

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of)	
Palomino Solar, LLC for a Certificate of)	Case No. 21-0041-EL-BGN
Environmental Compatibility and Public)	
Need)	

**NOTICE OF RESPONSES TO DATA REQUESTS FROM THE STAFF OF THE OHIO
POWER SITING BOARD**

On September 24, 2021, Palomino Solar, LLC (“Palomino Solar”) filed an Application for a Certificate of Environmental Compatibility and Public Need (“Application”) with the Ohio Power Siting Board (the “Board”). On October 1, 2021, the Board’s Staff provided Palomino Solar with Data Requests pertaining to Palomino Solar’s Application, to which Palomino Solar responded on October 8, 2021. On January 14, 2022, Palomino Solar filed a First Supplement to the Application with the Board. On January 18, 2022, Palomino Solar filed a Second Supplement to the Application with the Board. On January 26, 2022, the Board’s Staff provided Palomino Solar with a second set of Data Requests pertaining to Palomino Solar’s Application and supplements, to which Palomino Solar responded on February 9, 2022. On February 15, 2022, the Board’s Staff provided Palomino Solar with a third set of Data Requests pertaining to Palomino Solar’s Application, supplements, and prior responses to Data Requests. Attached to this notice are copies of Palomino Solar’s responses to the third set of Staff’s Data Requests.

Respectfully submitted,

/s/ Kodi Jean Verhalen

Kodi Jean Verhalen (#99831) (Counsel of Record)*

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Attorneys for Palomino Solar, LLC

**Counsel willing to accept service via electronic mail*

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of)	
Palomino Solar, LLC for a Certificate of)	Case No. 21-0041-EL-BGN
Environmental Compatibility and Public)	
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**PALOMINO SOLAR, LLC'S FEBRUARY 25, 2022 RESPONSES TO STAFF'S
FEBRUARY 15, 2022 WRITTEN DATA REQUESTS**

Ecological

1. The USFWS identified an active bald eagle nest within 660 feet of the project area northeast of the intersection of Sharpsville Rd and Bald Knob Rd. In their coordination letter dated 10/19/2020, the USFWS recommends the area surrounding the nest be evaluated to determine if any additional eagle nests are present and to validate the actual nest location. Have you surveyed the surrounding area to determine if any additional eagle nests are present? If so, please submit your findings to Staff, if not, please explain why you have not and what your plans are to address this concern.

Response:

A letter was sent to USFWS on January 20, 2021 outlining additional fieldwork performed by Palomino Solar to identify the nest's location and observe presence of eagles. Photos of the nest and the details of proposed construction activities in the vicinity of the nest were outlined in the letter with a request for a discussion regarding the appropriate mitigation strategy to implement. USFWS replied via email with instructions for scheduling construction activities that would occur within the 660 foot seasonal buffer accordingly. Palomino Solar has since removed all components within the recommended seasonal buffer of the nest and will be abiding by the buffer year round. Thus, no additional mitigation measures are required. A copy of this correspondence is attached.

2. The application states 13.8 acres of tree clearing will be required for the proposed project. In the response to the second of data requests, the Applicant indicates that "estimated tree clearing acreage in the current layout is approximately 1.5 acres." Please explain this difference.

Response:

The 13.8 acre value is from Table 08-4 of the September 24, 2021 layout. As the layout was revised in the January 14, 2022 submission, Table 08-4 was revised as clearing has been reduced to approximately 2.0 acres. The tree clearing is quantified with more detail in the maps provided in the response to OPSB Data Request #2 (February 9, 2022) as approximately 1.5 acres.

3. In their coordination letter dated 10/19/2020, the USFWS stated the entire proposed project area is in the vicinity of multiple confirmed records of Indiana bats. In addition, three of the southern areas are located in the vicinity of confirmed records for the northern long-eared bat. The USFWS requested additional information on the extent and the location of all tree clearing proposed for the project in order for them to make a determination if a level of use survey is warranted, or if seasonal clearing is sufficient to avoid take of the Indiana bat. Have you submitted this additional information to the USFWS? If yes, please submit to OPSB Staff as well for review, including the USFWS' response. If not, please explain why not and what your plans are to address this concern.

Response:

This information has not yet been submitted to the USFWS as tree clearing locations are subject to change while engineering and project design progresses. Palomino Solar is willing to implement seasonal cutting restrictions (April 1–September 30) during construction of the Project to avoid impacts to these listed species.

4. The ODNR DOW states in their coordination letter dated 12/4/2020, that breeding has been documented within the project area for the state endangered king rail. The king rail nests in wetland habitat. The ODNR recommends this habitat be avoided during the species' nesting period of May 1 to August 1. Since wetland impacts are proposed for the project, does the Applicant commit to avoiding the habitat during the species' nesting period?

Response:

The ODNR confirmed these comments in their letter dated February 8, 2022. As outlined in Table 08-4 of the Application, the Project is anticipated to impact less than one acre of wetland area. Palomino Solar will avoid the king rail nest habitat during the nesting period (May 1–August 1). A copy of the ODNR correspondence from February 8, 2022 is attached.

5. In the application it states that some of the identified native plant species identified as beneficial to pollinators via consultation with the ODNR and the OPHI will be planted in the solar module array area. Staff recommends that projects plant a minimum of 70% of the project area in beneficial vegetation, utilizing plant species as described by the Ohio Pollinator Habitat Initiative 'OPHI' (or other suitable species as approved) and follow the Ohio Solar Site Pollinator Habitat Planning and Assessment Form with a minimum score of 80 points. Staff further recommends that routine mowing will be limited to fall/spring seasons, as needed, to allow for natural reseeding of plantings and reduce impacts to ground-nesting birds. These guidelines are intended to provide wildlife habitat, encourage water infiltration, and reduce erosion. Is the Applicant willing to commit to Staff's recommendations? If not, please explain.

Response:

Yes.

Aviation/Glare

6. On page 23 of the Application, Palomino Solar, LLC indicates that the potential impacts from glare are negligible to Bell Air Ranch Heliport. Please provide the basis for that statement.

Response:

This was the professional opinion of Capital Airspace Group, the author of the Glint and Glare Analysis (Exhibit L). The Bell Air Ranch heliport is private and it is unlikely to observe the traffic that a public facility would experience. Please refer to Table 2 in the report where zero minutes of glare were anticipated from any of the investigated receptors.

Geology

7. Although karst geology was not addressed by the preliminary geotechnical engineering report (Exhibit I), the revised ecological assessment (Exhibit P) does. Section 4.2.2 of the report indicates: *The Project Area is not located within karst geology; therefore, the Project construction or operation would not be impacted by karst terrain.* Staff's review of the publicly available data provided by ODNR shows the entire project area falls within a karst geology designation. Figure A-5 demonstrates this as it breaks down the different karst classifications relative to the carbonate bedrock age and overburden depths. The ODNR geologic survey review correspondence provided within Exhibit P indicates a karst feature was documented at one time within the project area, but appears to have filled in. Please describe what efforts the Applicant has taken to date to confirm no karst features exist within or immediately adjacent to the project area. In addition, confirm the nearest distances to proposed project infrastructure from the feature that ODNR speaks to in its review.

Response:

As outlined in Figure A-5 of Exhibit P, the Project falls into geological areas of various geological designations but it does not situate on probably karst features. The filled-in feature that ODNR tool is mentioning is located at 39°16'6.97"N, 83°42'38.98"W and there is no project infrastructure located on this feature. The nearest above-ground features are fencing are located at a distance of approximately 225 feet, a proposed laydown area is located at a distance of approximately 300 feet, and proposed buried cables located at a distance of approximately 50. A preliminary geotechnical study has already been performed for the Project (Exhibit I) and further geotechnical analysis may be performed as engineering and design progresses to best locate project components.

8. The ODNR review indicates the proposed project is immediately adjacent to an active surface mine. Is the Applicant aware whether the nearby mines use blasting as part of their mining operations?

Response:

Palomino Solar did not inquire with the mine as to whether it uses blasting as part of its operations. As the mine is located outside the Project area, Palomino Solar does not anticipate that, if the mine does use blasting as part of its operations, such activity would impact the Project's construction and operation.

9. Page 2 of Exhibit I indicates bedrock depth ranges to be expected are from 25-50 feet. The ODNr review indicates drift ranges from 0 to 78 feet in thickness throughout most of the project area. Staff's review of the publicly available data provided by ODNr shows much of the project area has less than 10 feet of overburden. The glacial drift map (Figure A-4 of Exhibit P) confirms that depth to bedrock appears to be <10 feet within several portions of the project area.

Response:

No question is asked here, but we assume the OPSB is seeking additional information on the estimated bedrock depth for the Project Area. Figure A-4 of Exhibit P illustrates general bedrock and glacial drift depth of the Project area with respect to Ecological Assessment while more detailed geotechnical exploration is provided in Exhibit I. The hypothesis of the preliminary geotechnical test campaign were to the effect that bedrock would be encountered at a depth between 25 to 50 feet. As mentioned on page 2 of Exhibit I, immediately after the 25 to 50 foot expectation statement, of the 24 bores performed refusal was encountered at two locations: Refusal to drilling was encountered at 9.1 and 8.8 feet below grade in Borings S-2 and A-16, respectively. This refusal may have been due to encountering bedrock or possible cobbles or floaters. Further geotechnical studies may be performed as engineering and design progresses. The Project does not anticipate concerns with construction and operation if the bedrock in the area were the depths as identified in the geotechnical exploration.

10. Given the shallow bedrock depths in portions of the project area, does the Applicant anticipate any blasting will be necessary?

Response:

No.

11. Given the bedrock depths noted above, pile drivability may be difficult. Page 10 of the application indicates piles will be driven up to 20 feet below ground. Should pile refusal occur during conventional driving methods, what alternative method(s) and/or piles will the Applicant use?

Response:

Pre-drilling prior to driving piles can be used as an alternative method should refusal be encountered.

12. The application indicates 64 miles of underground collection lines and 18 miles of permanent access roads will be part of the project. Describe the construction technique/s that will be used if shallow bedrock is encountered while installing these project components.

Response:

Underground lines are to be buried 3–4 feet below ground, where bedrock is unlikely to be present.

13. Please revise Figure 8-2 of the Application to include all oil and gas well features.

Response:

There are no active oil and gas wells within the Project area. There is record of one inactive oil and gas well within one mile of the Project area and Figure 8-2 has been revised to include this location. This well is identified as plugged and abandoned by ODNR Division of Oil and Gas.

14. Page 9 of Exhibit I states: *Temporary excavations will probably be required during grading operations*. Please discuss these excavations further.

Response:

Temporary excavation will be necessary when specific grade needs to be established after temporary earthwork necessary for trenching, access, and foundation construction for the O&M Building. Temporary excavation may also be required for slope stabilization or delineation of drainage features. This may include moving fill material around within the site and stockpiling.

15. The application discusses the poorly drained soils throughout the project area. Groundwater was documented in several of the borings. Does the applicant expect any type of ongoing dewatering, outside of the final grade drainage, will be necessary during construction?

Response:

Yes. Any dewatering activities will be completed in compliance with applicable laws and regulations.

16. Pages 14-15 of Exhibit I discuss the need for additional geotechnical studies to determine the final design at the project substation site. Will this additional study include bedrock coring?

Response:

Once the loading of the equipment to be installed at the substation is known, an additional geotechnical study may be required; however, the precise scope of the study is not known at this stage.



Renewable Energy.
Sustainable Development.

January 20, 2021

Ms. Patrice Ashfield
Field Office Supervisor
U.S. Fish and Wildlife Service
4625 Morse Rd Suite 104
Columbus, OH, 43230

VIA EMAIL: jennifer_finfera@fws.gov

REFERENCE : Palomino Solar Project, Highland County, Ohio [TAILS# 03E15000-2021-TA-0126]
SUBJECT : Bald Eagle Nest Location

Dear Ms. Ashfield:

Palomino Solar, LLC (c/o Innergex Renewable Development USA, LLC) submitted a request for Environmental Review in September 2020 to your office. Part of your response included information on a potential bald eagle nest near the Project Area. During field surveys by our Consultant (Cardno) in November 2020, field biologists were able to identify a Bald Eagle nest (Figure 1) near the estimated location you provided us. The nest was in good condition (Photo 1 and 2), and a Bald Eagle was observed perching nearby at the time of our field visit (No Photo Available). Based on these observations, it is likely that the nest is currently being used by Bald Eagles.

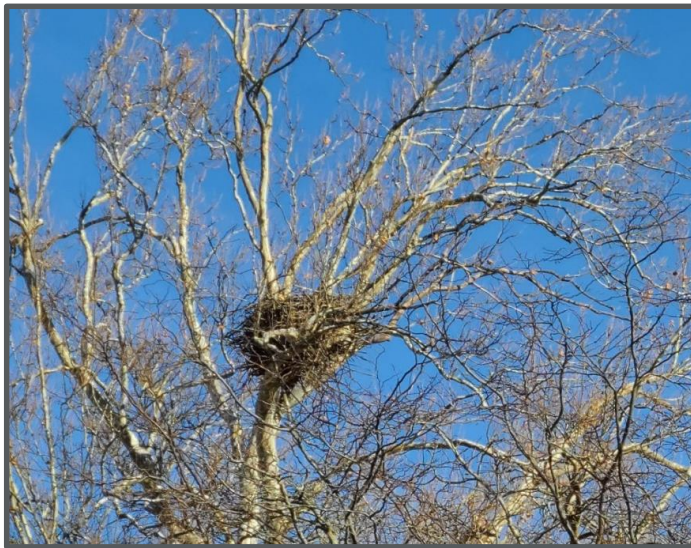


Photo 1. Likely Bald Eagle Nest.



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Sustainable Development.



Photo 2. Likely Bald Eagle Nest and Surrounding Trees.

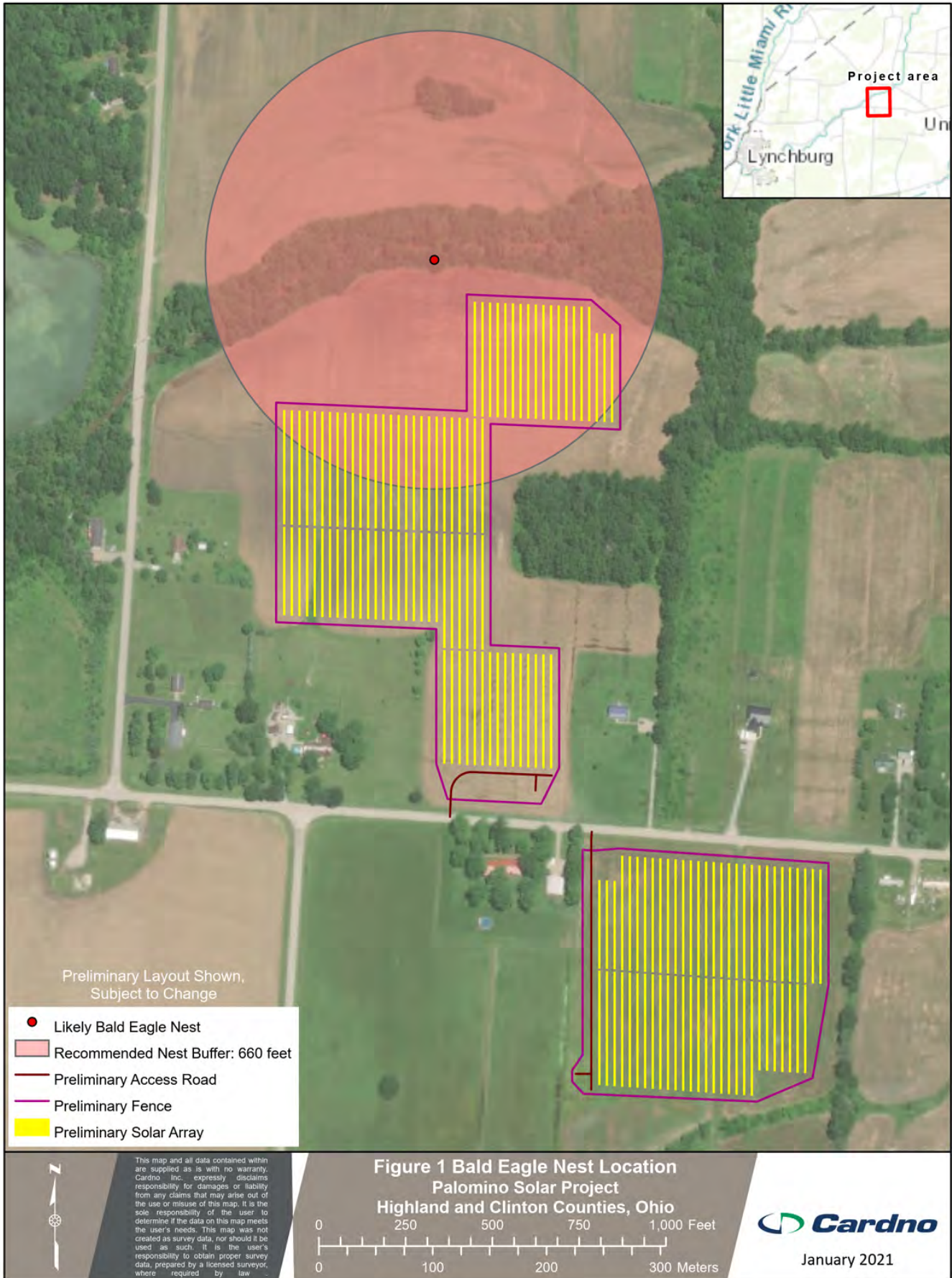
Our preliminary layout includes solar panels and a 7 ft tall chain link perimeter fence within 660 feet of the nest (Figure 1), however the layout is subject to change based on a variety of factors, including consultation with your office. We do not plan to clear any trees near the nest. Activities planned at this time would be limited to grading, panel installation, and fence installation. We would like to discuss the restrictions that would be required on construction and operations activities in proximity to the nest location. Your previous letter recommended avoiding tree clearing within 660 feet or within direct line of sight of the nest between January 15 and July 31, but also indicated that you would work with us to determine an appropriate buffer relative to proposed activities.

We would like to work with your office to determine an appropriate buffer from the nest for construction, establish what types of activities the buffer would apply to, and establish a survey plan to confirm nest occupancy. Can we set a date in February 2021 to have our initial meeting to discuss these items?

Please contact me with any questions,

Regards,

Michelle Closson
Manager – Environment
Innergex Renewable Energy, Inc.
888 Dunsmuir Street, Suite 1100
Vancouver, BC V6C 3K4
604-813-6411
MClosson@innnergex.com



Madison Walsh

From: Finfera, Jennifer <jennifer_finfera@fws.gov>
Sent: January 26, 2021 12:12 PM
To: Michelle Closson
Subject: Re: [EXTERNAL] RE: Palomino Solar Project

MISE EN GARDE : Ce courriel provient de l'externe. Avant d'accéder à une pièce jointe ou à un lien de ce courriel, assurez-vous de reconnaître l'expéditeur et que le contenu est de confiance.

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This sounds good. Let me know if there are any changes or if you have any other questions.

From: Michelle Closson <MClosson@innergex.com>
Sent: Tuesday, January 26, 2021 3:09 PM
To: Finfera, Jennifer <jennifer_finfera@fws.gov>
Subject: RE: [EXTERNAL] RE: Palomino Solar Project

Hi Jenny,

Thanks again for your feedback. While we do not have a vegetation management plan prepared for operation of this project just yet – the project is actually not anticipated to start construction until at least summer 2022 – it is safe to assume that mowing and maintenance actions that could occur during the January to July timeframe would be the same as, if not likely less than, agricultural activities.

Thanks again,

Michelle

Michelle Closson, MSc.
Manager - Environment

INNERGEX



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From: Finfera, Jennifer <jennifer_finfera@fws.gov>
Sent: January 26, 2021 10:22 AM
To: Michelle Closson <MClosson@innergex.com>
Subject: Re: [EXTERNAL] RE: Palomino Solar Project

MISE EN GARDE : Ce courriel provient de l'externe. Avant d'accéder à une pièce jointe ou à un lien de ce courriel, assurez-vous de reconnaître l'expéditeur et que le contenu est de confiance.

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Michelle,

We really appreciate you delaying construction during the eagles' sensitive time. By avoiding construction until July you do not need a permit for this year's activities. We just need to determine if the activities that need to occur January through July of 2022 and beyond would have an impact.

The nest is located adjacent to an area used for agriculture so the eagle pair should be adapted to periodic disturbance due to planting, fertilizing, herbiciding, harvesting, and plowing. These activities are done on a limited basis once the weather has warmed up some (less danger of having the eggs get cold). So the eagles have been habituated to these types of disturbances.

If you have to mow or spray herbicide or drive through the area to monitor the panels more frequently than the activities above would have occurred, this may disturb the eagles. Do you have an idea of how often the area would need to be mowed or other maintenance actions would occur during the January to July timeframe once the area is in operation?

Once we have this information I will check back in with our eagle expert and get thier thoughts.

We really appreciate you waiting to implement construction until July--that really lessens our concerns about potential impacts for this year.

Jenny

From: Michelle Closson <MClosson@innergex.com>
Sent: Thursday, January 21, 2021 9:56 AM
To: Finfera, Jennifer <jennifer_finfera@fws.gov>
Subject: RE: [EXTERNAL] RE: Palomino Solar Project

Hi Jenny,

Thank-you for the quick response.

Our preliminary construction schedule indicates that grading will commence in the fall of 2022. We are currently in the process of refining our schedule of activities, but we plan on restricting construction within at least 660 feet of the nest between January 15-July 31.

Your comment on ongoing maintenance is relevant and I would be curious to understand permitting options.

Thanks again and please let me know if you require more specifics in order to continue the conversation.

Michelle

Michelle Closson, MSc.
Manager - Environment

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From: Finfera, Jennifer <jennifer_finfera@fws.gov>
Sent: January 21, 2021 8:40 AM
To: Michelle Closson <MClosson@innergex.com>
Subject: Re: [EXTERNAL] RE: Palomino Solar Project

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Michelle,

Do you have a timeline for activities will occur and an estimate for how long grading will take?

Work within the 660 buffer during the restricted time (before the young have fledged) will most likely require a permit from our regional office.

Also if maintenance or other activities will occur with the 660 every year during the restricted time then it may be considered a long-term disturbance and not just a temporary one as the adult eagles will have to deal with it every year.

Once you provide that information we can consider what permit would be appropriate and then we can schedule a quick call if needed.

Jenny

From: Michelle Closson <MClosson@innergex.com>
Sent: Wednesday, January 20, 2021 10:26 AM
To: Finfera, Jennifer <jennifer_finfera@fws.gov>
Cc: nathan.reardon@dnr.state.oh.us <nathan.reardon@dnr.state.oh.us>; Parsons, Kate <kate.parsons@dnr.state.oh.us>; Sarah.stankavich@dnr.state.oh.us <Sarah.stankavich@dnr.state.oh.us>; Ohio, FW3 <ohio@fws.gov>; Bruce Moreira <bruce.moreira@cardno.com>
Subject: [EXTERNAL] RE: Palomino Solar Project

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Hi Jenny,

Thanks again for your technical assistance letter with respect to the proposed Palomino Solar Project in Highland County, Ohio.

Attached is a letter with an update on locating the likely Bald Eagle's nest in proximity to the project and request for a meeting in February to discuss appropriate mitigation measures.

Please advise on dates and times that work for your team and I can set up a meeting.

Thank-you,
Michelle

Michelle Closson, MSc.
Manager - Environment



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From: Finfera, Jennifer <jennifer_finfera@fws.gov>
Sent: October 19, 2020 3:16 PM
To: Michelle Closson <MClosson@innergex.com>
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate <kate.parsons@dnr.state.oh.us>;
Sarah.stankavich@dnr.state.oh.us; Ohio, FW3 <ohio@fws.gov>
Subject: Palomino Solar Project

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Your technical assistance letter is attached.

Jenny Finfera
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
4625 Morse Rd., Suite 104
Columbus, Ohio 43230

614-416-8993 ext. 113
Direct:614-528-9706



Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

OPSB Case No. 21-0041-EL-BGN

Staff Data Request #3

ODNR Correspondence

1 of 6

Office of Real Estate

John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

February 8, 2022

Madison Walsh
Innergex
888 Dunsmuir Street, Suite 1100
Vancouver, BC V6C 3K4

Re: 20-0955; Palomino Solar

Project: The proposed project involves the construction of a 200-megawatt photovoltaic solar facility approximately 7 miles west of Hillsboro on approximately 2,445 acres.

Location: The proposed project is located in Union and Dodson 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 records at or within a one-mile radius of the project area:

King rail (*Rallus elegans*), State endangered
Fallsville Wildlife Area – ODNR Division of Wildlife
Oldaker Wildlife Area – ODNR Division of Wildlife

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 DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

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. Because presence of state endangered bat species has been established in the area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting inside this buffer may be acceptable after further consultation with DOW (contact Erin Hazelton at Erin.hazelton@dnr.ohio.gov).

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 recommends tree 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.

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.

This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

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, this project is not likely to impact this species.

Breeding has been documented within the project area for 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.

The project is within the range of 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. If thickets or other types of dense shrubby habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to August 1. If this 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.

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

Physiographic Region

The proposed project area is in Union and Dodson townships, Highland County. The central and southern portion of this area is in the Illinoian Till Plain physiographic region. This region is characterized by rolling ground moraine composed of older 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. The northern portion of the project area is in the Southern Ohio Loamy Till Plain physiographic region. This region is characterized by both end and recessional moraines. The surface consists of a high-lime loamy till and boulder belts are common in this area. Ground moraines are present and are relatively flat, but steep valleys are cut through the terrain by large streams. These valleys are filled with outwash and alternate between broad floodplains and narrows. Buried valleys are common. Carbonate rocks and shale underlie glacial features (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 includes several Wisconsinian-age and Illinoian-age glacial features. The project area is covered by the silty loam till of the flat continuous Illinoian ground moraine and the loamy Wisconsinian till that makes up the hummocky ridges of the Cuba Moraine. Alluvium is adjacent to small streams that run through the project area (Rosengreen, 1974 and Pavay et al, 1999). Glacial drift throughout most of the study area is between zero and 78 feet thick. Thinnest drift is in the southern half of the project area. Drift is thickest in the northern extent of project area where the Cuba Moraine is present (Powers and Swinford, 2004).

Bedrock Geology

The uppermost bedrock unit in the project area is the Peebles Dolomite, Lilley Formation, Bisher Formation Undivided. Found in the northeast portion of the project area; this unit is Silurian-age and consists of dolomite, shale, and limestone. The Peebles Dolomite is bluish gray and vuggy with thick to massive bedding. The Lilley Formation is fossiliferous, contains thin to thick beds of gray dolomite and is interbedded with limestone and shale. The Bisher Formation contains thin to thick beds of argillaceous gray dolomite and sparse shale beds. Underlying the Peebles Dolomite, Lilley Formation, Bisher Formation Undivided is the Silurian-age Estill Shale. This unit is characterized by reddish gray to greenish gray shale with sparse argillaceous dolomite beds. The Estill Shale is found in the northeastern and central portion of the project area. Underlying the Estill Shale is the Silurian-age Dayton Limestone, Noland Formation and Brassfield Undivided. This unit is characterized by limestone dolomite, chert, and shale. The Dayton Formation is fine to medium grained beds of limestone. The Brassfield Formation is thin to thick beds of sparse dolomite, chert, and shale. Underlying the Dayton Limestone, Noland Formation and Brassfield Undivided is the Ordovician-age Drakes Formation and Waynesville Formation Undivided. This unit is characterized by gray to bluish gray interbedded limestone and dolomitic shale. Bedrock may be exposed in outcrops and roadcuts within the boundary of the project area (Slucher et al, 2006).

Oil, Gas and Mining

ODNR has record of one oil and gas well within one mile of the proposed project area. This well is listed as plugged and abandoned (Ohio Department of Natural Resources, Division of Oil and Gas, Ohio Oil and

Gas Wells Locator).

The project area is adjacent to the Martin Marietta Aggregates, Inc.'s active Lynchburg Limestone mine. The mine is west 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	2.2 miles	Highland	New Market
January 11, 1854	3.5	7.6 miles	Clinton	Green
February 19, 1995	3.6	15.7 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. The nearest verified sinkholes are less than 1/10th of a mile to the west of the project area. Although there are no sinkholes in the project area, the underlying limestone and dolomite formations of the project area are susceptible to the formation of sinkholes (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 loess over Illinoian till. Clermont, Westboro, and Jonesboro are the most common soil series found within the boundaries of the project area. These soils have a silt loam texture and together cover over 81% of the project area. The Clermont Soil which makes up approximately 51% of the project area is a hydric soil and is frequently ponded from December through May (USDA Web Soil Survey).

There is a low to moderate risk of shrink-swell potential in these soils. Slope is variable, with slope seldom exceeding a 6% grade. Slopes are steepest in the north atop the Cuba Moraine and 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 often yield under five gallons per minute. Silurian and Ordovician limestone bedrock is a poor source of ground water (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. Where thick enough, wells may be developed in sand and gravel lenses within the Cuba End Moraine Aquifer and the Blanchester Thin Upland Aquifer (Ohio Department of Natural Resources, Division of Water, Statewide Unconsolidated Aquifer Map, 2000).

ODNR has record of 63 water wells drilled within one mile of the project area. These wells range in depth from 30 to 328 feet, with an average depth of 98 feet. The most common aquifer listed is limestone. Twelve of the wells are completed in glacial deposits. Shale or interbedded limestone and shale are listed as the primary aquifer on 16 of the wells. The remaining wells are completed in the limestone. Sustainable yields of 6 to 10 gallons per minute have been reported for seven wells within the bedrock within one mile of the project area. The average sustainable yield of these wells is eight gallons per minute (Ohio Department of Natural Resources, Division of Geological Survey, Ohio Water Wells).

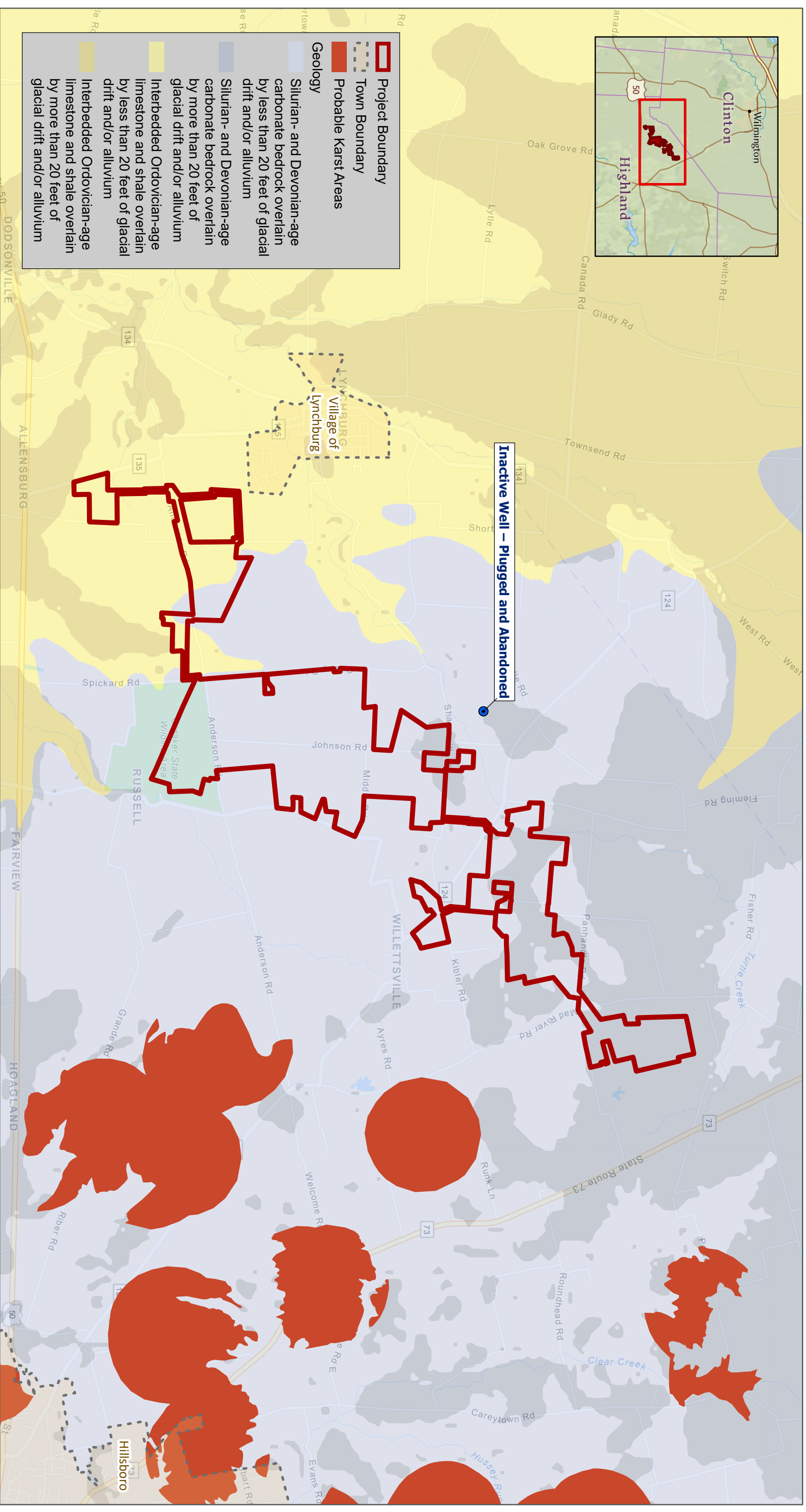
Water Resources: The Division of Water Resources has the following comment.

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

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)



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Revised Figure 08-2 Geological Features Map
Palomino Solar Energy Project
Highland County, Ohio

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing was filed electronically through the Docketing Information System of the Public Utilities Commission of Ohio on February 25, 2022. The PUCO's e-filing system will electronically serve notice of the filing of this document on counsel for all parties.

/s/ Kodi Jean Verhalen

Kodi Jean Verhalen (#99831)

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**This foregoing document was electronically filed with the Public Utilities
Commission of Ohio Docketing Information System on**

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Case No(s). 21-0041-EL-BGN

Summary: Notice Notice of Responses to Third Set of Data Requests electronically
filed by Ms. Megan R. Luby on behalf of Palomino Solar, LLC