

October 23, 2020

VIA ELECTRONIC FILING

Ms. Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: In the Matter of Hecate Energy Highland 4 LLC and Hecate Energy Highland 2, LLC for a Certificate of Environmental Liability and Public Need for a 100 MW Solar-Powered Electric Generating Facility in Clay and Whiteoak Townships in Highland County, Ohio Case No. 20-1288-EL-BGN (Before the Ohio Power Siting Board) / Supplement to Application/Threatened & Endangered Species Reviews

Dear Ms. Troupe:

This letter serves to supplement the Application filed on September 2, 2020 for the New Market Solar Farm, a 100 MW electric generating facility to be located on approximately 1,116 acres in Clay and Whiteoak Townships in Highland County, Ohio ("New Market Solar" or "Project"). The Project will consist of two separate and distinct facilities: (1) New Market Solar I, a 65 MW facility that will be developed, constructed and operated by Hecate Energy Highland 4 LLC and will occupy 582 acres of the Project site; and (2) New Market Solar II, a 35 MW facility that will be developed, constructed, and operated by Hecate Energy Highland 2, LLC and will occupy 222 acres of the Project site.

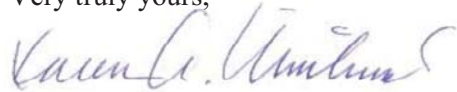
Attached for filing are the following documents:

- August 31, 2020 Email Letter from P. Ashfield, Ohio Field Office Supervisor for the U.S. Fish and Wildlife Service to C. Brendel, Terracon Consultants, Inc. Re: New Market Solar I and II, Highland County, Ohio;
- September 1, 2020 Email Letter from P. Ashfield, Ohio Field Office Supervisor for the U.S. Fish and Wildlife Service to C. Brendel, Terracon Consultants, Inc. Re: Proposed New Market Solar I (65MW) and II (35MW) Projects, Highland County, Ohio;

- October 6, 2020 Letter from M. Pettegrew, Environmental Services Administrator, Ohio Department of Natural Resources, to C. Brendel, Terracon Consultants, Inc. Re: New Market Solar I, Highland County, Ohio;
- October 6, 2020 Letter from M. Pettegrew, Environmental Services Administrator, Ohio Department of Natural Resources, to C. Brendel, Terracon Consultants, Inc. Re: New Market Solar II, Highland County, Ohio;
- October 21, 2020 Letter from C. Brendel, Terracon Consultants, Inc. to P. Shorr, Hecate Energy Highland 4 LLC Re: Threatened and Endangered Species Concurrence, New Market Solar I Site, Highland County, Ohio; and
- October 21, 2020 Letter from C. Brendel, Terracon Consultants, Inc. to P. Shorr, Hecate Energy Highland 2, LLC Re: Threatened and Endangered Species Concurrence, New Market Solar II Site, Highland County, Ohio.

If you have questions or need additional information, please contact me.

Very truly yours,

A handwritten signature in blue ink, appearing to read "Karen A. Winters", with a stylized flourish at the end.

Karen A. Winters

cc: Patti Shorr, Hecate Energy LLC
Jared Wren, Hecate Energy LLC
Emily Kosmalski, Terracon Consultants, Inc.
Danelle Gagliardi, Squire Patton Boggs (US) LLP

Brendel, Cassandra E

From: Ohio, FW3 <ohio@fws.gov>
Sent: Monday, August 31, 2020 2:16 PM
To: Brendel, Cassandra E
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate
Subject: New Market Solar I and II, Buford, Highland County



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2020-TA-2173

Dear Ms. Brendel,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, we recommend that trees ≥ 3 inches dbh be saved wherever possible. We recommend minimizing tree clearing to the maximum extent possible and avoiding clearing of any woodlots and we appreciate your commitment to preserving forested areas where possible and to clearing unavoidable trees only between October 1 and March 31. However, at this time we are unable to fully assess the potential impact of the project on federally listed bats. Therefore, we recommend additional coordination with this office regarding project siting in order for us to provide project-specific conservation recommendations for federally listed bats.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no portion of the project should be initiated until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

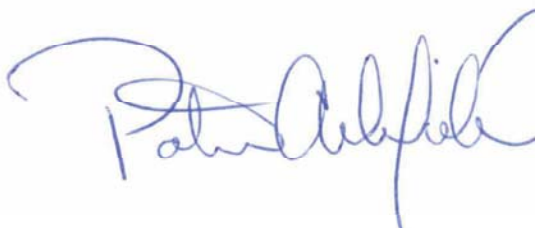
Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

STREAM AND WETLAND AVOIDANCE: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus it is important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact Angela Boyer at this office at (614) 416-8993, ext. 122 or angela_boyer@fws.gov.

Sincerely,



Patrice Ashfield

Ohio Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Brendel, Cassandra E

From: Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, September 1, 2020 3:01 PM
To: Brendel, Cassandra E
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate
Subject: Proposed New Market Solar I (65MW) and II (35MW) Projects, Highland County



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2020-TA-2173

Dear Ms. Brendel,

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥ 3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥ 3 inches dbh cannot be avoided, we recommend removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleeb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

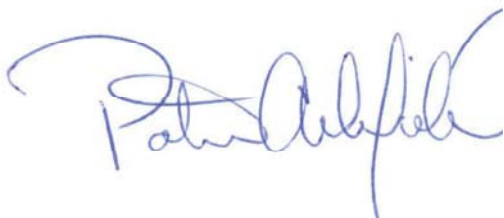
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,



Patrice Ashfield
Ohio Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW



Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate

John Kessler, Chief

2045 Morse Road – Bldg. E-2

Columbus, OH 43229

Phone: (614) 265-6621

Fax: (614) 267-4764

October 6, 2020

Cassie Brendel
Terracon Consultants, Inc.
800 Morrison Road
Gahanna, Ohio 43230

Re: 20-830; New Market Solar I

Project: The proposed project involves the construction of a 1,474-acre solar farm development project.

Location: The proposed project is located in White Oak, Clay, and Hamer Townships, Highland County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following record at or within a one-mile radius of the project area:

Loggerhead shrike (*Lanius ludovicianus*), State endangered

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The Division of Wildlife is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. Attached for your use is the Ohio Solar Site Pollinator Habitat Planning and Assessment Form. This form was

developed by the OPHI Solar Pollinator Program Advisory Team. We recommend that the areas between and around the solar panels be planted with legumes and wildflowers (i.e. forbs) that are beneficial to pollinators and other wildlife and reduce use of non-native grass and gravel. The recommended legumes and forbs listed below are low-growing so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators while reducing storm water runoff, standing water, and erosion. Please contact the Ohio Pollinator Habitat Initiative <http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org for further information on solar power facility pollinator plantings.

Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
Alsike Clover	<i>Trifolium hybridum</i>
Brown-eyed Susan	<i>Rudbeckia triloba</i>
Butterfly Milkweed	<i>Asclepias tuberosa</i>
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

The project is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Presence of listed bats has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. However, limited summer tree cutting may be acceptable after further consultation with the DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees.

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS “Range-wide Indiana Bat Survey Guidelines.” If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to

Sarah Stankavich, sarah.stankavich@dnr.state.oh.us for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the bigeye shiner (*Notropis boops*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, and the type of habitat within the project area, this project is not likely to impact this species.

The project is within the range of the king rail (*Rallus elegans*), a state endangered bird. Nests for this species are deep bowls constructed out of grass and usually hidden very well in marsh vegetation. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the project is not likely to impact this species.

Records exist within the vicinity of the project area for the loggerhead shrike (*Lanius ludovicianus*), a state endangered bird. The loggerhead shrike nests in hedgerows, thickets and fencerows. They hunt over hayfields, pastures, and other grasslands. The DOW understands that impacts to the majority, if not all on site trees will be avoided. However, if thickets or other types of dense shrubbery habitat will be impacted, the DOW recommends construction be avoided in this habitat during the species' nesting period of April 1 to August 1. If this type of habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

Geological Survey: The Division of Geological Survey has the following comments.

Physiographic Region

The proposed project area is in White Oak, Clay, and Hamer townships in Highland County. This area is in the Illinoian Till Plain physiographic region. This region is characterized by rolling ground moraines of Illinoian till. This area typically lacks ice-constructional features such as moraines, kames, and eskers. Many buried valleys are associated with this area. Modern valleys alternate between broad floodplains and bedrock gorges. A silt-loam, high-lime Illinoian-age till

covers Ordovician and Silurian-age bedrock. This till is frequently capped by loess (Ohio Department of Natural Resources, Division of Geological Survey, 1998).

Surficial/Glacial Geology

The project area lies within the glaciated margin of the state and is covered by the relatively flat, continuous till of the Illinoian ground moraine. This ground moraine is made up of the Rainsboro till with a covering of 3 to 10 ft of loess (Rosengreen 1974, Pavey et al, 1999). Glacial drift throughout most of the study area is between 11 and 56 feet thick. Drift is thinnest in the northern portion of the project area and thickest in the south (Powers and Swinford, 2004).

Bedrock Geology

The uppermost bedrock unit in the project area is the Drakes Formation and Waynesville Formation Undivided. This unit is Ordovician-aged and consists of gray to bluish gray interbedded limestone and dolomitic shale. This unit makes up most of the project area. Underlying the Waynesville Formation is the Ordovician-aged Arnheim Formation. This unit is characterized by gray to bluish gray interbedded shale and limestone. It should be noted that bedrock is not exposed at the surface within the boundaries of the project area due to significant glacial drift (Slucher et al, 2006).

Oil, Gas and Mining

ODNR has record of no oil and gas wells within one mile of the proposed project area. The nearest oil and gas well on record to the project area is approximately 3 miles southeast of the site. It is listed as plugged (Ohio Department of Natural Resources, Division of Oil and Gas, *Ohio Oil and Gas Wells Locator*).

ODNR does not have record of any mining operations within the project area. The nearest mine to the project area is the Hanson Aggregates Davon Limestone Quarry. It is located approximately 5 miles to the north of the project area (Ohio Department of Natural Resources, Division of Mineral Resources, *Mines of Ohio*).

Seismic Activity

Several small earthquakes have historically been recorded near the site. The three events closest to the site are listed in the chart below (Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Earthquake Epicenters*):

Date	Magnitude	Distance to Site Boundary	County	Township
August 30, 1881	2.9	7.3 miles	Highland	New Market
March 3, 2019	2.5	10.6 miles	Brown	Franklin
February 19, 1995	3.6	15.5 miles	Highland	Marshall

Karst

Karst features usually form in areas that are covered by thin or no glacial drift and the bedrock is limestone or dolomite. ODNR does not have record of any sinkholes within the boundary of the project area, however the underlying Drakes, Waynesville, and Arnheim formations are composed of carbonate bedrock which can be prone to the development of karst features. The nearest verified sinkhole is 1.4 miles from the project area (Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Karst*).

Soils

According to the USDA Web Soil Survey, the project area consists primarily of soils derived from glacial till and loess. Westboro and Clermont are the most common soil series found within the boundaries of the project area. Together these soils cover over 95% of the project area and have a clay loam soil texture (USDA Web Soil Survey).

There is a low risk of shrink-swell potential in these soils. Slope remains relatively flat, with slope seldom exceeding a 2% grade. Steepest slopes are along stream valleys (Williams et al, 1977 and USDA Web Soil Survey).

Groundwater

Groundwater resources are limited throughout the project area. Wells developed in bedrock are likely to yield less 5 gallons per minute. Groundwater yields are low in the Ordovician bedrock (Schmidt, 1991 and Ohio Department of Natural Resources, Division of Water, *Bedrock Aquifer Map*, 2000). Wells developed in glacial material are likely to yield up to 25 gallons per minute. The lowest unconsolidated aquifer yields are in the northern portion of the project area. Interbedded sand and gravel and till allow groundwater production up to 25 gallons per minute. Higher groundwater yields typically reflect larger diameter, properly developed and screened wells. In areas where sand and gravel deposits are scarce bedrock may be the preferred source of groundwater (Ohio Department of Natural Resources, Division of Water, *Statewide Unconsolidated Aquifer Map*, 2000).

ODNR has record of 12 water wells drilled within one mile of the project area. These wells range in depth from 58 to 140 feet deep, with an average depth of 93 feet. The most common aquifer listed is limestone. Ten wells listed are developed in the bedrock with five of those listing the aquifer type as limestone, two list a shale aquifer, two list a limestone and shale aquifer, and one well lists shale and sandstone as the aquifer. The remaining wells list clay and gravel as the aquifer. There is no sustainable yield data based on water well log records from wells in this area (Ohio Department of Natural Resources, Division of Water, *Ohio Water Wells*).

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

References

Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Earthquake Epicenters*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=earthquakes>

Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Karst*, online interactive map, https://gis.ohiodnr.gov/website/dgs/karst_interactivemap/

Ohio Department of Natural Resources, Division of Geological Survey, (1998). *Physiographic Regions of Ohio*. Ohio Department of Natural Resources, Ohio Department of Natural Resources, Division of Geological Survey, map with text, 2 p., scale 1:2,100,000.

Ohio Department of Natural Resources, Division of Geological Survey, (In progress). *Statewide Surficial Geology Map*. GIS coverage.

- Ohio Department of Natural Resources, Division of Mineral Resources, *Mines of Ohio*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=OhioMines>.
- Ohio Department of Natural Resources, Division of Oil and Gas, *Ohio Oil and Gas Wells Locator*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=oilgaswells>.
- Ohio Department of Natural Resources, Division of Water, *Ohio Water Wells*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=waterwells>.
- Ohio Department of Natural Resources, Division of Water, (2000). *Statewide Bedrock Aquifer Map*, GIS coverage.
- Ohio Department of Natural Resources, Division of Water, (2000). *Statewide Unconsolidated Aquifer Map*, GIS coverage.
- Pavey, R., Goldthwait, R., Brockman, C.S. Hull, D., Swinford, E.M., and Van Horn, R. (1999). *Quaternary Geology of Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:500,000.
- Powers, D.M., and Swinford, E.M. (2004). *Shaded drift-thickness map of Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:500,000
- Rosengreen, T.E., (1974) *Glacial Geology of Highland County, Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, Report of Investigations No. 92, map with text, 33 p., scale 1:62,500.
- Schmidt, J. J. (1991). *Groundwater Resources of Highland County*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:62,500.
- Slucher, E., Swinford, E., Larsen, G., Schumacher, G., Shrake, D., Rice, C., Caudill, M., Rea, R. and Powers, D. (2006). *Bedrock Geologic Map of Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:500,000.
- USDA Web Soil Survey, (Last modified 2019). *Web Soil Survey Interactive Map*, United States Department of Agriculture, National Resources Conservation Service, online interactive map, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.
- Williams, N. L., Kerr, J. W., and McLoada, N. A.,(1977) *Soil Survey of Highland County, Ohio*. United States Department of Agriculture, Natural Resources Conservation Science. Retrieved from nrcs.usda.gov



Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate

John Kessler, Chief

2045 Morse Road – Bldg. E-2

Columbus, OH 43229

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October 6, 2020

Cassie Brendel
Terracon Consultants, Inc.
800 Morrison Road
Gahanna, Ohio 43230

Re: 20-831; New Market Solar II

Project: The proposed project involves the construction of a 721-acre solar farm development.

Location: The proposed project is located in White Oak and Clay Townships, Highland County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following record at or within a one-mile radius of the project area:

Loggerhead shrike (*Lanius ludovicianus*), State endangered

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The Division of Wildlife is working closely with our partners at Ohio Pollinator Habitat Initiative (OPHI) to create and enhance pollinator habitat at solar power installations. Attached for your use is the Ohio Solar Site Pollinator Habitat Planning and Assessment Form. This form was developed by the OPHI Solar Pollinator Program Advisory Team. We recommend that the areas between and around the solar panels be planted with legumes and wildflowers (i.e. forbs) that are

beneficial to pollinators and other wildlife and reduce use of non-native grass and gravel. The recommended legumes and forbs listed below are low-growing so as not to cast shadows on the solar panels and would only require one to two mowings a year for maintenance, which should minimize maintenance costs. For other areas of the installation where vegetation does not have to be low-growing, alternative pollinator mixes are available with a more diverse array of flowering plants. This perennial vegetation will provide beneficial foraging habitat to songbirds and pollinators while reducing storm water runoff, standing water, and erosion. Please contact the Ohio Pollinator Habitat Initiative <http://www.ophi.info/>, and specifically Mike Retterer mretterer@pheasantsforever.org for further information on solar power facility pollinator plantings.

Recommended low-growing grasses and forbs may include:

Little Bluestem	<i>Schizachyrium scoparium</i>
Sideoats Grama	<i>Bouteloua curtipendula</i>
Alfalfa	<i>Medicago spp.</i>
Alsike Clover	<i>Trifolium hybridum</i>
Brown-eyed Susan	<i>Rudbeckia triloba</i>
Butterfly Milkweed	<i>Asclepias tuberosa</i>
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>
Partridge Pea	<i>Chamaecrista fasciculata</i>
Timothy	<i>Phleum pratense</i>
Orchardgrass	<i>Dactylis glomerata</i>
Crimson Clover	<i>Trifolium incarnatum</i>
Ladino or White Clover	<i>Trifolium repens</i>

The project is within the vicinity of records for the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. Presence of listed bats has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. However, limited summer tree cutting may be acceptable after further consultation with the DOW (contact Sarah Stankavich, sarah.stankavich@dnr.state.oh.us).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees.

The DOW also recommends that a desktop habitat assessment, followed by a field assessment if needed, is conducted to determine if there are potential hibernaculum(a) present within the project area. Information about how to conduct habitat assessments can be found in the current USFWS “Range-wide Indiana Bat Survey Guidelines.” If a habitat assessment finds that potential hibernacula are present within 0.25 miles of the project area, please send this information to Sarah Stankavich, sarah.stankavich@dnr.state.oh.us for project recommendations. If a potential

or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the bigeye shiner (*Notropis boops*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, and the type of habitat within the project area, this project is not likely to impact this species.

The project is within the range of the king rail (*Rallus elegans*), a state endangered bird. Nests for this species are deep bowls constructed out of grass and usually hidden very well in marsh vegetation. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to August 1. If no wetland habitat will be impacted, the project is not likely to impact this species.

Records exist within the vicinity of the project area for the loggerhead shrike (*Lanius ludovicianus*), a state endangered bird. The loggerhead shrike nests in hedgerows, thickets and fencerows. They hunt over hayfields, pastures, and other grasslands. The DOW understands that impacts to the majority, if not all on site trees will be avoided. However, if thickets or other types of dense shrubbery habitat will be impacted, the DOW recommends construction be avoided in this habitat during the species' nesting period of April 1 to August 1. If this type of habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

Geological Survey: The Division of Geological Survey has the following comments.

Physiographic Region

The proposed project area is in White Oak and Clay townships, Highland County. This area is in the Illinoian Till Plain physiographic region. This region is characterized by rolling ground moraines of Illinoian till. This area typically lacks ice-constructional features such as moraines, kames, and eskers. Many buried valleys are associated with this area. Modern valleys alternate between broad floodplains and bedrock gorges. A silt-loam, high-lime Illinoian-age till covers

Ordovician and Silurian-age bedrock. This till is frequently capped by loess (Ohio Department of Natural Resources, Division of Geological Survey, 1998).

Surficial/Glacial Geology

The project area lies within the glaciated margin of the state and is covered by the relatively flat, continuous till of the Illinoian ground moraine. This ground moraine is made up of the Rainsboro till with a covering of 3 to 10 ft of loess (Rosengreen 1974, Pavay et al, 1999). Glacial drift throughout most of the study area is between 21 and 90 feet thick. Drift is thinnest in the western portion of the project area and thickest in the east (Powers and Swinford, 2004).

Bedrock Geology

The uppermost bedrock unit in the project area is the Drakes Formation and Waynesville Formation Undivided. This unit is Ordovician-aged and consists of gray to bluish gray interbedded limestone and dolomitic shale. This unit makes up most of the project area. Underlying the Waynesville Formation is the Ordovician-aged Arnheim Formation. This unit is characterized by gray to bluish gray interbedded shale and limestone. It should be noted that bedrock is not exposed at the surface within the boundaries of the project area due to significant glacial drift (Slucher et al, 2006).

Oil, Gas and Mining

ODNR has record of no oil and gas wells within one mile of the proposed project area. The nearest oil and gas well on record to the project area is approximately 2.5 miles east of the site. It is listed as plugged (Ohio Department of Natural Resources, Division of Oil and Gas, *Ohio Oil and Gas Wells Locator*).

ODNR does not have record of any mining operations within the project area. The nearest mine to the project area is the Eagle Crushed Stone Quarry. It is located approximately 4.3 miles to the southeast of the project area. (Ohio Department of Natural Resources, Division of Mineral Resources, *Mines of Ohio*).

Seismic Activity

Several small earthquakes have historically been recorded near the site. The three events closest to the site are listed in the chart below (Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Earthquake Epicenters*):

Date	Magnitude	Distance to Site Boundary	County	Township
August 30, 1881	2.9	8.8 miles	Highland	New Market
March 3, 2019	2.5	10.7 miles	Brown	Franklin
February 19, 1995	3.6	15.2 miles	Highland	Marshall

Karst

Karst features usually form in areas that are covered by thin or no glacial drift and the bedrock is limestone or dolomite. ODNR does not have record of any sinkholes within the boundary of the project area, however the underlying Drakes, Waynesville, and Arnheim formation are composed of carbonate bedrock which can be prone to the development of karst features. The nearest verified sinkhole is less than a mile from the project area (Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Karst*).

Soils

According to the USDA Web Soil Survey, the project area consists primarily of soils derived from glacial till and loess. Clermont and Westboro are the most common soil series found within the boundaries of the project area. Together these soils cover over 92% of the project area and have a clay loam soil texture (USDA Web Soil Survey).

There is a low risk of shrink-swell potential in these soils. Slope remains relatively flat, with slope seldom exceeding a 2% grade. Steepest slopes are along stream valleys (Ohio Department of Natural Resources, Division of Water, *Statewide Unconsolidated Aquifer Map*, 2000).

Groundwater

Groundwater resources are limited throughout the project area. Wells developed in bedrock are likely to yield less than 5 gallons per minute. Groundwater yields are low in the Ordovician bedrock (Schmidt, 1991 and Ohio Department of Natural Resources, Division of Water, *Bedrock Aquifer Map*, 2000). Wells developed in glacial material are likely to yield up to 25 gallons per minute. The lowest unconsolidated aquifer yields are in the western portion of the project area. Interbedded sand and gravel and till allow groundwater production up to 25 gallons per minute. Higher groundwater yields typically reflect larger diameter, properly developed and screened wells. In areas where sand and gravel deposits are scarce bedrock may be the preferred source of groundwater (Ohio Department of Natural Resources, Division of Water, *Statewide Unconsolidated Aquifer Map*, 2000).

ODNR has record of six water wells drilled within one mile of the project area. These wells range in depth from 65 to 130 feet, with an average depth of 92 feet. The most common aquifer listed is limestone. Five wells are developed in the bedrock with each of those wells listing the aquifer type as limestone. The remaining well list clay and rock as the aquifer. There is no sustainable yield data based on water well log records in this area (Ohio Department of Natural Resources, Division of Water, *Ohio Water Wells*).

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

References

Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Earthquake Epicenters*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=earthquakes>

Ohio Department of Natural Resources, Division of Geological Survey, *Ohio Karst*, online interactive map, https://gis.ohiodnr.gov/website/dgs/karst_interactivemap/

- Ohio Department of Natural Resources, Division of Geological Survey, (1998). *Physiographic Regions of Ohio*. Ohio Department of Natural Resources, Ohio Department of Natural Resources, Division of Geological Survey, map with text, 2 p., scale 1:2,100,000.
- Ohio Department of Natural Resources, Division of Geological Survey, (In progress). *Statewide Surficial Geology Map*. GIS coverage.
- Ohio Department of Natural Resources, Division of Mineral Resources, *Mines of Ohio*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=OhioMines>.
- Ohio Department of Natural Resources, Division of Oil and Gas, *Ohio Oil and Gas Wells Locator*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=oilgaswells>.
- Ohio Department of Natural Resources, Division of Water, *Ohio Water Wells*, online interactive map, <https://gis.ohiodnr.gov/MapView/?config=waterwells>.
- Ohio Department of Natural Resources, Division of Water, (2000). *Statewide Bedrock Aquifer Map*, GIS coverage.
- Ohio Department of Natural Resources, Division of Water, (2000). *Statewide Unconsolidated Aquifer Map*, GIS coverage.
- Pavey, R., Goldthwait, R., Brockman, C.S. Hull, D., Swinford, E.M., and Van Horn, R. (1999). *Quaternary Geology of Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:500,000.
- Powers, D.M., and Swinford, E.M. (2004). *Shaded drift-thickness map of Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:500,000
- Rosengreen, T.E., (1974) *Glacial Geology of Highland County, Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, Report of Investigations No. 92, map with text, p. 33 scale 1:62,500.
- Schmidt, J. J. (1991). *Groundwater Resources of Highland County*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:62,500.
- Slucher, E., Swinford, E., Larsen, G., Schumacher, G., Shrake, D., Rice, C., Caudill, M., Rea, R. and Powers, D. (2006). *Bedrock Geologic Map of Ohio*, Ohio Department of Natural Resources, Division of Geological Survey, map, scale 1:500,000.
- USDA Web Soil Survey, (Last modified 2019). *Web Soil Survey Interactive Map*, United States Department of Agriculture, National Resources Conservation Service, online interactive map, <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.
- Williams, N. L., Kerr, J. W., and McLoada, N. A.,(1977) *Soil Survey of Highland County, Ohio*. United States Department of Agriculture, Natural Resources Conservation Science. Retrieved from nrcs.usda.gov



October 21, 2020

Hecate Energy Highland 4 LLC
621 Randolph Street
Chicago, Illinois 60661

Attn: Ms. Patti Shorr
P: (614) 205-3798
E: PShorr@HecateEnergy.com

Re: Threatened and Endangered Species Concurrence
New Market Solar I Site
West New Market Road
Buford, Highland County, Ohio
Terracon Project No. N1207316

Dear Ms. Shorr:

This letter responds to the results of our coordination with the Ohio Department of Natural Resources, Office of Real Estate (ODNR), and the United States Fish and Wildlife Service, Ecological Services Office (USFWS) with respect to Hecate Energy Highland 4 LLC's New Market I Solar Project (Project), and, specifically, the issues raised by those agencies by letters dated October 6, 2020 and September 1, 2020, respectively

- **Indiana Bat (*Myotis sodalis*).** This species is known to use mature trees and/or dead trees with fissures, cavities, and/or peeling bark as roosting habitat during spring and summer months and to occupy caves and mines as hibernacula in fall and winter months. It is Terracon's understanding that tree clearing is being minimized as part of the Project and that any necessary clearing would occur seasonally (between October 1 and March 31) to avoid potential impacts to this species. Furthermore, caves and mines were not observed on the Project site. In its October 6, 2020 letter ODNR recommended that a desktop habitat assessment, followed by a field assessment, if necessary, be conducted to determine if there are potential hibernacula present within the Project area. Terracon has already conducted both the desktop habitat assessment and the field survey. Terracon reviewed ODNR Abandoned Underground Mine data, US Geological Survey and ODNR karst data, as well as ODNR coal mine data to determine the potential presence of hibernacula within 0.25 miles of the Project site. These features were not found within the prescribed 0.25-mile search radius around the Project site. Based on the proposed minimization of tree impacts and proposed seasonal clearing of trees and the apparent absence of caves and mines on the Project site and within 0.25 miles of the Project site, it is Terracon's opinion that this species is not at risk of impact as a result of the Project.

- Northern Long-Eared Bat (*Myotis septentrionalis*); Little Brown Bat (*Myotis lucifugus*); and Tricolored Bat (*Perimyotis subflavus*). The range of these bat species overlaps with the Project site. These species have very similar habitat needs to those listed for the Indiana Bat. Additionally, Northern Long-Eared Bats may make use of human structures, buildings and barns, for roosting. Based on the proposed minimization of tree impacts, proposed seasonal clearing of trees and barns and houses, and the absence of caves and mines on the Project site, it is Terracon's opinion that these species are not at risk of impact as a result of the Project.
- Bigeye Shiner (*Notropis boops*). This species inhabits perennial streams in Ohio. In-stream work is not proposed for the Project; therefore, it is Terracon's opinion that this species is not at risk of take as a result of the Project.
- Timber rattlesnake (*Crotalus horridus horridus*). This species is known to utilize sunlit forest canopy gaps for basking and rocky crevices for overwintering. Based on the absence of these habitat types and of proposed minimal impacts to forested areas on the Project site, it is Terracon's opinion that this species is not at risk of impact as a result of the Project.
- King Rail (*Rallus elegans*). This species is known to nest in marsh habitats. Impacts to this type of habitat, including all on-site wetland areas and streams, will be avoided as a conservation measure of the Project. Furthermore, it is Terracon's understanding that construction activities will occur outside of this species' nesting period (May 1 to August 1). Based on the proposed avoidance of impacts to the type of habitat, it is Terracon's opinion that this species is not at risk of impact as a result of the Project.
- Loggerhead Shrike (*Lanius ludovicianus*). This species nests in hedgerows, fencerows, and thickets and is known to hunt across various grassland areas. It is Terracon's understanding that the predominant landcover that will be impacted as a result of the Project are corn and soy row crop agriculture fields. Furthermore, it is Terracon's understanding that construction activities will occur outside of this species' nesting period (April 1 to August 1). Based on the dearth of this species' habitat type on the Project site and proposed seasonal clearing, it is Terracon's opinion that this species is not at risk of impact as a result of the Project.
- Direct impacts to wetlands and jurisdictional waters will be avoided by Project construction and operational activities. Furthermore, indirect impacts as a result of erosion during construction and operational activities will be minimized through best management practices.

It is Terracon's opinion that the applicant is compliant with the requests of the state and federal agencies' requests to limit impacts to T&E species and their respective habitat.

Terracon appreciates the opportunity to have worked for you on this project. If you have any questions regarding the content of this review, please contact me at (513) 612-9094 or via email at swest@terracon.com.

Sincerely,
TERRACON Consultants, Inc.

A handwritten signature in black ink, appearing to read "Cassie Brendel".

Cassie Brendel
Staff Scientist

A handwritten signature in black ink, appearing to read "Scott E. West".

Scott E. West
Group Manager



October 21, 2020

Hecate Energy Highland 2, LLC
621 Randolph Street
Chicago, Illinois 60661

Attn: Ms. Patti Shorr
P: (614) 205-3798
E: PShorr@HecateEnergy.com

Re: Threatened and Endangered Species Concurrence
New Market Solar II Site
West New Market Road
Buford, Highland County, Ohio
Terracon Project No. N1207316

Dear Ms. Shorr:

This letter responds to the results of our coordination with the Ohio Department of Natural Resources, Office of Real Estate (ODNR), and the United States Fish and Wildlife Service, Ecological Services Office (USFWS) with respect to Hecate Energy Highland 2, LLC's New Market II Solar Project (Project), and, specifically, the issues raised by those agencies by letters dated October 6, 2020 and September 1, 2020, respectively

- **Indiana Bat (*Myotis sodalis*).** This species is known to use mature trees and/or dead trees with fissures, cavities, and/or peeling bark as roosting habitat during spring and summer months and to occupy caves and mines as hibernacula in fall and winter months. It is Terracon's understanding that tree clearing is being minimized as part of the Project and that any necessary clearing would occur seasonally (between October 1 and March 31) to avoid potential impacts to this species. Furthermore, caves and mines were not observed on the Project site. In its October 6, 2020 letter ODNR recommended that a desktop habitat assessment, followed by a field assessment, if necessary, be conducted to determine if there are potential hibernacula present within the Project area. Terracon has already conducted both the desktop habitat assessment and the field survey. Terracon reviewed ODNR Abandoned Underground Mine data, US Geological Survey and ODNR karst data, as well as ODNR coal mine data to determine the potential presence of hibernacula within 0.25 miles of the Project site. These features were not found within the prescribed 0.25-mile search radius around the Project site. Based on the proposed minimization of tree impacts and proposed seasonal clearing of trees and the apparent absence of caves and mines on the Project site and within 0.25 miles of the Project site, it is Terracon's opinion that this species is not at risk of impact as a result of the Project.

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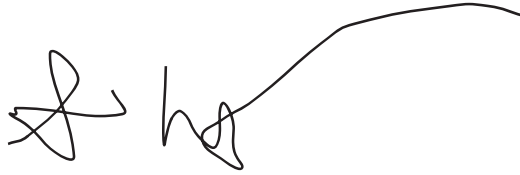
It is Terracon's opinion that the applicant is compliant with the requests of the state and federal agencies' requests to limit impacts to T&E species and their respective habitat.

Terracon appreciates the opportunity to have worked for you on this project. If you have any questions regarding the content of this review, please contact me at (513) 612-9094 or via email at swest@terracon.com.

Sincerely,
TERRACON Consultants, Inc.

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Cassie Brendel
Staff Scientist

A handwritten signature in cursive script, appearing to read "Scott E. West".

Scott E. West
Group Manager

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

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in

Case No(s). 20-1288-EL-BGN

Summary: Application Supplement to Application - Species Reviews electronically filed by Ms. Karen A. Winters on behalf of Hecate Energy Highland 4 LLC