamp rabbit	<i>Sylvilagus aquaticus</i>	Endangered	Limited floodplain, river and creek edge habitat	Low
Vascular Plant				
Appalachian bugbane	<i>Actaea rubifolia</i>	Endangered	Lack of mature forest habitat	Low
Carolina mosquito-fern	<i>Azolla caroliniana</i>	Threatened	Limited swamp, pond, lake, and slow-moving stream habitat	Low
Cup-seed	<i>Calycocarpum lyonii</i>	Threatened	Limited deciduous and riparian forest habitat	Low
Land of gold sedge	<i>Carex aureolensis</i>	Endangered	Limited wet meadow, wet woods, muddy margin of lakes and pond habitat	Low
Bush's sedge	<i>Carex bushii</i>	Threatened	Lack of dry to mesic grasslands and forest margin habitat	Low

Common Name	Scientific Name	State Status	Species Habitat in Project Area	Likelihood of Occurrence ¹
Large sedge	<i>Carex gigantea</i>	Endangered	Lack of wet swamp forests, forest openings, and open swamp habitat	Low
False hop sedge	<i>Carex lupuliformis</i>	Threatened	Lack of wet forest, riverine wetland, marsh, and wet thicket habitat	Low
Social sedge	<i>Carex socialis</i>	Threatened	Lack of lowland deciduous forest habitat	Low
Northern catalpa	<i>Catalpa speciosa</i>	Threatened	Roadside ditch and upland habitat	Moderate
Devil's-bit	<i>Chamaelirium luteum</i>	Endangered	Lack of moist meadow, thickets, and rich wooded slope habitat	Low
Pitcher's leather-flower	<i>Clematis pitcheri</i>	Threatened	Lack of limestone outcrops, moist woods, and thicket habitat	Low
Green hawthorn	<i>Crataegus viridis var. viridis</i>	Threatened	Lack of moist woodland habitat	Low
Cusp dodder	<i>Cuscuta cuspidata</i>	Endangered	Lack of dry to wet prairie habitat	Low
Green flatsedge	<i>Cyperus pseudovegetus</i>	Threatened	Limited of marsh, pond edge, and riverbank habitat	Low
Broom panic-grass	<i>Dichanthelium scoparium</i>	Endangered	Limited pond shoreline and wetland edge habitat	Low
Water-purslane	<i>Didiplis diandra</i>	Endangered	Lack of river slough habitat	Low
Creeping bur-head	<i>Echinodorus cordifolius</i>	Endangered	Limited wet ditch, stream, and shallow pond habitat	Low
Wolf's spikerush	<i>Eleocharis wolfii</i>	Threatened	Lack of ephemeral pools in grasslands, oak woodlands on river terrace, and limestone barren habitat	Low
Cluster fescue	<i>Festuca paradoxa</i>	Threatened	Lack of upland prairie, savannah, forest openings, and glade habitat	Low
Water-locust	<i>Gleditsia aquatica</i>	Endangered	Limited floodplain, swamp, and riverbank habitat	Low
Featherfoil	<i>Hottonia inflata</i>	Threatened	Lack of swamp, stream, and backwaters habitat	Low
Coppery St. John's-wort	<i>Hypericum virgatum</i>	Threatened	Dry roadside ditch habitat	Moderate
Eastern bloodleaf	<i>Iresine rhizomatosa</i>	Threatened	Lack of low woods, sand dune, and riverbank habitat	Low
Blackfoot quillwort	<i>Isoetes melanopoda</i>	Threatened	Lack of rock outcrop habitat	Low
Least duckweed	<i>Lemna minuta</i>	Endangered	Limited aquatic habitat	Low
Amazon sprangle-top	<i>Leptochloa panicoides</i>	Endangered	Lack of mesic habitat	Low
Cylindric-fruited seedbox	<i>Ludwigia glandulosa</i>	Threatened	Wetlands and roadside ditch habitat	Moderate

Common Name	Scientific Name	State Status	Species Habitat in Project Area	Likelihood of Occurrence ¹
Eastern bee-balm	<i>Monarda bradburiana</i>	Endangered	Roadside ditch habitat	Moderate
Crow-poison	<i>Nothoscordum bivalve</i>	Threatened	Lack of open woods, prairies, and barren habitat	Low
Bottomland broomrape	<i>Orobanche riparia</i>	Endangered	Limited streambank, sand bar, and floodplain habitat	Low
Eastern eulophus	<i>Perideridia americana</i>	Endangered	Lack of moist prairie habitat	Low
Short's bladderpod	<i>Physaria globosa</i>	Endangered	Lack of open rocky areas, shale at cliff base, ledges, and open cedar glade habitat	Low
Southern rein orchid	<i>Platanthera flava var. flava</i>	Endangered	Lack of riparian thickets, wet meadow, swamp, and floodplain forest habitat	Low
Rough rattlesnake-root	<i>Prenanthes aspera</i>	Threatened	Lack of tall-grass prairie, dry prairie, and dry rocky woods habitat	Low
Mississippi buttercup	<i>Ranunculus laxicaulis</i>	Endangered	Roadside ditch habitat	Moderate
Pursh's buttercup	<i>Ranunculus pusillus</i>	Endangered	Roadside ditch habitat	Moderate
Short-bristle hornedrush	<i>Rhynchospora corniculata</i>	Threatened	Limited swamp and marsh habitat	Low
Buckley's goldenrod	<i>Solidago buckleyi</i>	Endangered	Lack of open oak woods, ridges and slopes, and bluff habitat	Low
Woodland pinkroot	<i>Spigelia marilandica</i>	Endangered	Limited moist woods, ravine, and streambank habitat	Low
American snowbell	<i>Styrax americanus</i>	Threatened	Lack of swamp, boggy slope, and floodplain forest habitat	Low
Bald cypress	<i>Taxodium distichum var. distichum</i>	Threatened	Lack of lake margin, swamp, and river habitat	Low
Tall meadowrue	<i>Thalictrum pubescens</i>	Threatened	Lack of rich woods, low thickets, swamp, wet meadow, and stream bank habitat	Low
Climbing dogbane	<i>Thysanthea difformis</i>	Threatened	Limited floodplain and bottomlands habitat	Low
Buffalo clover	<i>Trifolium reflexum var. glabrum</i>	Endangered	Lack of sandy prairie, and thin forest habitat	Low
Catbird grape	<i>Vitis palmata</i>	Threatened	Lack of riverbank, slough, and floodplain forest habitat	Low
American wisteria	<i>Wisteria frutescens</i>	Threatened	Lack of moist thicket, swampy woods, and floodplain habitat	Low

¹Likelihood of Occurrence: Low- species range overlaps with Project Area and marginally suitable habitat in Project Area; Moderate- species range overlaps with Project Area and suitable habitat present in Project Area, or species known to occur in habitat similar to Project Area; High- species observed during site visit, or known populations exist in Project Area, and highly suitable habitat present in Project Area.

The above table provides documented occurrences of state-listed species for the entire county. In February 2021, Tetra Tech requested a search of the IDNR Natural Heritage Database for the Project for information on known occurrences of endangered, threatened, or rare species, high-quality natural communities, natural areas, and dedicated State Nature Preserves. The IDNR response dated February 10, 2021 provided one record of the loggerhead shrike observed in 1980; one record of the copperbelly water snake observed in 1982; one record of the green flatsedge (*Cyperus pseudovegetus*) observed in 1925; one record of the cylindrical-fruited seedbox observed in 1925; and one record of Mississippi buttercup observed in 1929.

2.6.3 Agency Comments

The IDNR provided an Environmental Review on May 15, 2021 (ER-23563) regarding the Project's initial coordination letter sent to Christie Stanifer, Environmental Coordinator with the IDNR Division of Fish and Wildlife on March 17, 2021 (Appendix D). The IDNR indicated that if their agency has regulatory jurisdiction over the Project, the recommendations contained in the Environmental Review may become requirements of any permit issued. If the IDNR does not have permitting authority, all recommendations are voluntary.

The IDNR recommended avoidance and minimization of impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensation for impacts. The IDNR indicated the following to address potential impacts in the Project Area.

2.6.3.1 Species Specific Recommendations

According to the IDNR, the loggerhead shrike is no longer found in this portion of the state and therefore, the IDNR does not foresee any impacts to this bird species as a result of this Project. For the copperbelly water snake, the IDNR noted that most of the Project land is agricultural cropland with some swamp land present in the southern portion of the Project Area. As copperbelly watersnakes will travel overland and to mitigate potential impacts, the IDNR recommended erosion control/exclusion fencing be installed around habitat in the southern portions of the Project Area to prevent this species from entering the work areas.

2.6.3.2 Forest and Riparian Habitat

The IDNR noted that the majority of the Project is previously cleared farm fields and that tree clearing in the remaining scattered wooded areas should be avoided. Building roads in or across wooded areas should also be avoided. If avoidance is not possible, woody vegetation impacts should be minimized and impacts limited to a 20-foot wide cut through wooded areas. The IDNR recommended a mitigation plan be developed (and submitted with the permit application, if required) for any unavoidable habitat impacts that will occur.

Impacts to non-wetland forest of 1 acre or more should be mitigated at a minimum 2:1 ratio. If less than 1 acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under 1 acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree that is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat

supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in an urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat sites; however, the mitigation site should be located in the floodway, downstream of the 1 square mile drainage area of that stream (or another stream within the 8-digit HUC, preferably as close to the impact site as possible) and adjacent to existing forested riparian habitat.

2.6.3.3 Crossing Structures

IDNR indicated if any roads need to cross a stream, the following recommendations should be implemented in the design and construction to facilitate fish and wildlife passage. The Environmental Unit recommends bridges rather than culverts and bottomless culverts rather than box or pipe culverts. Wide culverts are better than narrow culverts, and culverts with shorter through lengths are better than culverts with longer through lengths. If box or pipe culverts are used, the bottoms should be buried a minimum of 6 inches (or 20 percent of the culvert height/pipe diameter, whichever is greater up to a maximum of 2 feet) below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossings should: span the entire channel width (a minimum of 1.2 times the OHWM width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width / length) of 0.25; and have stream depth, channel width, and water velocities during low-flow conditions that are approximate to those in the natural stream channel.

The new structure and associated materials (such as slope armoring) should not create conditions that are less favorable for fish and wildlife passage under the structure compared to current conditions. From the perspective of aquatic habitat, upstream fish passage, and wildlife movement, silt/bedload accumulation within the structure is beneficial. Implement stream simulation techniques to create a stable, natural substrate within the structure with stream gradient, riffles, runs and pools, and stream substrate (sand/gravel/cobble mix) reflecting the adjacent stream segment. Natural cobble and boulders (or other materials as appropriate in that stream) should be placed within the structure (anchored if necessary) to protect the structure itself, provide flow diversity and roughness/energy dissipation, and to accelerate streambed formation within the crossing. Culvert width and gradient should be appropriate for the site conditions so that flows do not scour out material from the culvert.

Riprap aprons or energy dissipators should be placed flush with the structure floor. Mix smaller stone and fines in with the riprap so streamflow stays at the surface instead of percolating down and leaving a dry bed. To facilitate aquatic organism passage through the structure the riprap layer's slope at the outlet should be 20:1 while it should be 5:1 on the inlet.

2.6.3.4 Additional Measures

The IDNR recommends that the measures listed below be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

1. Revegetate all bare and disturbed areas with a mixture of native grasses, sedges, wildflowers, and also native hardwood trees and shrubs if any woody plants are disturbed during construction as soon as possible

upon completion. Do not use any varieties of tall fescue or other non-native plants, including prohibited invasive species.

2. Minimize and contain within the project limits in channel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the IDNR - Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat or northern long-eared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
5. Do not excavate in the low flow area except for the placement of riprap.
6. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.
7. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
8. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

2.6.4 Avoidance, Minimization, and Mitigation

Project facilities will largely be sited within agricultural areas and avoid identified natural resource areas where practicable. In regard to avian species (birds and bats), the Project will avoid clearing potential nesting or roosting habitat during use periods (i.e., spring through fall) and will schedule tree clearing activities in the winter. If tree clearing cannot occur in the winter, the Project will consult with the USFWS and IDNR to mitigate any potential impacts to protected species' habitat.

For terrestrial species, which are mostly plants, insects, and a few reptiles, the Project will largely be sited within agricultural areas and avoid identified natural resource areas. Potential impacts to natural resource areas identified during field surveys will be limited to areas with low plant species diversity, as practicable. Silt fencing will be placed between the Project work site and potential natural resources areas to discourage reptiles from entering the work area. Best management practices will also be established that outline steps to implement if a state-listed terrestrial species is observed on site. The Project will consult with the IDNR on these proposed steps.

For marine species (mollusks, insects, fish, amphibians, reptiles, and some plants), the Project will largely be sited within agricultural areas and avoid wetlands and streams to the extent practicable. Best management practices will be used to limit off-site sedimentation from Project construction activities (see Section 3.2.1). If wetland and stream

impacts cannot be avoided, the Project will consult with the USACE and IDEM to acquire necessary permits. Permits of this nature will require an assessment of listed species that may potentially be present and impacts to their habitats.

3.0 APPLICABLE AIR AND WATER STANDARDS

3.1 AIR QUALITY

The federal Clean Air Act overseen by the U.S. Environmental Protection Agency (EPA) forms the basis for controlling air pollution in the United States. The IDEM Office of Air Quality (OAQ) is responsible for implementing the requirements of the Clean Air Act in Indiana. State and federal air quality regulations target specific groups of air contaminants. EPA's National Ambient Air Quality Standards (NAAQS) apply to the following six "criteria" pollutants: carbon monoxide (CO), lead, nitrogen dioxide (NO₂), particulate matter, sulfur dioxide (SO₂), and ozone. Areas are designated as in attainment if measured concentrations of criteria pollutants are less than the standard, or as nonattainment if concentrations exceed the standard. Posey County is currently in attainment for all criteria pollutants (EPA 2021a).

3.1.1 Avoidance, Minimization, and Mitigation

Potential sources of air pollutants during construction and operation of the proposed Project primarily include vehicle emissions and fugitive dust from grading activities. These emissions are not expected to be significant and will largely be restricted to the construction phase of the Project. Required measures to reduce dust during construction will be included in the Engineering, Performance, and Construction (EPC) Agreement, which will further reduce the effect of fugitive dust on air quality. Over the life of the Project, the anticipated regional reduction in carbon emissions will substantially offset Project-related emissions. Potential negative impacts to local air quality during construction will be less than significant and impacts to long-term regional air quality will be beneficial.

3.2 WATER QUALITY

The Project Area is located in the Highland-Pigeon watershed (hydrologic unit code [HUC] 05140202) approximately 0.75 mile north of the Ohio River. According to EPA's How's My Waterway webpage, the reach of the Ohio River from Henderson, Kentucky to Mt. Vernon, Indiana is considered an impaired waterbody for aquatic life, fish and shellfish consumption, and recreation due to *Escherichia coli* (E. coli), mercury, and polychlorinated biphenyls (EPA 2021b). Other impaired waters within the Project Area include Castleberry Creek, Cyprus Ditch, Dixon Ditch, Persimmon Pond Ditch, McFadden Creek, and the respective associated tributaries, which are all impaired for recreation due to E. coli (EPA 2021c, EPA 2021d). The EPA source did not list probable sources contributing to the impaired waters.

3.2.1 Agency Comment

The IDNR provided an Environmental Review on May 15, 2021 that recommended appropriately designed measures for controlling erosion and sediment should be implemented to prevent sediment from entering the stream

or leaving the construction site, and these measures should be maintained until construction is complete and all disturbed areas are stabilized (see Section 2.6.3.4; Appendix D).

3.2.2 Avoidance, Minimization, and Mitigation

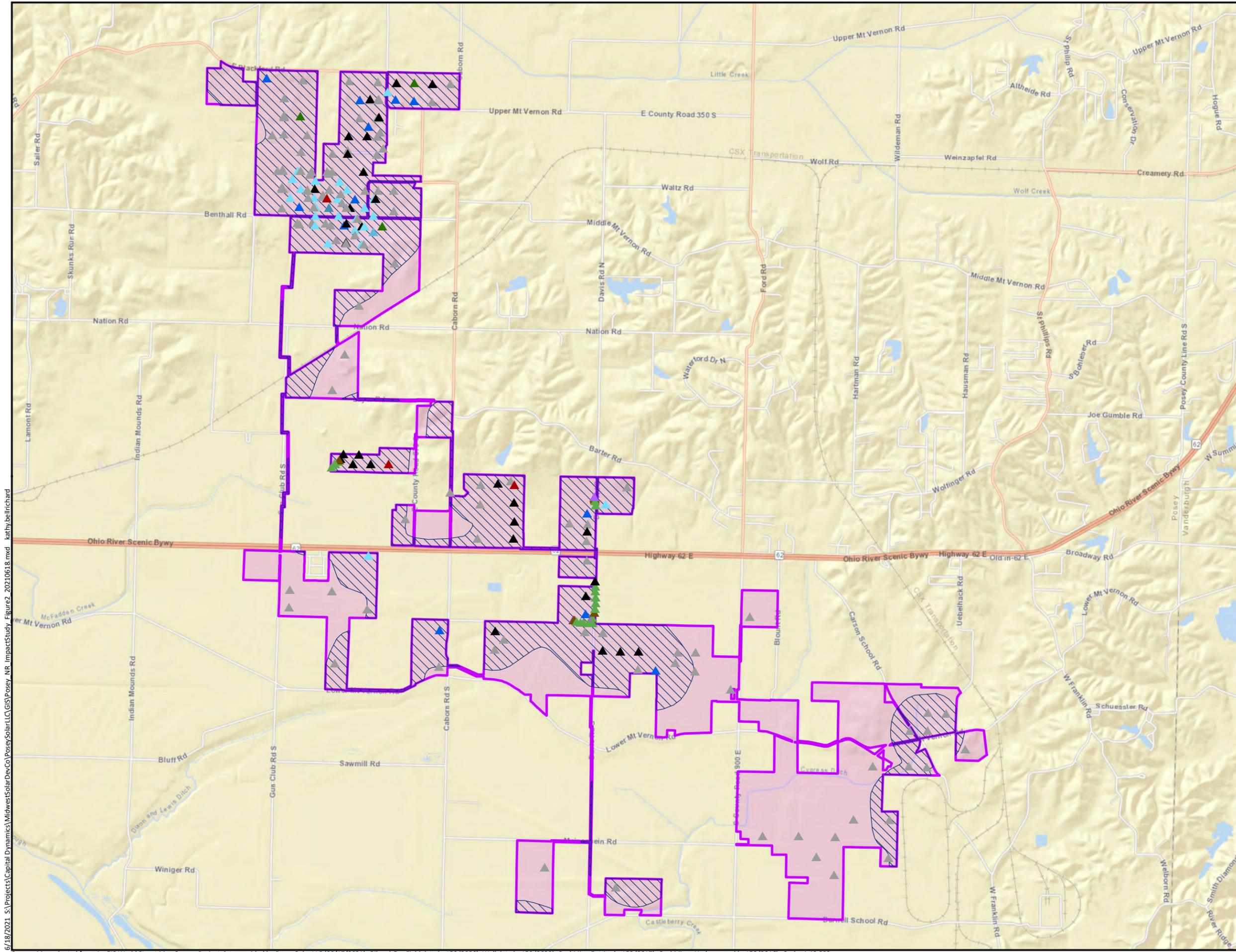
A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and implemented during construction of the proposed Project to minimize any potential soil erosion that might otherwise temporarily impact local water quality. As a result, the potential for water quality degradation due to erosion and sedimentation from Project related construction activity is expected to be negligible. Perennial vegetation established in the Project Area during operation may result in a decrease in soil erosion compared to the current agricultural conditions resulting in a benefit to local surface water quality. Additionally, construction of the proposed Project will result in minimal new impervious areas.

4.0 REFERENCES

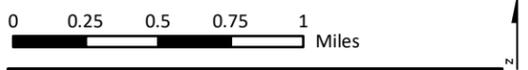
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APPENDIX A. FIGURES



- Project Area (3,530 acres)
- Petroleum Field
- Well Classification**
- ▲ Dry or Abandoned Oil and Gas
- ▲ Active Oil and Gas
- ▲ PATH
- ▲ Unclassified
- ▲ Abandoned Water Injection
- ▲ Water Injection
- ▲ Permitted Location
- ▲ Surface
- ▲ Abandoned Saltwater Disposal
- ▲ Non-potable Water Supply
- ▲ Temporary Abandoned Water Injection Well

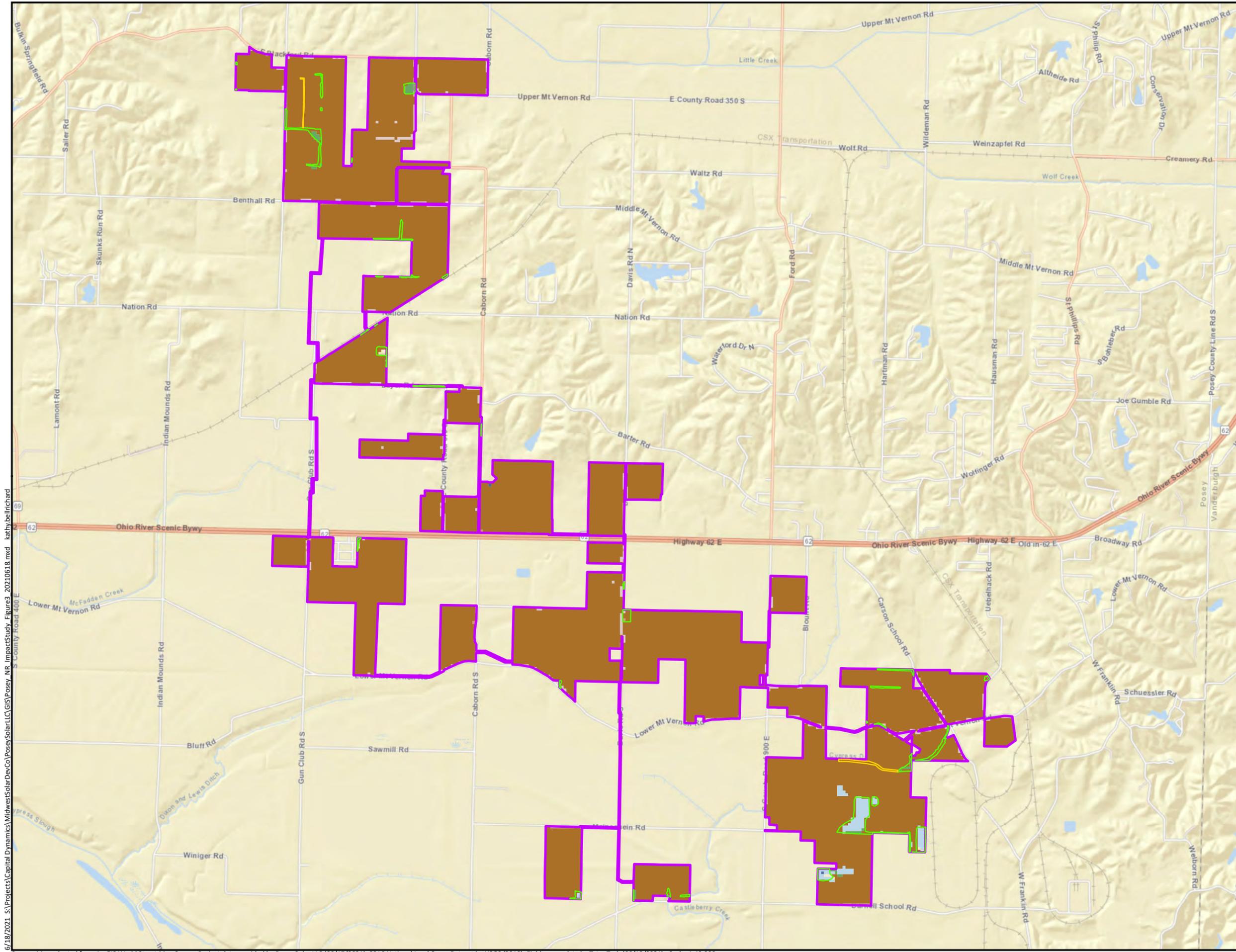


**Figure 2: Geologic Resources
Posey Solar
Posey County, Indiana**

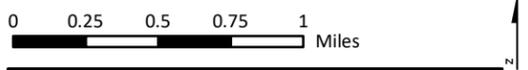


6/18/2021 S:\Projects\Capital Dynamics\MidwestSolarDev\Co\PoseySolar\GIS\ImpactStudy_Figure2_20210618.mxd kathybellrichard

Source: Map adapted from ArcGIS World Street Map Server; Project data provided by Posey Solar LLC (06/17/2021); Oil and Gas Field data by IGS (2020); Well data by IGS (2020); Coal Mine Entries by IGS (2017); Coal Mines Underground by IGS (2016). Scale: 1:40,000.



- Project Area (3,530 acres)
- Natural Resources Survey**
- Deciduous Forest/Mixed Forest
- Grassland/Herbaceous
- NLCD**
- Open Water
- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed, High Intensity
- Barren Land
- Deciduous Forest
- Evergreen Forest
- Herbaceous
- Hay/Pasture
- Cultivated Crops
- Woody Wetlands
- Emergent Herbaceous Wetlands

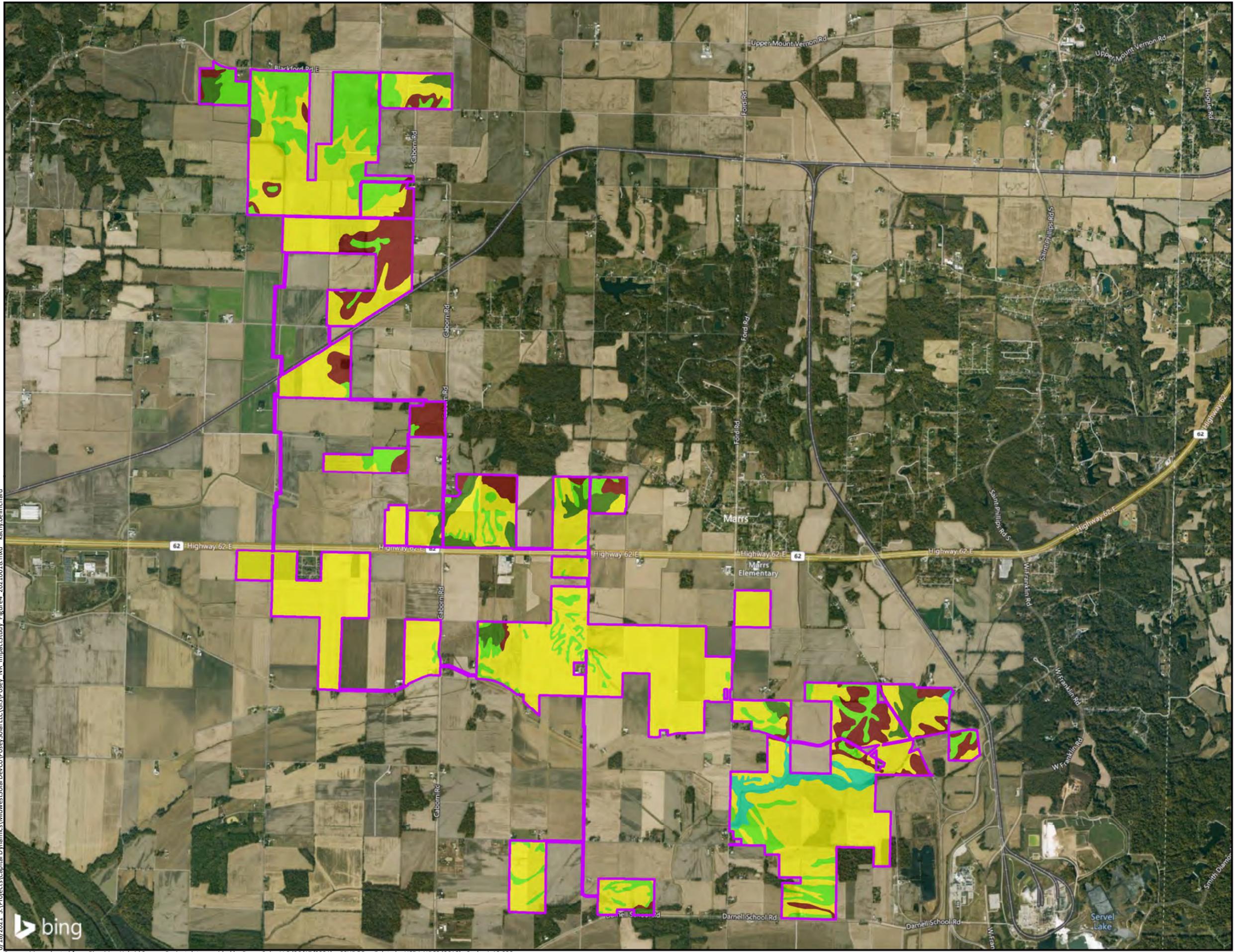


**Figure 3: Land Cover
Posey Solar
Posey County, Indiana**

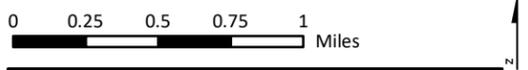


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Source: Map adapted from ArcGIS World Street Map Server; Project data provided by Posey Solar LLC (06/17/2021); 2016 National Land Cover Dataset by USGS (2019); Field survey data by Tetra Tech (06/18/2021). Scale: 1:40,000.



- Project Area (3,530 acres)
- Prime Farmland
- Prime Farmland if Drained
- Prime Farmland if Drained and Protected from Flooding
- Prime Farmland if Protected from Flooding
- Not Prime Farmland

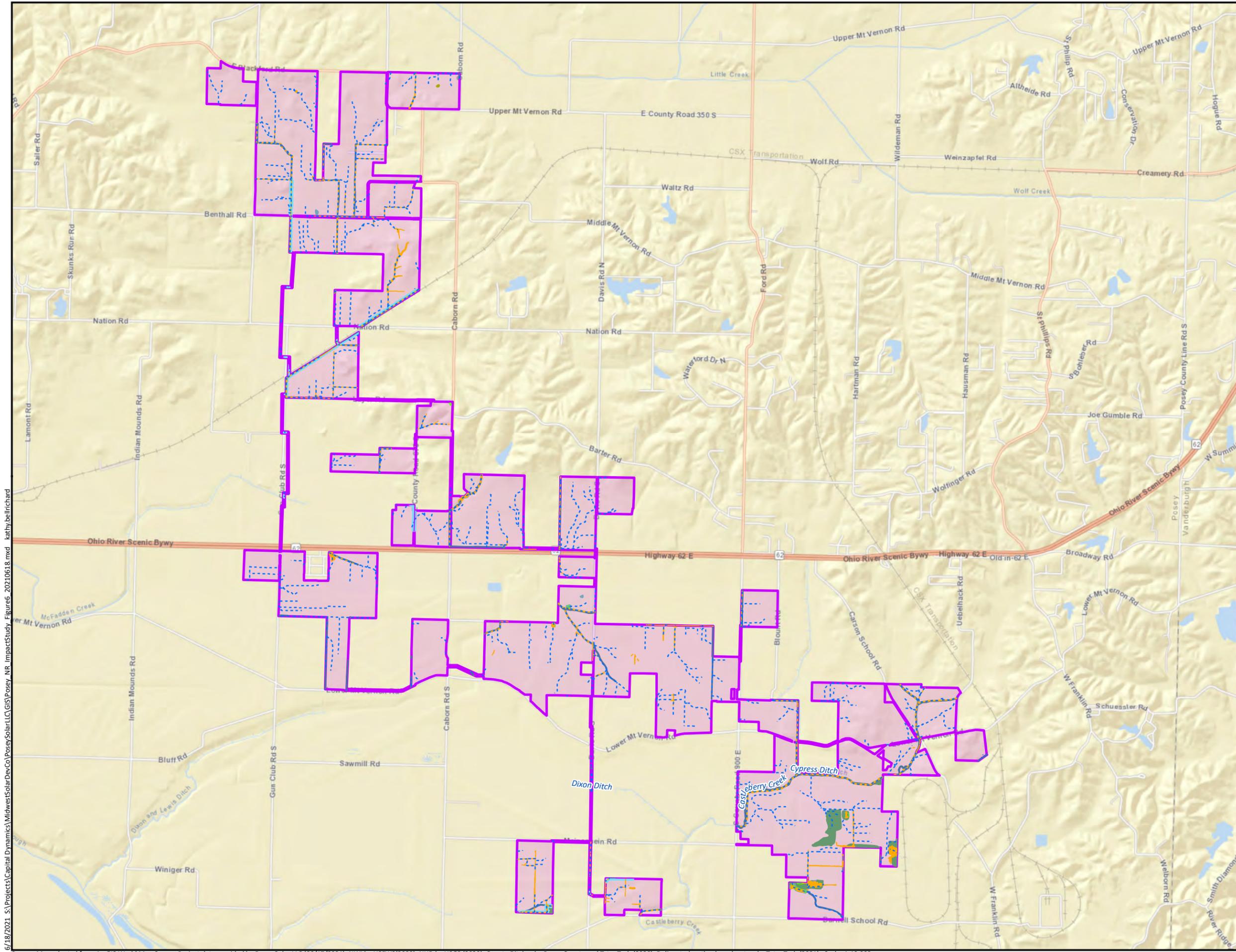


**Figure 4: Farmland Soil Classification
Posey Solar
Posey County, Indiana**

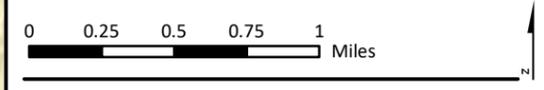
6/18/2021 S:\Projects\Capital Dynamics\MidwestSolarDev\Co\PoseySolar\GIS\Posey_NR_ImpactStudy_Figure4_20210618.mxd kathybellrichard



Source: Map adapted from Bing Map Hybrid Server; Project data provided by Posey Solar LLC (06/17/2021); gSSURGO soil data by USDA NRCS (2018). Scale: 1:40,000.



- Project Area (3,530 acres)
 - NHD Flowline
 - Field Delineated Wetlands and Waters
 - IGS Waterbody
 - Regulated Drain Avoidance Area
- NWI Classification**
- Riverine
 - Freshwater Pond
 - Freshwater Forested/Shrub Wetland
 - Freshwater Emergent Wetland



**Figure 6: Wetlands and Waters
Posey Solar
Posey County, Indiana**



6/18/2021 S:\Projects\Capital Dynamics\MidwestSolarDev\Co\PoseySolar\GIS\GIS\Posey_NR_ImpactStudy_Figure6_20210618.mxd kathybellrichard

Source: Map adapted from ArcGIS World Map Server; Project data provided by Posey Solar LLC (06/17/2021); NWI by USFWS(2020); NHD by USGS (2020); County Ditches by Posey County and Tetra Tech (2020); Delineated wetlands and waters by Tetra Tech (2021). Scale: 1:40,000.

APPENDIX B. FEMA FIRM PANELS

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Indiana State Plane West Zone (FIPS zone 1302). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

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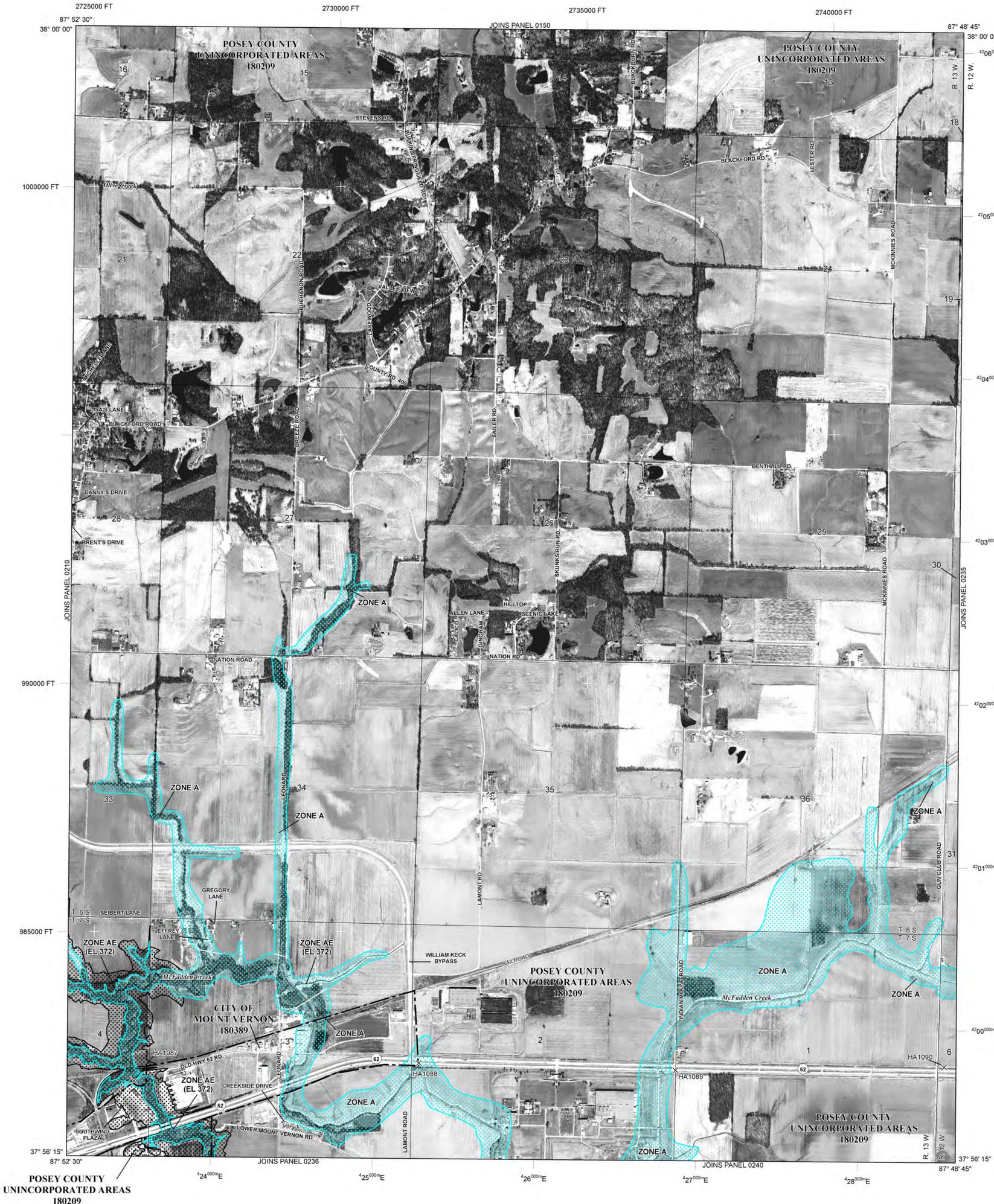
The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

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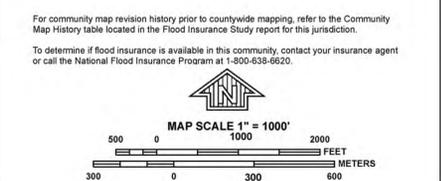
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LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAS) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently destroyed. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood. Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE A99** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
- The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS
- ZONE D** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE X** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
- OTHERWISE PROTECTED AREAS (OPAs)
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*
- *Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line
- Culvert
- Bridge
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
- 1000-meter Universal Transverse Mercator grid values, zone 16
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile
- MAP REPOSITORIES
- Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0230C

FIRM

FLOOD INSURANCE RATE MAP

POSEY COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 230 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MOUNT VERNON, CITY OF	180389	0230	C
POSEY COUNTY	180209	0230	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 18129C0230C
EFFECTIVE DATE NOVEMBER 5, 2014
Federal Emergency Management Agency

NOTES TO USERS

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Coastal Base Flood Elevations shown on this map apply only landward of 0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Indiana State Plane West Zone (FIPS zone 1302). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

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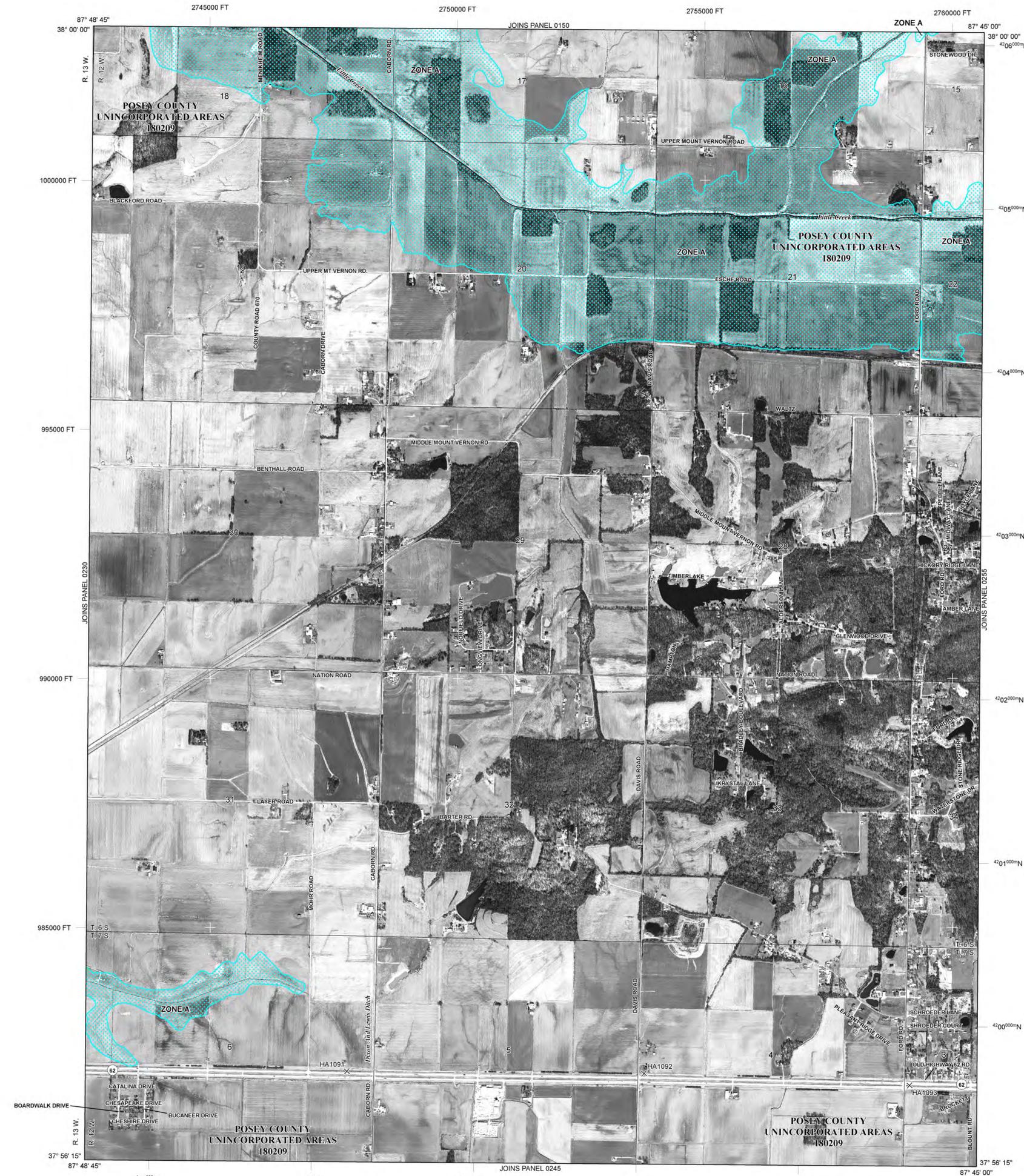
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LEGEND

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- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
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- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE D** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE X** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
- OTHERWISE PROTECTED AREAS (OPAs)
CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway Boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- Culvert
- Bridge
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
- 1000-meter Universal Transverse Mercator grid values, zone 16
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River Mile
- MAP REPOSITORIES
Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PANEL 0235C

FIRM
FLOOD INSURANCE RATE MAP
POSEY COUNTY,
INDIANA
AND INCORPORATED AREAS

PANEL 235 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
POSEY COUNTY	180209	0235	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
18129C0235C
EFFECTIVE DATE
NOVEMBER 5, 2014
Federal Emergency Management Agency

NOTES TO USERS

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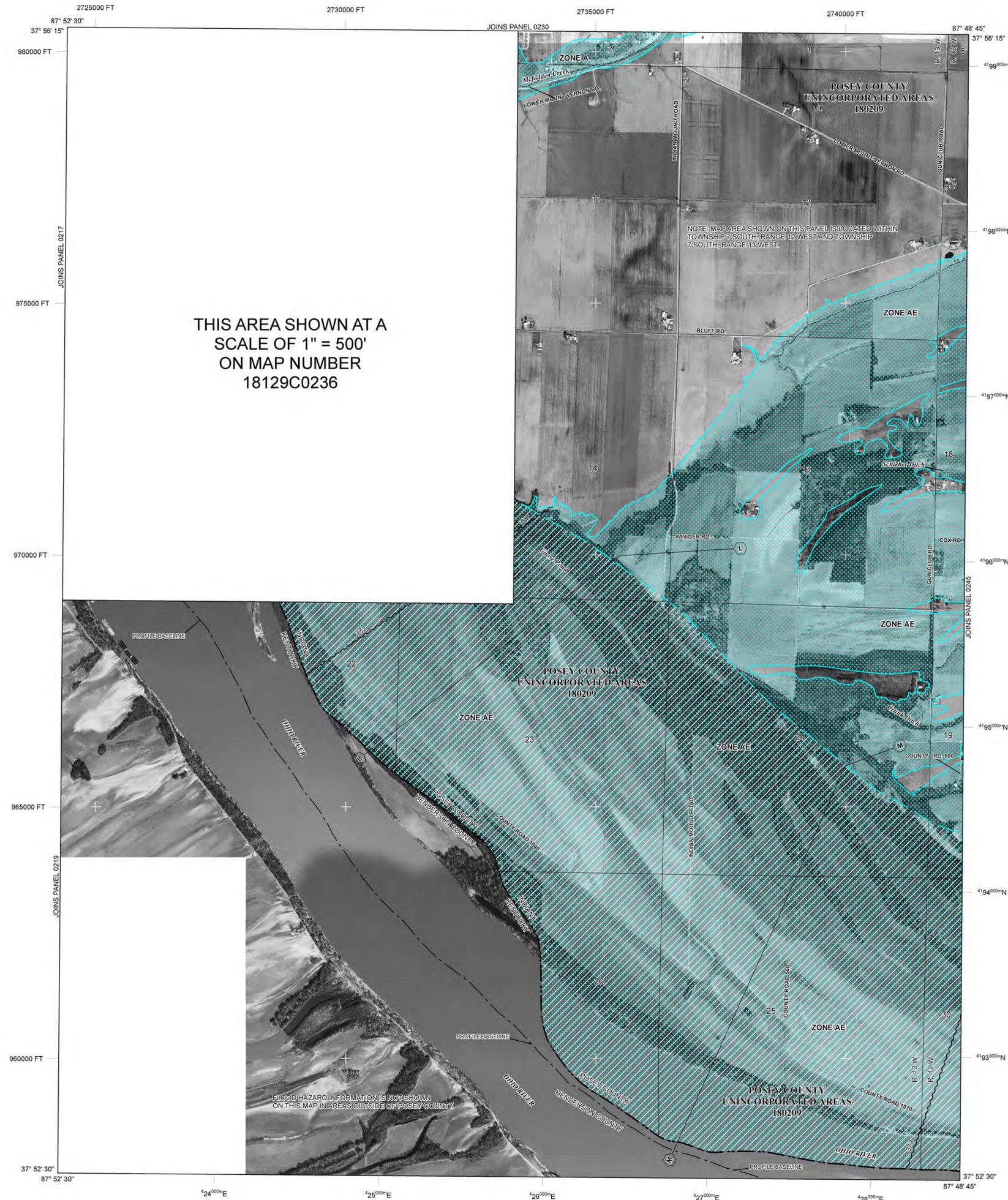
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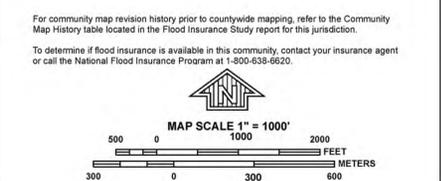
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LEGEND

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- ZONE A** No Base Flood Elevations determined.
 - ZONE AE** Base Flood Elevations determined.
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 - ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
 - ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
 - ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
 - ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE**
The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
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 - Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
 - Base Flood Elevation line and value; elevation in feet*
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- *Referenced to the North American Vertical Datum of 1988
- A ○ A Cross section line
 - 23 23 Transect line
 - Culvert
 - Bridge
 - 45° 02' 08", 93° 02' 12" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
 - 3100000 FT 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
 - 4990000 N 1000-meter Universal Transverse Mercator grid values, zone 16
 - DX5510 X Bench mark (see explanation in Notes to Users section of this FIRM panel)
 - M1.5 River Mile
- Refer to Map Repositories list on Map Index
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
November 5, 2014
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0240C

FIRM
FLOOD INSURANCE RATE MAP
POSEY COUNTY,
INDIANA
AND INCORPORATED AREAS

PANEL 240 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
POSEY COUNTY	181209	0240	C

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MAP NUMBER
18129C0240C
EFFECTIVE DATE
NOVEMBER 5, 2014
Federal Emergency Management Agency

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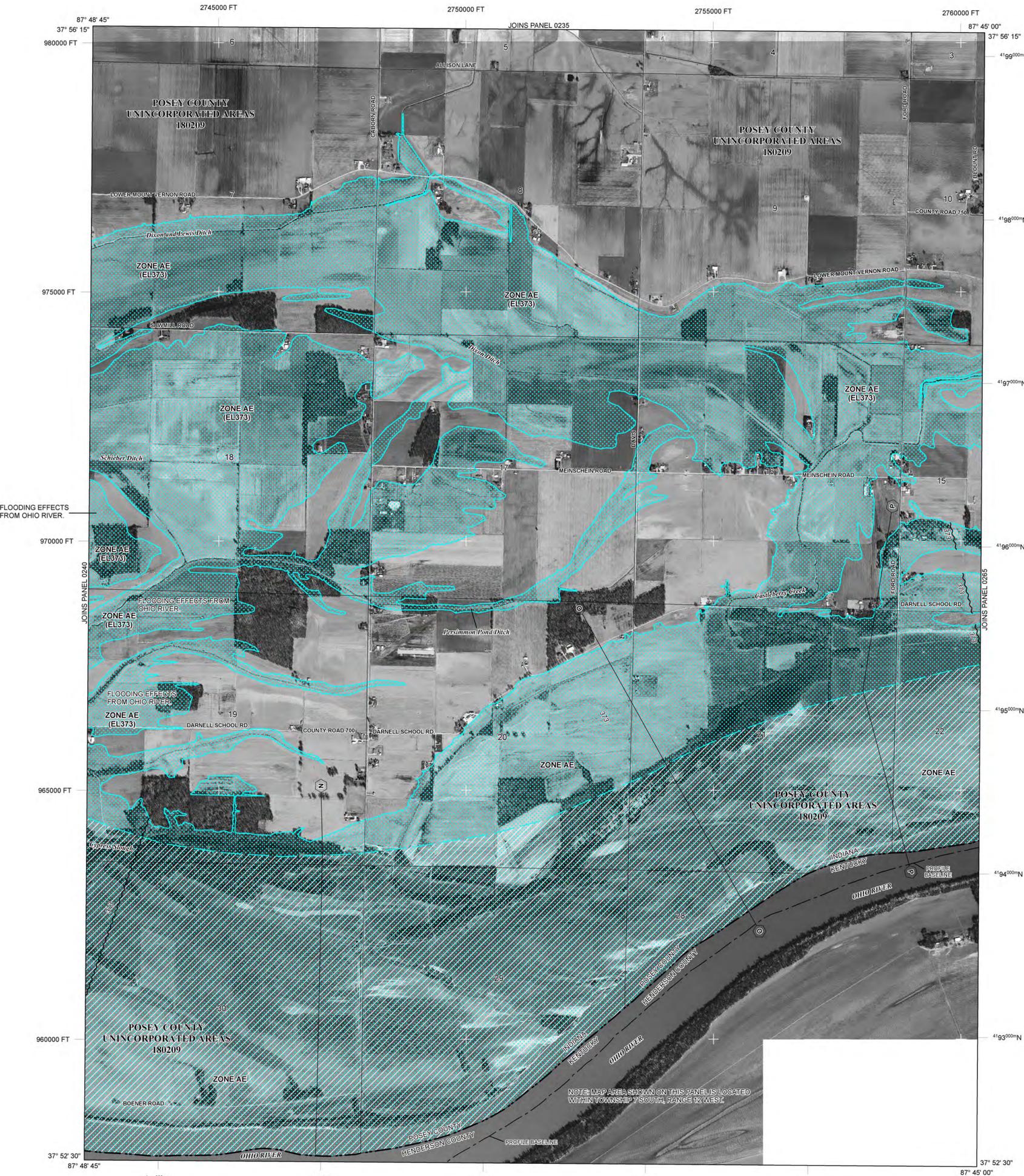
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- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
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- ZONE AR** Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.
- OTHER FLOOD AREAS**
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS. CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- OTHERWISE PROTECTED AREAS (OPAs). OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% Annual Chance Floodplain Boundary
- 0.2% Annual Chance Floodplain Boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- Culvert
- Bridge
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 3100000 FT
- 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
- 1000-meter Universal Transverse Mercator grid values, zone 16
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River mile
- MAP REPOSITORIES. Refer to Map Repositories list on Map Index.
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: November 5, 2014
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0245C

FIRM

FLOOD INSURANCE RATE MAP

POSEY COUNTY, INDIANA AND INCORPORATED AREAS

PANEL 245 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:	COMMUNITY	NUMBER	PANEL	SUFFIX
	POSEY COUNTY	180209	0245	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 18129C0245C

EFFECTIVE DATE NOVEMBER 5, 2014

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Indiana State Plane West Zone (FIPS zone 1302). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at <http://www.ngs.noaa.gov>.

Base map information shown on this FIRM was derived from the 2005 Indiana Orthophotography (IndianaMap Framework Data www.indianamap.org). This information was photogrammetrically compiled at a scale of 1:2400 from aerial photography dated spring 2005.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

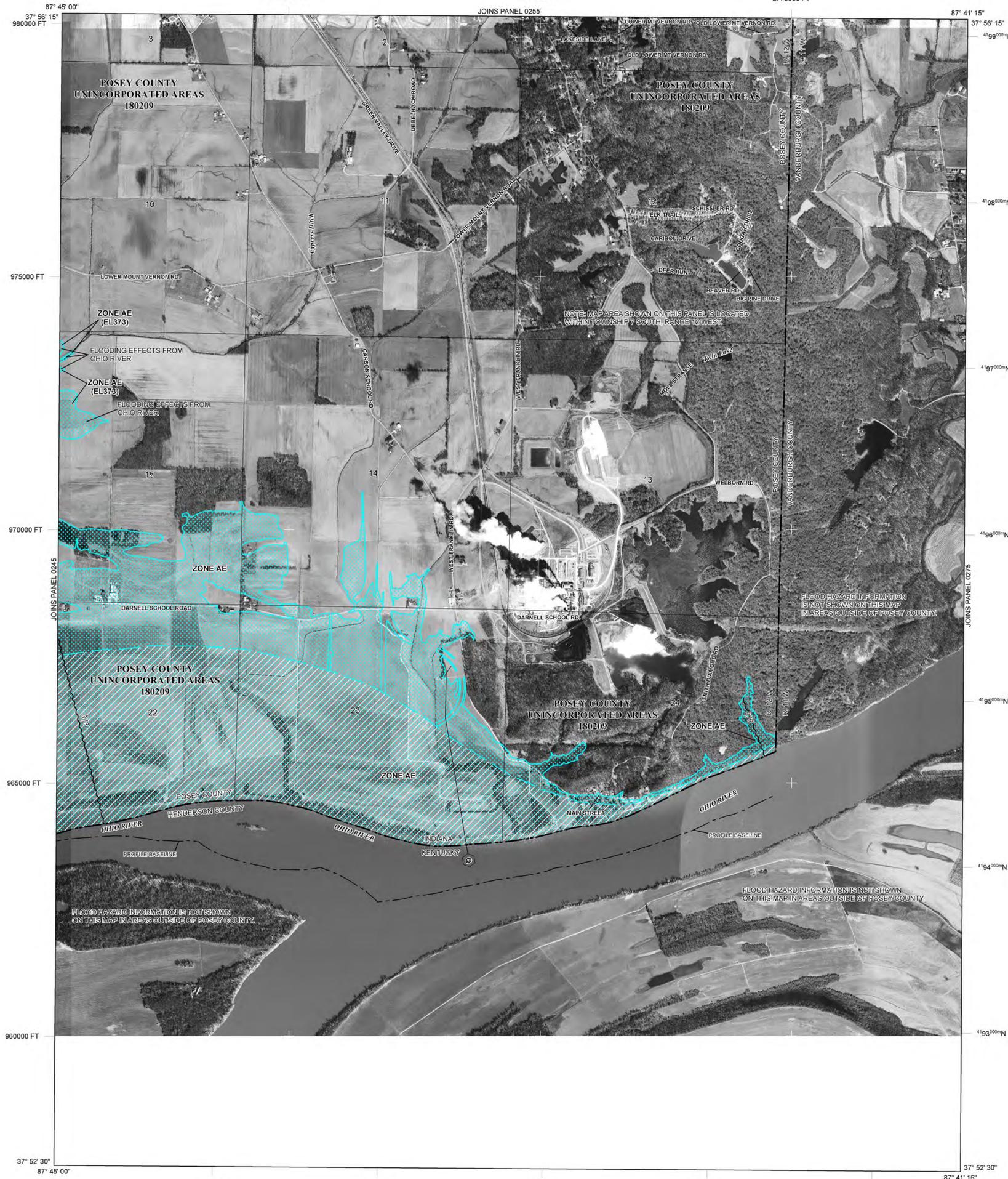
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at <http://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/infp>.

2765000 FT 2770000 FT 2775000 FT



LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD. The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
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- OTHER FLOOD AREAS
- ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- OTHER AREAS**
- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.
- COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS
- OTHERWISE PROTECTED AREAS (OPAs)
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- 0.2% Annual Chance Floodplain Boundary
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- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
- Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- Cross section line
- Transect line
- Culvert
- Bridge
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
- 3100000 FT
- 5000-foot ticks: Indiana State Plane West Zone (FIPS Zone 1302), Transverse Mercator projection
- 1000-meter Universal Transverse Mercator grid values, zone 16
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- River mile
- MAP REPOSITORIES. Refer to Map Repositories list on Map Index.
- EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: November 5, 2014
- EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PANEL 0265C

FIRM
FLOOD INSURANCE RATE MAP
POSEY COUNTY,
INDIANA
AND INCORPORATED AREAS

PANEL 265 OF 325
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:	COMMUNITY	NUMBER	PANEL	SUFFIX
	POSEY COUNTY	180209	0265	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
18129C0265C
EFFECTIVE DATE
NOVEMBER 5, 2014

Federal Emergency Management Agency

APPENDIX C: IPAC AND IDNR DATA RESPONSES



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

Phone: (812) 334-4261 Fax: (812) 334-4273

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>

In Reply Refer To:

March 16, 2021

Consultation Code: 03E12000-2021-SLI-0963

Event Code: 03E12000-2021-E-04522

Project Name: Posey

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:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website <http://ecos.fws.gov/ipac/> at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service’s Region 3 Section 7 Technical Assistance website at - <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. This website contains step-by-step instructions which will help you determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html> to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

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:

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

(812) 334-4261

Project Summary

Consultation Code: 03E12000-2021-SLI-0963

Event Code: 03E12000-2021-E-04522

Project Name: Posey

Project Type: POWER GENERATION

Project Description: Solar

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@37.9498215,-87.77973986833089,14z>



Counties: Posey County, Indiana

Endangered Species Act Species

There is a total of 2 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. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, 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.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Incidental take of the NLEB is not prohibited here. Federal agencies may consult using the 4(d) rule streamlined process. Transportation projects may consult using the programmatic process. See www.fws.gov/midwest/endangered/mammals/nleb/index.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

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

Indiana County Endangered, Threatened and Rare Species List

County: Posey



Species Name	Common Name	FED	STATE	GRANK	SRANK
Crustacean: Malacostraca					
<i>Orconectes indianensis</i>	Indiana Crayfish		SR	G3	S2
Mollusk: Bivalvia (Mussels)					
<i>Arcidens confragosus</i>	Rock Pocketbook			G4	S2
<i>Cumberlandia monodonta</i>	Spectaclecase	LE	SX	G3	SX
<i>Cyprogenia stegaria</i>	Eastern Fanshell Pearlymussel	LE	SE	G1Q	S1
<i>Epioblasma flexuosa</i>	Leafshell		SX	GX	SX
<i>Epioblasma propinqua</i>	Tennessee Riffleshell		SX	GX	SX
<i>Epioblasma sampsonii</i>	Wabash Riffleshell		SX	GX	SX
<i>Epioblasma torulosa</i>	Tubercled Blossom	LE	SX	GX	SX
<i>Epioblasma triquetra</i>	Snuffbox	LE	SE	G3	S1
<i>Fusconaia subrotunda</i>	Longsolid	C	SX	G3	SX
<i>Lampsilis abrupta</i>	Pink Mucket	LE	SX	G2	SX
<i>Lampsilis ovata</i>	Pocketbook		SSC	G5	S2
<i>Leptodea leptodon</i>	Scaleshell	LE	SX	G1G2	SX
<i>Ligumia recta</i>	Black Sandshell		SSC	G4G5	S2
<i>Obovaria retusa</i>	Ring Pink	LE	SX	G1	SX
<i>Obovaria subrotunda</i>	Round Hickorynut	C	SE	G4	S1
<i>Plethobasus cicatricosus</i>	White Wartyback	LE	SX	G1	SX
<i>Plethobasus cooperianus</i>	Orangefoot Pimpleback	LE	SX	G1	SX
<i>Plethobasus cyphus</i>	Sheepnose	LE	SE	G3	S1
<i>Pleurobema clava</i>	Clubshell	LE	SE	G1G2	S1
<i>Pleurobema cordatum</i>	Ohio Pigtoe		SSC	G4	S2
<i>Pleurobema plenum</i>	Rough Pigtoe	LE	SE	G1	S1
<i>Pleurobema rubrum</i>	Pyramid Pigtoe		SX	G2G3	SX
<i>Potamilus capax</i>	Fat Pocketbook	LE	SE	G2	S1
<i>Ptychobranhus fasciolaris</i>	Kidneyshell		SSC	G4G5	S2
<i>Simpsonaias ambigua</i>	Salamander Mussel	C	SSC	G3	S2
<i>Theliderma cylindrica</i>	Rabbitsfoot	LT	SE	G3G4	S1
<i>Toxolasma lividus</i>	Purple Lilliput	C	SSC	G3Q	S2
<i>Villosa fabalis</i>	Rayed Bean	LE	SE	G2	S1
Mollusk: Gastropoda					
<i>Catinella gelida</i>	Frigid ambersnail			G1Q	SH
<i>Xolotrema obstrictum</i>	Sharp Wedge		SE	G4	S1
Insect: Coleoptera (Beetles)					
<i>Necrophilus pettiti</i>	A Carrion Beetle		ST	GNR	S1?
<i>Nicrophorus americanus</i>	American Burying Beetle	LE	SX	G3	SX
<i>Photuris walldoxei</i>	Cypress firefly		WL	GNR	SU
Insect: Ephemeroptera (Mayflies)					
<i>Labiobaetis longipalpus</i>	Big River Small Minnow Mayfly			G4	S2

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting
State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list
GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank
SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Indiana County Endangered, Threatened and Rare Species List

County: Posey



Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Pentagenia vittigera</i>	common spiny-headed burrowing mayfly		WL	G5	S3
<i>Tortopsis primus</i>	Manitoba White Burrowing Mayfly		ST	G5	S1
Insect: Hymenoptera					
<i>Bombus fraternus</i>	Southern Plains Bumble Bee		SE	G2G4	S1
Insect: Lepidoptera (Butterflies & Moths)					
<i>Catocala marmorata</i>	Marbled Underwing Moth		SE	G3G4	S1
<i>Eosphoropteryx thyatyroides</i>	Pinkpatched Looper Moth		ST	G4G5	S2
<i>Hyperaeschra georgica</i>	A Prominent Moth		ST	G5	S2
<i>Lesmone detrahens</i>	Detracted Owllet		SR	G5	S2
<i>Lethe appalachia appalachia</i>	Appalachian Eyed Brown		ST	G4T4	S2
Fish					
<i>Acipenser fulvescens</i>	Lake Sturgeon		SE	G3G4	S1
<i>Ammocrypta clara</i>	Western Sand Darter		SSC	G3	S2
<i>Crystallaria asprella</i>	Crystal Darter			G3	SX
<i>Elassoma zonatum</i>	Banded Pygmy Sunfish		SSC	G5	S1
<i>Etheostoma squamiceps</i>	Spottail Darter			G4G5	S2S3
<i>Percina evides</i>	Gilt Darter		SE	G4	S1
<i>Percina uranidea</i>	Stargazing Darter			G3	SX
Amphibian					
<i>Acris blanchardi</i>	Blanchard's Cricket Frog		SSC	G5	S4
<i>Ambystoma talpoideum</i>	Mole Salamander		SE	G5	S1
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	C	SE	G3T2	S1
Reptile					
<i>Crotalus horridus</i>	Timber Rattlesnake		SE	G4	S2
<i>Kinosternon subrubrum subrubrum</i>	Eastern Mud Turtle		SE	G5T5	S2
<i>Macrochelys temminckii</i>	Alligator Snapping Turtle	C	SE	G3G4	SH
<i>Nerodia erythrogaster neglecta</i>	Copperbelly Water Snake	PS:LT	SE	G5T3	S2
<i>Opheodrys vernalis</i>	Smooth Green Snake		SE	G5	S2
<i>Pseudemys concinna concinna</i>	Eastern River Cooter		SE	G5T5	S1
<i>Terrapene carolina carolina</i>	Eastern Box Turtle		SSC	G5T5	S3
<i>Thamnophis proximus proximus</i>	Western Ribbon Snake		SSC	G5T5	S3
Bird					
<i>Ardea alba</i>	Great Egret		SSC	G5	S1B
<i>Certhia americana</i>	Brown Creeper			G5	S2B
<i>Gavia immer</i>	Common Loon		SX	G5	SXB
<i>Haliaeetus leucocephalus</i>	Bald Eagle		SSC	G5	S2
<i>Ictinia mississippiensis</i>	Mississippi Kite		SSC	G5	S1B
<i>Ixobrychus exilis</i>	Least Bittern		SE	G4G5	S3B

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 Indiana Department of Natural Resources
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Indiana County Endangered, Threatened and Rare Species List

County: Posey



Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Lanius ludovicianus</i>	Loggerhead Shrike		SE	G4	S3B
<i>Lophodytes cucullatus</i>	Hooded Merganser			G5	S2S3B
<i>Nyctanassa violacea</i>	Yellow-crowned Night-heron		SE	G5	S2B
<i>Pandion haliaetus</i>	Osprey		SSC	G5	S1B
<i>Setophaga cerulea</i>	Cerulean Warbler		SE	G4	S3B
<i>Sternula antillarum athalassos</i>	Interior Least Tern	LE	SE	G4T3Q	S1B
Mammal					
<i>Myotis sodalis</i>	Indiana Bat	LE	SE	G2	S1
<i>Nycticeius humeralis</i>	Evening Bat		SE	G5	S1
<i>Sylvilagus aquaticus</i>	Swamp Rabbit		SE	G5	S1
<i>Taxidea taxus</i>	American Badger		SSC	G5	S2
Vascular Plant					
<i>Actaea rubifolia</i>	Appalachian bugbane		SE	G3	S1
<i>Azolla caroliniana</i>	Carolina mosquito-fern		ST	G5	S3
<i>Calycocarpum lyonii</i>	cup-seed		ST	G5	S2
<i>Carex aureolensis</i>	land of gold sedge		SE	GNR	S1
<i>Carex bushii</i>	Bush's sedge		ST	G4	S2
<i>Carex gigantea</i>	large sedge		SE	G4	S1
<i>Carex lupuliformis</i>	false hop sedge		ST	G4	S2
<i>Carex socialis</i>	social sedge		ST	G4	S2
<i>Catalpa speciosa</i>	northern catalpa		ST	G4?	S3
<i>Chamaelirium luteum</i>	devil's-bit		SE	G5	S1
<i>Chelone obliqua var. speciosa</i>	rose turtlehead		WL	G4T3	S3
<i>Clematis pitcheri</i>	Pitcher's leather-flower		ST	G4G5	S3
<i>Crataegus viridis var. viridis</i>	green hawthorn		ST	G5T5	S2
<i>Cuscuta cuspidata</i>	cuspid dodder		SE	G5	S1
<i>Cyperus acuminatus</i>	short-point flatsedge		WL	G5	S3
<i>Cyperus pseudovegetus</i>	green flatsedge		ST	G5	S3
<i>Dichanthelium scoparium</i>	broom panic-grass		SE	G5	S1
<i>Didiplis diandra</i>	water-purslane		SE	G5	S1
<i>Diervilla lonicera</i>	northern bush-honeysuckle		WL	G5	S3
<i>Echinodorus cordifolius</i>	creeping bur-head		SE	G5	S1
<i>Eleocharis wolfii</i>	Wolf's spikerush		ST	G3G5	S2
<i>Festuca paradoxa</i>	cluster fescue		ST	G5	S2
<i>Gleditsia aquatica</i>	water-locust		SE	G5	S1
<i>Hottonia inflata</i>	featherfoil		ST	G4	S2
<i>Hypericum virgatum</i>	coppery St. John's-wort		ST	G4?	S2
<i>Iresine rhizomatosa</i>	eastern bloodleaf		ST	G5	S3
<i>Isoetes melanopoda</i>	blackfoot quillwort		ST	G5	S2
<i>Lemna minuta</i>	least duckweed		SE	G4	S1

Indiana Natural Heritage Data Center
 Division of Nature Preserves
 Indiana Department of Natural Resources
 This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting
 State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list
 GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long-term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank
 SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long-term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked

Indiana County Endangered, Threatened and Rare Species List

County: Posey



Species Name	Common Name	FED	STATE	GRANK	SRANK
<i>Leptochloa panicoides</i>	Amazon sprangle-top		SE	G5	S1
<i>Lespedeza stuevei</i>	tall bush-clover		SX	G4?	SX
<i>Ludwigia decurrens</i>	primrose willow		WL	G5	S3
<i>Ludwigia glandulosa</i>	cylindric-fruited seedbox		ST	G5	S2
<i>Monarda bradburiana</i>	eastern bee-balm		SE	G5	S1
<i>Nothoscordum bivalve</i>	crow-poison		ST	G4	S3
<i>Orobanche riparia</i>	bottomland broomrape		SE	G4?	S1
<i>Panax quinquefolius</i>	American ginseng		WL	G3G4	S3
<i>Perideridia americana</i>	eastern eulophus		SE	G4	S1
<i>Physaria globosa</i>	Short's bladderpod	LE	SE	G2	S1
<i>Platanthera flava</i> var. <i>flava</i>	southern rein orchid		SE	G4?T4?Q	S1
<i>Prenanthes aspera</i>	rough rattlesnake-root		ST	G4?	S3
<i>Ranunculus laxicaulis</i>	Mississippi buttercup		SE	G5?	S1
<i>Ranunculus pusillus</i>	Pursh's buttercup		SE	G5	S1
<i>Rhynchospora corniculata</i>	short-bristle hornedrush		ST	G5	S2
<i>Sagittaria ambigua</i>	Kansas arrowhead		SX	G2?	SX
<i>Scutellaria parvula</i> var. <i>australis</i>	southern skullcap		WL	G4T4?	S2
<i>Solidago buckleyi</i>	Buckley's goldenrod		SE	G4	S1
<i>Spigelia marilandica</i>	woodland pinkroot		SE	G4	S1
<i>Styrax americanus</i>	American snowbell		ST	G5	S3
<i>Taxodium distichum</i> var. <i>distichum</i>	bald cypress		ST	G5	S2
<i>Thalictrum pubescens</i>	tall meadowrue		ST	G5	S3
<i>Thyrsanthella difformis</i>	climbing dogbane		ST	G4G5	S3
<i>Trifolium reflexum</i> var. <i>glabrum</i>	buffalo clover		SE	G3G4T2T4Q	S1
<i>Vitis palmata</i>	catbird grape		ST	G4	S3
<i>Wisteria frutescens</i>	American wisteria		ST	G5	S3
High Quality Natural Community					
<i>Forest - flatwoods southwestern lowland mesic</i>	Mesic Southwestern Lowland Flatwoods		SG	G2?	S1
<i>Forest - floodplain wet-mesic</i>	Wet-mesic Floodplain Forest		SG	G3?	S3
<i>Forest - upland mesic Southern Bottomlands</i>	Southern Bottomlands Mesic Upland Forest		SG	GNR	S1
<i>Wetland - swamp forest</i>	Forested Swamp		SG	G2?	S2
<i>Wetland - swamp shrub</i>	Shrub Swamp		SG	GU	S2
Other Significant Feature					
<i>Geomorphic - Nonglacial Erosional Feature - Water Fall and Cascade</i>	Water Fall and Cascade			GNR	SNR

Indiana Natural Heritage Data Center
 Division of Nature Preserves
 Indiana Department of Natural Resources
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APPENDIX D. AGENCY CORRESPONDANCE



March 17, 2021

Sam Werner, Project Manager
U.S. Army Corps of Engineers
Newburgh Regulatory Office
6855 State Road 66 East
Newburgh, IN 47630

RE: Request for Comments on Posey Solar Project in Posey County, Indiana

Dear Sam Werner:

Tetra Tech Inc., on behalf of Posey Solar LLC (Posey Solar), is gathering information and requesting agency comments for the proposed Posey Solar Project (Project) in southeast Posey County, Indiana. The purpose of this letter is to inform your organization of the proposed Project as required by Posey County ordinance Development Plan Application, seek your input regarding any permits or approvals that may be required, and identify known resources under your agency's jurisdiction that may be in the study area (herein described) or surrounding vicinity that could be materially affected.

The Project has a proposed nameplate energy generation capacity of up to 300 megawatts (MW) alternating current (AC). An area of approximately 8,300 acres is being evaluated for siting the Project (Study Area). The design of the Project is still being finalized, and the cumulative footprint of the Project is estimated to be approximately 2,400 acres (Project Area) within the Study Area. The Project is located east of the city of Mt. Vernon and west of the city of Evansville. A map of the Study Area location and boundary is enclosed for your reference (**Figure 1**).

Land use within the Project Area is currently row-crop agriculture.

The Project's facilities may include:

- Solar modules, inverters, and racking;
- Fencing;
- Access roads;
- Operations and Maintenance (O&M) building;
- Project substation;
- Power transformer;
- Transmission line;
- On-site electrical collection lines; and
- Ancillary equipment or buildings as necessary.

The proposed Project solar array layout and other facilities' locations have not been finalized at this time. Foundations for the solar arrays will be driven steel piles. Fencing will consist of an appropriately sized fence and material. Gates will be secured with lock boxes. Access will be controlled by the Project owner with access provided to local emergency response officials as needed. Access roads will be installed as necessary to allow access to Project facilities for O&M of the Project. Road design includes stripping the surface vegetation root

zone for the width of the road and placing compacted aggregate over the stabilized subgrade. Mechanical stabilization, such as geotextile reinforcement, may also be employed on top of compacted subgrade before aggregate placement. The electrical collection lines between the solar arrays, inverters and Project's substation will be 34.5 kilovolt (kV) and may be installed aboveground or direct buried at a reasonable and standard industry practice depth. Directional boring may be used to install collectors at some portions of the Project. The Point of Interconnection (POI) will be a new switching station that connects to the existing AB Brown-Gibson 345kV transmission line. The new switching station is planned to be located on the east side of the Project Area approximately 1.5 miles north of the AB Brown 345kV substation, and approximately 36.5 miles south of the Gibson 345kV substation.

We respectfully request your response comments within 30 days of receipt of this letter. Where applicable, written agency comments provided in response to this letter will be incorporated into the Development Plan Application materials that will be submitted to officials in Posey County.

If you require further information or have questions regarding this matter, please contact me at 612-643-2237 or at adam.holven@tetrattech.com.

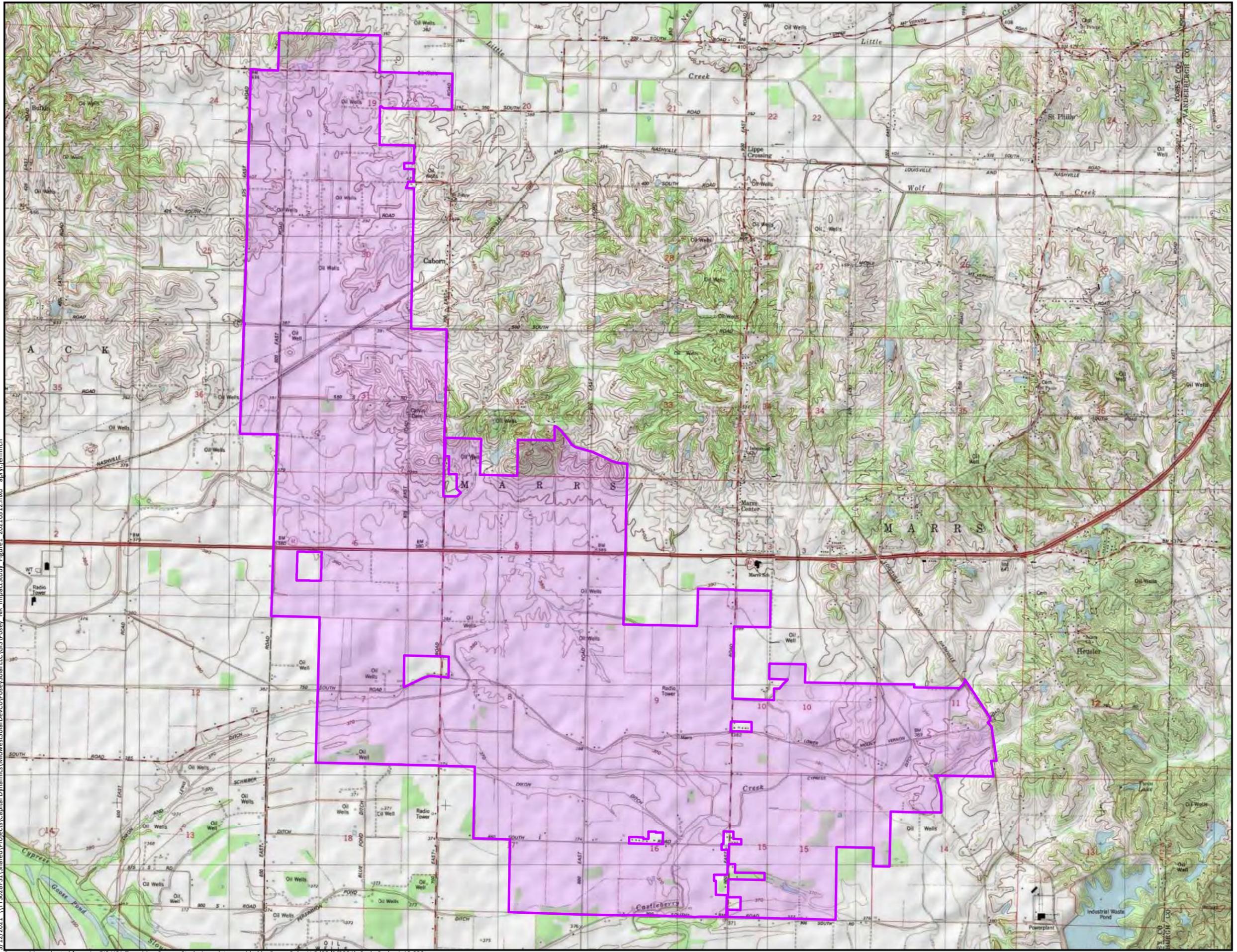
Sincerely,



Adam Holven
Project Manager
Tetra Tech Inc.
2001 Killebrew Drive, Suite 141
Bloomington, Minnesota 55425

Enclosure: Figure 1 - Posey Solar Project Location

3/12/2021 \\TTS028F51\Shared\Projects\Capital Dynamics\MidwestSolarDevCo\PoseySolar\LCGIS\Posey_NR_ImpactStudy_Figure1_20210312.mxd apryl_jennrich



Study Area (8,274 acres)

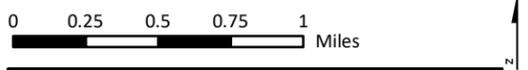


Figure 1: Project Location
Posey Solar LLC
Posey County, Indiana

Source: Map adapted from ArcGIS USA Topo Map Server; Study Area data provided by Posey Solar LLC (03/9/2021); Scale Scale: 1:40,000.



Holven, Adam

From: Werner, Sam E CIV USARMY CELRL (USA) <Sam.E.Werner@usace.army.mil>
Sent: Thursday, March 18, 2021 6:44 AM
To: Holven, Adam
Cc: Barron, Tre M CIV USARMY CELRL (USA)
Subject: RE: Posey Solar Project Request for Comments

⚠ CAUTION: This email originated from an external sender. Verify the source before opening links or attachments. **⚠**

Dear Mr. Holven,

I am in receipt of your request for comments on behalf of Posey Solar LLC. Based on the information submitted by you, it does appear that there are “waters of the U.S.” within your proposed project boundary. Depending on how your project is carried out, a Department of the Army permit may be needed if the project referenced above would involve a discharge of dredged and/or fill material below the Ordinary High Water elevation of any “waters of the United States (U.S.)” or any wetlands. “Waters of the U.S.” include all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce. Multiple streams and potential wetlands appear to be present on the site.

The next step in ensuring the appropriate permits are obtained is to provide to us with a thorough delineation of all “waters of the U.S.” located within the proposed boundaries. The delineation must be conducted IAW the Corps’ 1987 Wetlands Delineation Manual and should include all streams, open waters, and wetlands. A Jurisdictional Determination (preliminary or approved) Form should then be completed with the information obtained from the fieldwork and submitted to this office to verify the presence of the delineated waters.

If the project would necessitate the discharge of dredged or fill material into “waters of the U.S.,” including wetlands, an application and complete plans should then be submitted for our review.

Our comments on this project are limited to only those effects which may fall within our area of jurisdiction and thus does not obviate the need to obtain other permits from State or local agencies. Lack of comments on other environmental aspects should not be construed as either concurrence or nonconcurrence with stated environmental effects.

If we can be of any further assistance, please contact the Newburgh Regulatory Office at 6855 State Road 66, Newburgh, IN 47630-9794, ATTN: CELRL-RDS or contact Ms. Tre Barron at 812 853-9713 or tre.m.barron@usace.army.mil.

Any correspondence on this matter should refer to our ID Number LRL-2021-255.

Sam Werner
U.S. Army Corps of Engineers
6855 State Road 66 East
Newburgh, Indiana 47630
Phone (812) 842-2768
Fax (812) 848-2678

From: Holven, Adam <adam.holven@tetrattech.com>
Sent: Wednesday, March 17, 2021 4:05 PM

To: Werner, Sam E CIV USARMY CELRL (USA) <Sam.E.Werner@usace.army.mil>

Cc: Joshua Chavez <JChavez@arevonenergy.com>; Finocchiaro, Joseph <jfinocchiaro@TENASKA.com>

Subject: [Non-DoD Source] Posey Solar Project Request for Comments

Dear Sam Werner,

Tetra Tech Inc., on behalf of Posey Solar LLC, is gathering information and requesting comments for the proposed Posey Solar Project in Posey County, Indiana. Please see the attached letter and map for additional information. Please direct all questions and comments to:

Adam Holven, Project Manager

Tetra Tech Inc.

2001 Killebrew Drive, Suite 141

Bloomington, MN 55425

adam.holven@tetrattech.com

612-643-2237

Thank you!

Adam C. Holven | Senior Archaeologist/Project Manager

Direct: 612.643.2237 | Main: 612.643.2200 | Fax: 612.643.2201

adam.holven@tetrattech.com

Tetra Tech

2001 Killebrew Drive, Suite 141 | Bloomington, Minnesota 55425 | www.tetrattech.com

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March 17, 2021

Christie Stanifer, Environmental Coordinator
Indiana Department of Natural Resources
Division of Fish & Wildlife
402 W. Washington Street, W273
Indianapolis, IN 46204

RE: Request for Comments on Posey Solar Project in Posey County, Indiana

Dear Christie Stanifer:

Tetra Tech Inc., on behalf of Posey Solar LLC (Posey Solar), is gathering information and requesting agency comments for the proposed Posey Solar Project (Project) in southeast Posey County, Indiana. The purpose of this letter is to inform your organization of the proposed Project as required by Posey County ordinance Development Plan Application, seek your input regarding any permits or approvals that may be required, and identify known resources under your agency's jurisdiction that may be in the study area (herein described) or surrounding vicinity that could be materially affected.

The Project has a proposed nameplate energy generation capacity of up to 300 megawatts (MW) alternating current (AC). An area of approximately 8,300 acres is being evaluated for siting the Project (Study Area). The design of the Project is still being finalized, and the cumulative footprint of the Project is estimated to be approximately 2,400 acres (Project Area) within the Study Area. The Project is located east of the city of Mt. Vernon and west of the city of Evansville. A map of the Study Area location and boundary is enclosed for your reference (**Figure 1**).

Land use within the Project Area is currently row-crop agriculture.

The Project's facilities may include:

- Solar modules, inverters, and racking;
- Fencing;
- Access roads;
- Operations and Maintenance (O&M) building;
- Project substation;
- Power transformer;
- Transmission line;
- On-site electrical collection lines; and
- Ancillary equipment or buildings as necessary.

The proposed Project solar array layout and other facilities' locations have not been finalized at this time. Foundations for the solar arrays will be driven steel piles. Fencing will consist of an appropriately sized fence and material. Gates will be secured with lock boxes. Access will be controlled by the Project owner with access provided to local emergency response officials as needed. Access roads will be installed as necessary to allow access to Project facilities for O&M of the Project. Road design includes stripping the surface vegetation root

zone for the width of the road and placing compacted aggregate over the stabilized subgrade. Mechanical stabilization, such as geotextile reinforcement, may also be employed on top of compacted subgrade before aggregate placement. The electrical collection lines between the solar arrays, inverters and Project's substation will be 34.5 kilovolt (kV) and may be installed aboveground or direct buried at a reasonable and standard industry practice depth. Directional boring may be used to install collectors at some portions of the Project. The Point of Interconnection (POI) will be a new switching station that connects to the existing AB Brown-Gibson 345kV transmission line. The new switching station is planned to be located on the east side of the Project Area approximately 1.5 miles north of the AB Brown 345kV substation, and approximately 36.5 miles south of the Gibson 345kV substation.

We respectfully request your response comments within 30 days of receipt of this letter. Where applicable, written agency comments provided in response to this letter will be incorporated into the Development Plan Application materials that will be submitted to officials in Posey County.

If you require further information or have questions regarding this matter, please contact me at 612-643-2237 or at adam.holven@tetrattech.com.

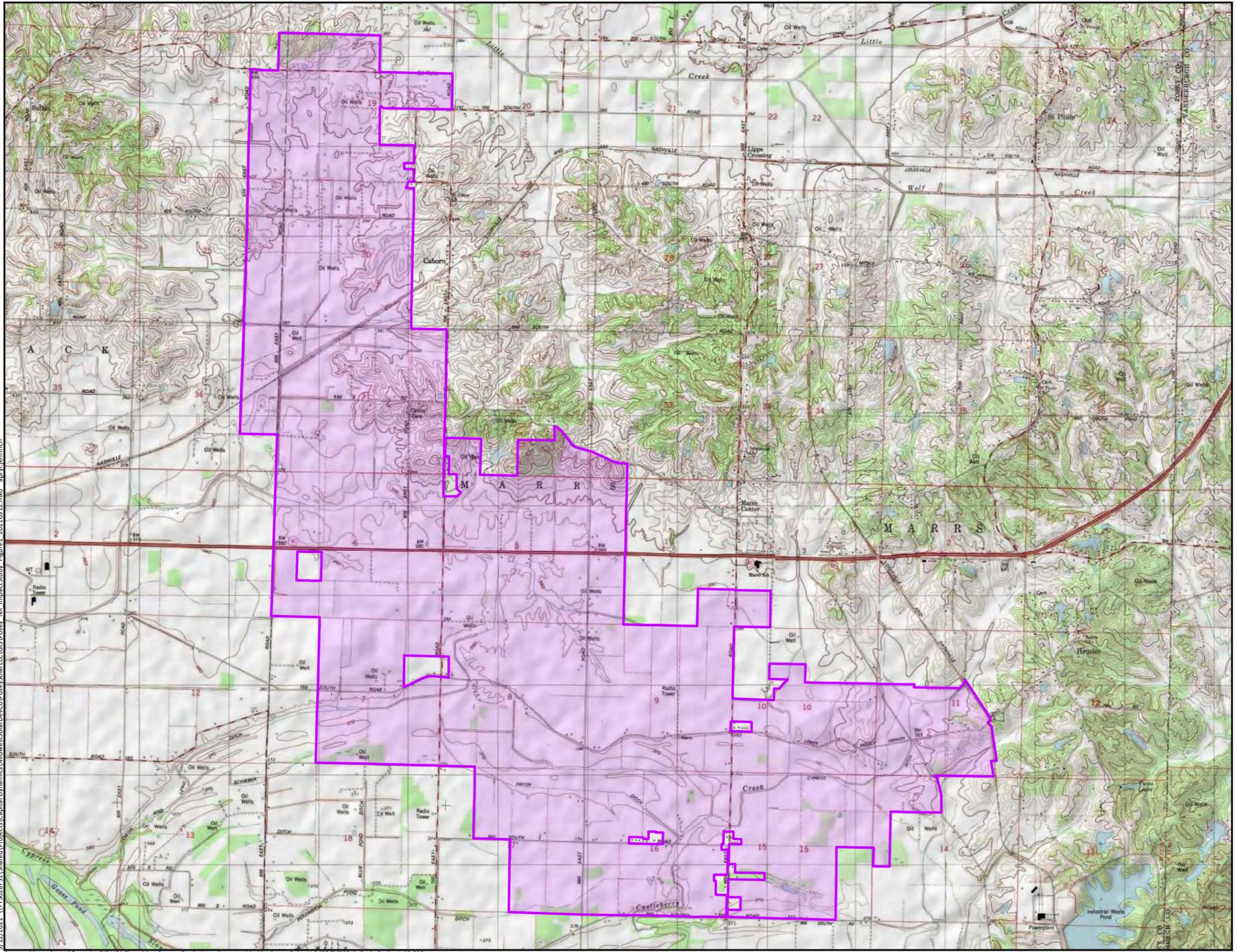
Sincerely,



Adam Holven
Project Manager
Tetra Tech Inc.
2001 Killebrew Drive, Suite 141
Bloomington, Minnesota 55425

Enclosure: Figure 1 - Posey Solar Project Location

3/12/2021 \\TTS028F51\Shared\Projects\Captial Dynamics\MidwestSolarDevCo\PoseySolarLLC\GIS\Posey_NR_ImpactStudy_Figure1_20210312.mxd apryl_jennrich



Study Area (8,274 acres)

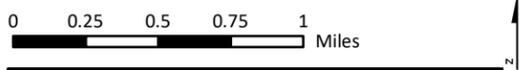


Figure 1: Project Location
Posey Solar LLC
Posey County, Indiana

Source: Map adapted from ArcGIS USA Topo Map Server; Study Area data provided by Posey Solar LLC (03/9/2021); Scale Scale: 1:40,000.



THIS IS NOT A PERMIT

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

DNR #: ER-23563

Request Received: March 17, 2021

Requestor: Tetra Tech Inc
Adam Holven
2001 Killebrew Drive, Suite 141
Bloomington, MN 55425

Project: Construction of a 2400 acre solar farm, generally between Mt. Vernon and Evansville;
Posey Solar, LLC

County/Site info: Posey

The Indiana Department of Natural Resources has reviewed the above referenced project per your request. Our agency offers the following comments for your information and in accordance with the National Environmental Policy Act of 1969.

If our agency has regulatory jurisdiction over the project, the recommendations contained in this letter may become requirements of any permit issued. If we do not have permitting authority, all recommendations are voluntary.

Regulatory Assessment: This proposal may require the formal approval(s) of our agency pursuant to the Flood Control Act (IC 14-28-1) for any proposal to construct, excavate, or fill in or on the floodway of a stream or other flowing waterbody which has a drainage area greater than one square mile. Please submit more detailed plans to the Division of Water's Technical Services Section if you are unsure whether or not a permit will be required.

Natural Heritage Database: The Natural Heritage Program's data have been checked. The state endangered Copperbelly water snake (*Nerodia erythrogaster neglecta*) and Loggerhead Shrike (*Lanius ludovicianus*) have been documented within 1/2 mile of the project area.

Fish & Wildlife Comments: Loggerhead Shrikes are no longer found in this portion of the state; therefore, we do not foresee any impacts to this bird species as a result of this project.

Avoid and minimize impacts to fish, wildlife, and botanical resources to the greatest extent possible, and compensate for impacts. The following are recommendations that address potential impacts identified in the proposed project area:

1) Copperbelly Water Snake:

Most land in the area is agriculture; however, some swamp land is present to the south and Copperbellies will travel overland. To mitigate potential impacts to this snake species, erosion control/exclusion fencing should be installed around the southern portions of the project area to prevent this species from entering the work areas.

2) Forest & Riparian Habitat:

Due to the preponderance of previously-cleared farm fields making up the 8,300 acre study area, tree clearing in what are few and scattered wooded areas (the largest of which is about 50 acres) should be avoided. Building roads in or across wooded areas should be avoided when possible. Woody vegetation impacts should be minimized where they cannot be avoided and limited to a 20' wide cut through the wooded area that cannot be avoided.

We recommend a mitigation plan be developed (and submitted with the permit application, if required) for any unavoidable habitat impacts that will occur. The DNR's Habitat Mitigation Guidelines (and plant lists) can be found online at:

State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

<http://iac.iga.in.gov/iac/20200527-IR-312200284NRA.xml.pdf>

Impacts to non-wetland forest of one (1) acre or more should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in a rural setting, replacement should be at a 1:1 ratio based on area. Impacts to non-wetland forest under one (1) acre in an urban setting should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees) or by using the 1:1 replacement ratio based on area depending on the type of habitat impacted (individual canopy tree removal in an urban streetscape or park-like environment versus removal of habitat supporting a tree canopy, woody understory, and herbaceous layer). Impacts under 0.10 acre in an urban area may still involve the replacement of large diameter trees but typically do not require any additional mitigation or additional plantings beyond seeding and stabilizing disturbed areas. There are exceptions for high quality habitat sites however.

The mitigation site should be located in the floodway, downstream of the one (1) square mile drainage area of that stream (or another stream within the 8-digit HUC, preferably as close to the impact site as possible) and adjacent to existing forested riparian habitat.

3) Crossing Structures:

If any roads need to cross a stream, the recommendations below should be implemented in the design and construction to facilitate fish and wildlife passage. The Environmental Unit recommends bridges rather than culverts and bottomless culverts rather than box or pipe culverts. Wide culverts are better than narrow culverts, and culverts with shorter through lengths are better than culverts with longer through lengths. If box or pipe culverts are used, the bottoms should be buried a minimum of 6" (or 20% of the culvert height/pipe diameter, whichever is greater up to a maximum of 2') below the stream bed elevation to allow a natural streambed to form within or under the crossing structure. Crossings should: span the entire channel width (a minimum of 1.2 times the OHWM width); maintain the natural stream substrate within the structure; have a minimum openness ratio (height x width / length) of 0.25; and have stream depth, channel width, and water velocities during low-flow conditions that are approximate to those in the natural stream channel.

The new structure and associated materials (such as slope armoring) should not create conditions that are less favorable for fish and wildlife passage under the structure compared to current conditions. From the perspective of aquatic habitat, upstream fish passage, and wildlife movement, silt/bedload accumulation within the structure is beneficial. Implement stream simulation techniques to create a stable, natural substrate within the structure with stream gradient, riffles, runs and pools, and stream substrate (sand/gravel/cobble mix) reflecting the adjacent stream segment. Additional information is available in Publication No. FHWA-HIF-11-008, Federal Highway Administration, Culvert Design for Aquatic Organism Passage, October 2010 (<http://www.fhwa.dot.gov/engineering/hydraulics/pubs/11008/hif11008.pdf>). Natural cobble and boulders (or other materials as appropriate in that stream) should be placed within the structure (anchored if necessary) to protect the structure itself, provide flow diversity and roughness/energy dissipation, and to accelerate streambed formation within the crossing. Culvert width and gradient should be appropriate for the site conditions so that flows do not scour out material from the culvert.

Riprap aprons or energy dissipators should be placed flush with the structure floor. Mix smaller stone and fines in with the riprap so streamflow stays at the surface instead of percolating down and leaving a dry bed. To facilitate aquatic organism passage through the structure the riprap layer's slope at the outlet should be 20:1 while it should be 5:1

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State of Indiana
DEPARTMENT OF NATURAL RESOURCES
Division of Fish and Wildlife
Early Coordination/Environmental Assessment

on the inlet end.

The additional measures listed below should be implemented to avoid, minimize, or compensate for impacts to fish, wildlife, and botanical resources:

1. Revegetate all bare and disturbed areas with a mixture of native grasses, sedges, wildflowers, and also native hardwood trees and shrubs if any woody plants are disturbed during construction as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants, including prohibited invasive species (see 312 IAC 18-3-25).
2. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush.
3. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife.
4. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 5 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30.
5. Do not excavate in the low flow area except for the placement of riprap.
6. Plant native hardwood trees along the top of the bank and right-of-way to replace the vegetation destroyed during construction.
7. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized.
8. Seed and protect all disturbed streambanks and slopes not protected by other methods that are 3:1 or steeper with erosion control blankets that are heavy-duty, biodegradable, and net free or that use loose-woven / Leno-woven netting to minimize the entrapment and snaring of small-bodied wildlife such as snakes and turtles (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas.

Contact Staff:

Christie L. Stanifer, Environ. Coordinator, Fish & Wildlife
Our agency appreciates this opportunity to be of service. Please contact the above staff member at (317) 232-4080 if we can be of further assistance.

JoAnne D. Cummings
for Christie L. Stanifer
Environ. Coordinator
Division of Fish and Wildlife

Date: May 15, 2021