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VIA FEDERAL EXPRESS AND
ELECTRONIC MAIL

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Ms. Melanie A. Bachman, Esq., Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06501

Re: Petition of CP Middletown Solar I, LLC and CP Middletown Solar II, LLC for a Declaratory Ruling that a Certificate of Environmental Compatibility and Public Need is not Required for the Construction, Operation and Maintenance of a 1 MW AC and a 0.986 MW AC Solar Photovoltaic Electric Generating Facility Located off of Meriden Road (Route 66) in Middlefield and Middletown, Connecticut.

Dear Attorney Bachman:

This office represents CP Middletown Solar I, LLC and CP Middletown Solar II, LLC ("Petitioners") in connection with the above-mentioned Petition. On behalf of Petitioners, I have enclosed an original and fifteen (15) copies of Petitioners' responses to the Connecticut Siting Council's ("Council") First Set of Interrogatories.

Additionally, Petitioners have reviewed the comments submitted by the Department of Energy and Environmental Protection ("DEEP"), dated May 10, 2019. Petitioners incorporated responses to some of those comments in the enclosed interrogatory responses. Petitioners respectfully offer the following additional responses to the DEEP comments.

At Page 2: *The home at 100 Nutmeg Court is visually prominent from the northern portion of the eastern field and possesses a large deck which looks directly southward toward the solar farm site. Some coniferous screening may be in order along this boundary of the project site.*

Petitioners have proposed some screening along the boundary of the project site and 100 Nutmeg Court. Please see Attachment 1 to the Petition.

Page 3: *As the host site is popular with wildlife and will retain its existing vegetative cover, it would be desirable if a 6" gap of clearance could be provided between the bottom of the fence and the ·ground to allow for movement by smaller wildlife onto and off of the solar farm site.*

Petitioners have proposed a four (4) to six (6) inch gap in the chain link fencing to accommodate smaller wildlife. See Attachment 1 to the Petition. Petitioners would agree to a six (6) inch gap.

Page 3: *On page 2 of the Decommissioning Plan, the removal of two concrete equipment pads is cited as generating 300 cubic yards of waste concrete. As each pad measures 15' x 20' x 1 ', each pad contains 300 cubic feet of concrete, equating to 600 cubic feet for the two pads. This in turn equates to 22 cubic yards of concrete waste rather than 300 cubic yards.*

This is a typographical error in the proposed Decommissioning Plan.

Page 4: *On page 2 of the Operations and Maintenance Plan, the annual inspection of the facility is described as including, among other components, trackers. Would trackers only come into play for a solar farm using variable tilt panels rather than fixed tilt ones as proposed at this site, or does this term have some other use? Also on page 2 of the O & M Plan, what is the 'DAS system' that will be inspected for proper functioning?*

The reference to trackers is a typographical error. The proposed facilities would use a fixed tilt system. The term "DAS" stands for "Data Acquisition System." DAS is a remote monitoring system that tracks the continuous performance of the solar systems remotely.

Please do not hesitate to contact me with any questions.

Very truly yours,

Jesse A. Langer

Enclosures

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

PETITION OF CP MIDDLETOWN SOLAR I, LLC AND CP MIDDLETOWN SOLAR II FOR A DELCARATORY RULING THAT A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED IS NOT REQUIRED	:	PETITION NO. 1367
	:	May 14, 2019

PETITIONERS' RESPONSES TO THE FIRST SET OF INTERROGATORIES BY THE CONNECTICUT SITING COUNCIL

CP Middletown Solar I, LLC ("CP Solar I") and CP Middletown Solar II, LLC ("CP Solar II" and sometimes collectively "Petitioners") respectfully submit the following responses and non-privileged documentation to the First Set of Interrogatories issued by the Connecticut Siting Council ("Council") in connection with the above-captioned matter.

Project Development

1. What entity/subcontractor would be constructing the facility? Has this entity/subcontractor constructed other solar projects in the Northeast? If so, list similar projects.

   Petitioners have not yet selected an engineering, procurement and construction ("EPC") contractor. Petitioners would select an EPC contractor based on Petitioners' extensive experience with the development and operation of solar photovoltaic generating facilities in the northeast as well as the EPC contractor's demonstrated experience in constructing facilities similar to those proposed in the Petition and in the northeast.

2. Was the project selected through a DEEP RFP process? If so, which RFP? What entity submitted the proposal? When was the project submitted? When was the project selected?

   Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners state that the Projects were not submitted in connection with any particular DEEP RFP process. However, as explained below, the Projects were selected for the ZREC Program and have either qualified for or are on the wait list for the Virtual Net Metering ("VNM") Program.

3. Was the project selected for the ZREC Program? If yes, were both the 1 MW AC facility and the 0.986 MW AC facility selected?

Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond in the affirmative as to both Projects.

4. Does CP Middletown Solar I, LLC and CP Middletown Solar II, LLC (collectively, the Petitioner) have a contract to sell the electricity and renewable energy certificates (RECs) it expects to generate with the proposed project? If so, indicate which of the two solar facilities it would be applicable to and which public utility that the RECs and electricity would be sold to. If the electricity is to be sold to more than one public utility, provide the percentage to be sold to each public utility.

   Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond in the affirmative. The Connecticut Light and Power Company *d/b/a* Eversource Energy ("Eversource") is the counter signatory to the ZREC agreements for both Projects.

5. What authority approves the power purchase agreement (PPA) for the facility? Has a PPA with an electric distribution company been executed? If so, at what alternating current megawatt output? If not, when would the PPA be finalized?

   Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond that CP Solar I has executed VNM agreements with the Towns of Weston and Wilton for the 1.0 MW AC facility. CP Solar II is on the waitlist for the VNM Program with the Town of Wilton as the would-be VNM customer for the 0.986 MW AC facility. There is no agreement with a public service company for the procurement of the energy produced by Projects. In the event that CP Solar II is not selected from the waitlist for the VNM Program, then the electricity generated by the 0.986 MW AC facility would be subject to Eversource's Rate 980.

6. What is the length of the power purchase agreement? Are there provisions for any extension of time in the PPA? Is there an option to renew?

   Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond that the VNM agreements have a term of twenty-five (25) years with no option to renew.

7. Is the alternating current megawatt capacity of the facility fixed at a certain amount per the PPA and/or the RFP? Is there an option within the PPA to allow for changes in the total output of the facility based on unforeseen circumstances?

   Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond that the VNM agreements allow for the total output to be revised per the

final configuration within the confines of the parameters required of renewable energy facilities participating in the VNM Program.

8. If the PPA expires and is not renewed and the solar faculty has not reached the end of its lifespan, will the Petitioner decommission the facility or seek other revenue mechanisms for the power produced by the facility?

   Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond that the lease agreements for CP Solar I and CP Solar II are coterminous with the VNM agreements and include options to renew. In the event that the VNM agreements expire or are terminated earlier, then Petitioners would either seek a new VNM customer or sell the electricity to Eversource under Rate 980 or as otherwise allowed. In the event that Petitioners elect not to renew their leases or otherwise cease the production of electricity, then they would decommission the Projects in accordance with the decommissioning plan submitted with the Petition.

9. Would the petitioner participate in the ISO-NE Forward Capacity Auction? If yes, which auction(s) and capacity commitment period(s)?

   Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond that they do not intend at this time to participate in the ISO-NE Forward Capacity Auction.

Proposed Site

10. What types of development and minimum lot sizes are permitted per the zoning designations of the host municipalities?

    Middletown (R-15 Zone): the minimum lot size is 15,000 square feet, with a required 100 feet of frontage on a public road.

    Uses permitted as of right: Single-Family Dwelling; Farming; Residential Business, Assisted Elderly Housing; Accessory Apartment.

    Uses permitted by special exception: Child Care Facilities; Public Utility Buildings; Natural Resource Extraction; Adaptive Residential – currently or recently occupied by non-conforming uses; Adaptive Historic Preservation; Cemeteries; Churches; Monasteries; Educational Institutions; Group Homes; Outdoor Recreation, including golf courses; Bus Stop Shelter; Active Adult Housing; Elderly Housing.

    See Middletown Zoning Regs., Article II, §§ 21.00 and 60.

Middlefield (DD# 1 Zone, Route 66 Design District #1): the minimum lot size is three (3) acres, with a required 185 feet of frontage on a public road.

Permitted Uses include: Offices, Banks, Financial Institutions, Restaurants, including Fast Food Restaurants, Take Out Restaurants, Retail Businesses, Personal Services, Municipal Buildings and Uses, Parks and other Dedicated Open Space, Places of Indoor Entertainment, Banquet, conference and Meeting Facilities, Hotels, Inns, Motels, (Private) Medical and Health Care Facilities including hospitals, professional offices, medical clinical services, continuing care facilities, convalescent facilities, and other facilities serving the medical needs of the non-elderly and elderly populations.

See Middlefield Zoning Regs., Article II, §§ 5.06.03 and 5.06.04.

11. Would the six lots (collectively, the subject property) be leased or purchased (or a combination thereof) if this project is approved by the Council? Explain.

Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond that they have secured lease agreements with the owner of the subject property.

12. If the subject property is to be leased, are there any provisions in the lease agreement with the property owner related to site restoration at the end of the project's useful life? If so, please provide any such provisions.

Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond in the affirmative. The provision is as follows:

Removal of Facility at End of Term Lessee shall, within one-hundred and eighty (180) days following the end of the Term, and at Lessee's cost and expense, be required to deconstruct, dismantle and remove the Facility from the Premises restore the Premises to its original condition at the Effective Date of this Lease, except for ordinary wear and tear and damages by the elements or damages over which Lessee had no control. During such removal, Lessee, its Affiliates and any employees, agents, representatives, contractors, subcontractors and other designees of any of the foregoing and any local electric utility personnel shall continue to have access to the Premises and the Facility as otherwise provided in this Lease with Operating Rent due Lessor through the date upon which Lessee completes decommissioning, deconstruction, dismantling and removal of the Facility from the Premises.

Petitioners have also reviewed DEEP's comments, dated May 10, 2019. On page 3, DEEP queried whether the components of the facilities would be impacted by changes in technology. The recyclability of the facility components would not be impacted by future technology as the components can be recycled for other uses.

13. Is the subject property, or any portion thereof, part of the Public Act 490 Program? If so, how does the municipal land use code classify the parcel(s)? For example, is/are the parcel(s) classified as "Tillable D – good to fair"? How would the project affect the use classification?

Petitioners respectfully object to this interrogatory as it exceeds the scope of a petition under General Statutes § 16-50k. Subject to this objection, Petitioners respond as follows:

The portions of the subject property located within Middletown are part of the PA 490 program and classified as "Tillable B" which is defined as "Very Good. Light, well-drained, sandy loams, typically level to slightly rolling, may have some stones." Those portions of the subject property that would be used for the Projects would no longer be eligible for PA 490 classification. The remaining portions of the subject property in Middletown would retain their PA 490 status.

The portions of the subject property located in Middlefield are part of the PA 490 program classified as "Open Space." Those portions that would be used for the Projects would no longer be eligible for PA 490 classification. The remaining portions of the subject property in Middlefield would retain their PA 490 status.

14. Referencing page 13 of the Environmental Assessment, would the proposed project be visible from Tynan Memorial Park, located approximately 0.5 miles to the northwest?

The Projects would not be visible from Tynan Memorial Park. Aerial and street view photographs depict significant amounts of vegetation and structures between Tynan Memorial Park and the site of the Projects. While the elevation of Tynan Memorial Park is seventy (70) feet greater than the highest point on the Projects site, that elevation is not enough of a topographic difference to provide direct lines of sight to the Projects area, given the intervening obstructions. In its comments, dated May 10, 2019, DEEP confirmed that there would be no anticipated impact on the park.

15. Referencing page 16 of the Phase 1A Cultural Resources Assessment Survey (Phase 1A Report), the nearest National Register of Historic Places property is the Seth Wetmore House. The Phase 1A Report notes that, "This structure is located a half mile north of the center of the project parcel." Referencing Figure 22 of the Phase 1A Report, would this property be located approximately a half mile to the east of the center of the project parcel?

The Seth Wetmore House is located approximately one half mile east of the Projects.

16. What acreage of Prime Farmland Soils would the solar panels and associated equipment be located on? What acreage of Statewide Important Farmland Soils would the solar panels and associated equipment be located on?

The Projects are located on approximately 6.9 acres of mapped Prime Farmland Soils. The Projects would occupy approximately 2.1 acres of Statewide Important Farmland Soils.

17. What impacts, if any, would the proposed project have on the soil productivity of the site? Has the property owner expressed any potential soil restoration methods to be employed at the end of the project's useful life?

The Projects would not affect future soil productivity of the site in any significant way. With the exception of the upgrading of the access drive, there would be no permanent infrastructure installed that would have long-term impacts. Once the Projects have reached the end of their useful life, the solar facility components would be removed. The removal of the existing windrow of trees in the center of the site would provide additional useable agricultural land in the future, if desired.

The subject property has not been used for agricultural purposes in several decades. The property owner has not requested any potential soil restoration methods to be employed at the end of the Projects' useful life.

Petitioners have reviewed DEEP's comments, dated May 10, 2019. DEEP stated that a property owner to the north of the subject property "had planted pumpkins, corn and rye on the proposed host fields and estimated his last use of these fields was as recent as 6-8 years ago." It is Petitioners' understanding that the owner of the subject property has not farmed or leased the property for farming in several decades and that the owner has not permitted neighbors to plant on their property.

18. Provide the distance, direction and address of the nearest off-site residence from the solar field perimeter fence.

The nearest off-site residence is approximately 225 feet northeast of the Projects' proposed perimeter fence. The address of the residence is 100 Nutmeg Court, Middletown, CT, 06457.

Energy Production

19. Referencing Sheet SP-1, the proposed east array and the proposed west array have the same number of 370 Watt solar panels each: 3,492. However, the East Array is approximately 0.986 MW AC, and the West Array is approximately 1.0 MW AC. Why are the AC MW outputs different given the same quantity (and wattage) of panels?

The outputs are different because the inverter sizing for the East Array is different and smaller.

20. Have electrical loss assumptions been factored in to the output of the facility? What is the output (MW AC) at the point of interconnection?

Yes. The conductor size would have a less than 3 percentage voltage drop at the AC output of the inverters in the solar field and less than 0.5 percent voltage drop on the DC side. The total rate output of the two facilities is 1.986 MW AC.

21. Explain why a solar panel orientation to the south with an angle of 20 degrees above the horizontal was selected for this facility. How did the Petitioner arrive at a fixed angle of 20 degrees for the solar panels as being the optimum angle? Is the project designed to maximize annual energy production or peak load shaving?

The Projects are designed to maximize annual energy production based on available benchmark weather data on the specific location of the Projects. A twenty (20) degree tilt was selected by taking into account the available array area, the shading effects, and potential inter-row shading. If the Projects utilized a lower tilt, the annual energy output would be reduced due to the less favorable tilt angle. If the Projects utilized a higher tilt angle, there would be either an increase in inter-row shading (which would negatively impact production) or an increase in the inter-row spacing (which would increase shading losses from the surrounding tree line and/or increase the footprint of the Projects).

22. What is the projected capacity factor (expressed as a percentage) for the proposed project?

Approximately 14.5 percent.

23. What is the estimated average annual energy production in terms of megawatt hours? How was this estimate derived?

The estimated annual production of the systems is approximately 3.29 million kWhs. The estimate was derived by using industry standard production estimation tools.

24. Would the impact of soft shading, such as air pollution or hard shading, such as bird droppings or weather events, such as snow or ice accumulation, hail, dust, pollen, etc. reduce the energy production of the proposed project? If so, was this included in the proposed projects capacity factor? Would any of these expose the solar panels to damage?

Soft shading and hard shading would have a minimal effect on the performance of the panels. However, the production model used to estimate the kWh generation of the Projects incorporated allowances for these losses consistent with solar photovoltaic generating facilities operating in the region. The proposed modules are certified to UL 1703, which includes load testing and hail impact testing and have a

5400 PA, *i.e.*, 112 pounds per square foot. None of the above examples is expected to damage the panels.

25. Could the project be designed to serve as a microgrid? Could the proposed project incorporate battery storage? If so, please indicate the anticipated size of the battery storage system and where it may be located on the site.

    Petitioners have not contemplated a battery storage system or microgrid capabilities in the Project design. A microgrid would require some element of battery storage.

26. Should one section of the solar array experience electrical problems such that the section shuts down, could other sections of the system still operate and transmit power to the grid? For example, would it be two separate sections electrically: East Array and West Array? Explain.

    Yes, the 1 MW AC facility and the 0.986 MW AC facility would have separate interconnections to the grid.

Site Components and Solar Equipment

27. Would the proposed panels be mounted in a portrait or landscape fashion?

    The proposed panels would be mounted in portrait fashion.

28. Referencing page 6 of the Petition, the proposed 50-kW inverters are string inverters. Is the proposed 36-kW inverter a string inverter?

    Yes.

29. What is the design wind speed of the solar panel mount? How are the panels adhered to the mount? What prevents the solar panels from separating from either the racking or the foundation during high winds?

    The design wind speed of the module mounting system is 117 miles per hour. The panels are mounted to the racking system through the mounting holes on the rear frame of the panels by using a serrated flange head nut and bolt. There are four (4) sets of nuts and bolts per module. The bolting would prevent separation during high wind events.

30. Referring to Petition p. 6, the modules would be attached to a ground-mounted, pile-driven racking system. Please respond to the following:
    a) What is the length of the driven posts and to what depth would the posts be driven into the ground to provide the required structural stability?

b) Are residential areas abutting the proposed site served by private wells? Can vibrations caused by driven installation of the posts cause sediment buildup or other negative effects on nearby wells?
c) How many panels will each rack hold?

(a) The racking posts would be approximately fourteen (14) to sixteen (16) feet in length, with seven (7) to ten (10) feet embedded in the ground.

(b) The closest residential area is approximately 225 feet from the proposed site, and the nearest residence is connected to the City's water and sewer system. Accordingly, the distance from the area in which the driven installation would occur should not create any appreciable vibrations that would affect any potable wells to the extent they exist.

(c) Each rack would hold eighteen (18) panels (2x9).

31. If any solar panel wiring is external, are there any concerns regarding potential damage from weather exposure, vegetation maintenance, or animals? Explain.

Petitioners do not have any concerns regarding external wiring as proper wire management would be used to keep all wiring and conductors away from ground level to avoid any interaction with animals and mowing equipment. Wires and conductors would be tightly secured above ground behind the panels in conduit sleeves and would be in the shade away from direct sunlight and other weather elements.

32. Page 6 of the Petition notes that, "Citrine would provide minor upgrades to the access which would be extended farther north approximately 580 feet to the proposed location of the equipment pads." Would this involve adding gravel to the existing access and extending the access with additional gravel? The proposed access extension is about 580 feet long. How long is the existing access in linear feet?

The existing gravel access would be "topdressed" with approximately two (2) inches of gravel. The existing gravel access is approximately 425 feet long.

33. Sheet DN-1 shows approximately a two-foot minimum to the bottom of the solar panels. Approximately how tall (in maximum height above grade) would it be to the tops of the solar panels?

The approximate maximum height above grade would be 7.5 feet.

34. Sheet SP-1 depicts a 13.5-foot aisle width between the rows of solar panels. Would this aisle spacing be uniform for the entire project?

Yes.

35. Page 7 of the Environmental Assessment notes that the proposed site is designated as Zone X, an area of minimal flooding. Is this the unshaded Zone X, an area outside of both the 100-year and the 500-year flood zones? Page 24 of the Environmental Assessment notes that the site is Zone C. Is Zone C equivalent to unshaded Zone X?

The site is outside the 100-year and 500-year flood zones. Zone X is equivalent to the old Zone C.

Interconnection

36. Would the 1 MW AC facility and the 0.986 MW AC facility interconnect to the utility distribution lines on Meriden Road using separate feeders or would there be only one (combined) feeder to connect to the existing distribution lines? If it hasn't yet been determined per the interconnection design process, please indicate as such.

The two facilities would be interconnected via separate feeders.

37. Would any of the power produced be used on-site (identify use), or would it all be fed into the local distribution system? If any of the power would be used on-site, estimate the total on-site load in kilowatts.

Aside from any minimal parasitic load required to operate the inverters and related components, the power produced would be fed into the local distribution system.

38. Where would the approximately seven proposed utility poles along the gravel access drive be located, or is that still being determined as part of the interconnection design?

The utility poles would be located along the disturbed access road. Exact locations will be finalized when Eversource finishes its field engineering design, which is underway.

39. Did a system impact study need to be performed by Eversource to ensure that the distribution system can support the 1.986 MW AC or no because of the facility size? Could the distribution system support the 1.986 MW AC output?

Yes; Eversource determined that the distribution system could support the 1.986 MW AC output.

40. Is the existing distribution on Meriden Road three-phase or would it have to be upgraded from single-phase to three-phase? Would the proposed facility connect to existing distribution on the same side of Meriden Road as the proposed facility, or would there be, for example, an overhead crossing of Meriden Road to reach a utility pole on the opposite side of Meriden Road?

Yes, the existing distribution on Meriden Road is three-phase. It is anticipated that there will be an overhead crossing from Meriden Road.

Public Safety

41. Would the solar facility have a protection system to shut the facility down in the event of a fault within the facility or isolate the facility during abnormal grid disturbances or during other power outage events?

    The Projects would include an internal protection system to shut down a portion of or the whole of each facility, as appropriate, should an unlikely fault occur. The design of the Projects would also include the capability to isolate the respective facilities automatically during abnormal grid disturbances or during power outage events. The Projects would be equipped with a recloser as dictated by Eversource to provide the added protection. In addition, the inverters are UL 1741 compliant, which would prevent islanding in the event of a power outage.

42. Would the project comply with the National Electrical Code, the National Electrical Safety Code and any applicable National Fire Protection Association codes and standards?

    Yes, as applicable.

43. Would the proposed project comply with the Department of Energy and Environmental Protection noise control standards at the property boundaries?

    Yes, Petitioners anticipate that the Projects would comply with the DEEP noise control standards at the property boundaries. The solar panels do not emit any sound. Based on the equipment specifications, the sound generated by an inverter ebbs to approximately less than 60 dBA within one meter of that inverter. The closest residential property boundary (100 Nutmeg Court) would be approximately 290 feet from the closest inverter.

44. Would sun reflection off of the panels create a glare effect at abutting residence(s)? What measures can be employed to reduce potential glare (ex. Solid fencing, landscaping)?

    Petitioners do not anticipate any glare effect on any abutting residences. The panels are manufactured to minimize glare. The nearest residence is located approximately 225 feet to the northeast of the Project, at the terminus of Nutmeg Court. The panels would be facing south, which is away from Nutmeg Court; therefore, there would be no glare effect to this or other residences in that area. Petitioners have also proposed some landscaping to reduce visibility from 100 Nutmeg Court. Please see the detailed site drawings appended to the Petition as Attachment 1.

45. Where is the nearest airport and/or airfield? Page 12 of the Petition notes that the Petitioner has submitted the proposed project location to the Federal Aviation Administration. Has a response from FAA been received? If yes, please provide a copy. Would glare from the solar arrays have any impact on air navigation? Has a glare analysis been conducted? If not, under what circumstances would a FAA glare analysis be required?

The nearest airport and/or airfield is Meriden Markham Municipal Airport approximately 6.8 miles from the subject site. Petitioners received a determination of no hazard to air navigation from the FAA. The FAA response is appended hereto as Attachment 1. A glare analysis is not required as a result of the FAA determination. It is important to note that the panels are manufactured to minimize glare and are covered with anti-reflective coating.

46. Would the proximity of any existing or proposed structures present a fire safety or other hazard (ex. Lightning strike)? Would the proximity of any existing or porposed structures present a hazard in relation to the electric generating equipment?

There are no existing or proposed structures unrelated to the Projects on the subject site that would present a fire safety or other hazard. All electrical equipment servicing the Projects would be constructed and installed to all applicable codes. The minimum distances required by all applicable codes would be followed to ensure a safe and reliable installation and operation.

47. In the event of a brush or electrical fire, how does the applicant propose to mitigate electrical hazards that could be encountered by emergency responders? If there is an issue that requires emergency responder response, how will the responders know that an area is indeed de-energized prior to entering?

Petitioners do not anticipate the components of the Projects to result in an increased risk of brush or electrical fire. However, Petitioners have prepared an Emergency Response Procedure, which is appended to the Petition as Attachment 4.

In the unlikely event of a fire, the arrays can be de-energized via a system disconnect located at the equipment pad proposed on the southern portion of the arrays. The subcontractor retained by Petitioners to operate and maintain the Projects could engage the system disconnect, as well as Eversource or first responders. Petitioners would ensure that the first responders are trained properly to engage the system disconnect as set forth in the Emergency Response Procedure.

48. With regard to emergency response:

    a. Is outreach and/or training necessary for local emergency responders in the event of a fire or other emergency at the site?
    b. How would site access be ensured for emergency responders?

c. In the event of a brush or electrical fire, how would the Petitioner mitigate potential electric hazards that could be encountered by emergency response personnel?
d. Could the entire facility be shut down and de-energized in the event of a fire? If so, how?
e. Would there be an emergency key box for first responders to access the site for shutdown purposes?

(a) Yes. Petitioners would ensure that first responders are trained in the procedures necessary to address the unlikely event of a fire or emergency.

(b) Petitioners would ensure that keys are available for first responders in a Knox Box or equivalent secure Rapid Entry System, as required by local fire authorities.

(c) Please see response to Interrogatory No. 47.

(d) Yes; please see response to Interrogatory No. 47.

(e) Yes; please see response to Interrogatory 48(b).

Environmental

49. Page 5 of the Petition notes that the State has the right to drain stormwater off Route 66 and flood the wetland areas in the southern portion of the site up to the 330-foot elevation mark. Would this have any impact on the proposed project?

No, the flooding easement is located outside the limits of the site.

50. Referencing page 1 of the Carbon Debt Analysis, the Petitioner notes that, "The Site is approximately 8.7 acres, and the Project will require the removal of 0.55 acres of trees representing 0.6 percent of the project site." Would 0.55 acres represent approximately six percent of the project site?

Yes; the above reference from the Carbon Debt Analysis was a typographical error.

51. Of the approximately 0.55 acres of trees to be removed as referenced in the Carbon Debt Analysis, would there be any clearing in wetlands? If yes, provide the area/acreage and indicate what methods would be used to clear trees in wetlands?

The proposed clearing would not occur within any wetlands.

52. Page 16 of the Petition notes that there would be a removal of a wind-row of trees in the center of the project area. Also, Sheet SP-1 notes an existing tree to be removed on the east side of the subject property. However, also per Sheet SP-1, additional trees would be removed along the south-southeast property boundary (with the stumps to remain). In such area, would there be tree clearing up to the property line?

Petitioners would not have to remove the additional trees on the south-southeast property boundary. During the design process, Petitioners determined they could retain these trees, but Petitioners inadvertently left this call out in the detailed site plans.

53. Would the Petitioner conduct a Shade Study Analysis? Would shading present any challenges for the proposed project? If so, how many trees will be removed to mitigate for shading?

Petitioners assessed the potential impacts from shading and incorporated these concerns into the design of the Projects, particularly with respect to the Project Area and the placement of the panels. The minimal tree clearing proposed in the Petition accounts for shading impact considerations and Petitioners do not anticipate the removal of any additional trees to account for shading mitigation.

54. What effect would runoff from the drip edge of each row of solar panels have on the landfill cap or site drainage patterns? Would channelization below the drip edge be expected? If not, why not?

The proposed site is not located on or near a landfill cap. There would be no changes to the site drainage patterns. Channelization below the drip edge is not expected, as the existing grades run close to the parallel with the channel edge.

55. Page 16 of the Petition notes that a formal vernal pool assessment is being performed. Provide the status of such vernal pool study. Would the proposed project be consistent with the U.S. Army Corps of Engineers Vernal Pool Best Management Practices?

The formal vernal pool report is complete and is appended hereto as <u>Attachment 2</u>. The proposed Projects would be consistent with the U.S. Army Corps of Engineers Vernal Pool Best Management Practices.

56. What is the setback regulation from wetlands for both host municipalities?

Each municipality defines activity within a wetlands as being a "Regulated Activity" (Middlefield), or within the "Regulated Area" (Middletown), to include all wetland and watercourses, plus all adjacent non-wetlands areas measured horizontally from the established wetland boundary to a distance of 100 feet for activities which are likely to impact of affect the wetlands or watercourses.

57. What is the length of the posts and to what depth would the posts be driven into the ground to provide structural stability? What are the posts made of? Are there any anticipated impacts to groundwater quality as a result of these driven posts? If so, how would the petitioner manage and/or mitigate these impacts? Should bedrock be encountered, how would the petitioner proceed?

Please see response to Interrogatory No. 30(a) as to the depth of the racking posts. This level of embedment would provide structural stability.

The posts are made of galvanized steel.

Petitioners do not anticipate any impacts to groundwater quality resulting from the driven posts. The portion of the galvanized post most exposed to oxidation would be that section from the ground surface to three to four feet down into underlying soil. Below that depth, the soil and groundwater quickly become deficient in oxygen and oxidation-reduction reactions are inhibited, which would mitigate any potential zinc level contribution that could impact groundwater.

Petitioners would assess any bedrock on a case-by-case basis, with several remedial actions possible, including: (1) driving a pile in another location; (2) testing for capacity, cutting and using the post in the same place (reducing the embedment depth); (3) excavating around the pile and pouring a concrete collar; or (4) extracting the pile, drilling, and re-driving the pile.

Facility Construction

58. With regard to earthwork required to developed the site, provide the following:
    a) Will the site be graded? If so, in what areas?
    b) What is the desired slope within the solar array areas?
    c) Could the solar field areas be installed with minimal alteration to existing slopes?
    d) If minimal alteration of slopes are proposed, can existing vegetation be maintained to provide ground cover during construction?
    e) Estimate the amounts of cut and fill in cubic yards for the access road(s)
    f) Estimate the amounts of cut and fill in cubic yards for solar field grading.
    g) If there is excess cut, will this material be removed from the site property or deposited on the site property?

(a) No, the site does not require grading to install the Projects. The existing grades would be maintained throughout the Project area.

(b) The current slope is either flat or pitching south, both of which are desirable and ideal conditions for a solar installation.

(c) Not applicable. The existing slopes in the field areas would not be disturbed.

(d) It is expected that the existing vegetation would remain during and post construction activities. If for any reason existing ground cover is not maintained during construction, the affected area would be seeded and reestablished.

(e) The estimated cut for the access road is approximately 165 cubic yards. There is no fill expected with respect to the access road.

(f) There is no cut or fill expected for the solar arrays.

(g) It is expected that any excess material generated from the installation of the access road would be used on site to fill in the areas where the stumps are removed.

59. How would the posts (that support the racking system) be driven into the ground? In the event that ledge is encountered, what methods would be utilized for installation?

The racking posts would be driven with a specialized post driving machine. In the event ledge is encountered, Petitioners would evaluate the appropriate remedial measure on a case-by-case basis. Such options would include the use of different footing options such as a concrete pier, boring into bedrock and setting the post in concrete, or fixing a base plate to the post and fastening it to bedrock utilizing rock anchors similar to the remedial measures concerning bedrock.

60. Has a comprehensive geotechnical study been completed for the site to determine if site conditions support the overall Project design? If so, summarize the results. If not, has the Petitioner anticipated and designed the Project with assumed subsurface conditions? What are these assumed conditions?

A geotechnical study would be completed prior to final design engineering and construction. Petitioners assume that the soils would be suitable for a driven post foundation at a typical seven (7) to ten (10) foot embedment depth for the region.

61. Will blasting be required to install any site infrastructure? If not, what methods would be used if bedrock is encountered?

Petitioners do not anticipate blasting. If bedrock is encountered, please see responses to Interrogatory Nos. 57 and 59.

62. Under Tab 3 of the Petition is the Construction Schedule. Does "Site Prep" include tree clearing? And was the tree clearing scheduled for August 2019 to be protective of the northern long-eared bat (NLEB) per page 2 of the NLEB Streamlined Consultation memo dated April 3, 2019?

The "Site Prep" does include the tree clearing required for the Projects. The northern long-eared bat (NLEB) conservation measures are entirely voluntary and discretionary, and have not been imposed on the Projects by the USFW. As such, Petitioners would comply to the extent allowed by the construction schedule.

Maintenance Questions

63. Referencing page 3 of the Operations and Maintenance Plan & Annual Inspection Protocol (OMPAIP), how would the Petitioner remove snow that accumulates on the panels and any effects of blocking the sunlight? Describe snow removal methods including method of site access.

The proposed angle would allow much of the snow and ice to slide off the panels naturally reducing the need for mechanical snow and ice removal. Petitioners do not expect any manual snow removal, plowing or sweeping on site except in emergency events.

64. Has any analysis been conducted to determine structural limits of snow accumulation on the solar panels and steel support structures, assuming heavy, wet snow and or ice? Would there be circumstances that would require snow/ice removal to prevent damage to the panels/rack system?

Yes, the design panels and proposed racking system take into account additional loads resulting from snow and ice accumulation. Please see response to Interrogatory Nos. 24 and 27 concerning the panels and racking.

65. Referencing page 3 of the OMPIAP, would the mowing be performed under or around the proposed solar panels/modules? Would the petitioner adhere to any seasonal restrictions on mowing due to the presence of state and federal protected species?

Mowing under the panels may be required and would be addressed as needed. The proposed design is intended to minimize the frequency of mowing. If mowing is to occur during the activity Eastern Box Turtle season, vegetation shall be mowed to no lower than seven (7) inches above the ground surface to minimize injury to turtles. Flail type mowers with guide bars that ride along the ground shall not be used for mowing.

66. Is the Petitioner proposing to use any herbicides or pesticides? Does the Petitioner have an invasive species plan?

Petitioners are not proposing the use of herbicides or pesticides at this time. Petitioners would add the following language to the Projects Operation and Maintenance Plan (see Attachment 4 of the Petition) under the Vegetation Maintenance and Landscape section as an invasive species plan to control *rosa multiflora*, the dominant invasive shrub located in the field.

"*Rosa multiflora* is an invasive species and exists on site in the existing array field. The primary measure for controlling this invasive species will be via mechanical means of mowing the site. Should mechanical means not be an effective means of controlling this invasive species on site to the point where system production is being affected than the secondary measure for control will be the use of a United States

Environmental Protection Agency herbicide that is approved for use near or in aquatic environments"

67. Would the petitioner store any replacement modules on-site in the event solar panels are damaged by hail, prey shells or other impact hazards? If so, where? How would damaged panels be detected?

Petitioners would not store replacement modules on-site. In the event a panel is damaged, Petitioners and the O&M contractor(s) would receive automated alerts from installed monitoring systems at the subject site and they would dispatch a crew to replace the panel within forty-eight (48) to seventy-two (72) hours.

Respectfully submitted by,

CP MIDDLETOWN SOLAR I, LLC and CP MIDDLETOWN SOLAR II, LLC

By: _____

Jesse A. Langer
UPDIKE, KELLY & SPELLACY, P.C.
8 Frontage Road
East Haven, CT 06512
(203) 786-8317
Email: jlanger@uks.com

ATTACHMENT 1

(FAA Compliance)

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-ANE-2136-OE

Issued Date: 05/03/2019

Bradley J. Parsons, PE, PMP
All-Points Technology Corporation - Engineering
3 Saddlebrook Dr
Killingworth, CT 06419

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Solar Panel Point 1
Location:	Middletown, CT
Latitude:	41-33-00.72N NAD 83
Longitude:	72-42-19.48W
Heights:	348 feet site elevation (SE)
	10 feet above ground level (AGL)
	358 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/ lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

This determination expires on 11/03/2020 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA.This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

If we can be of further assistance, please contact our office at (202) 267-4525, or david.maddox@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-ANE-2136-OE.

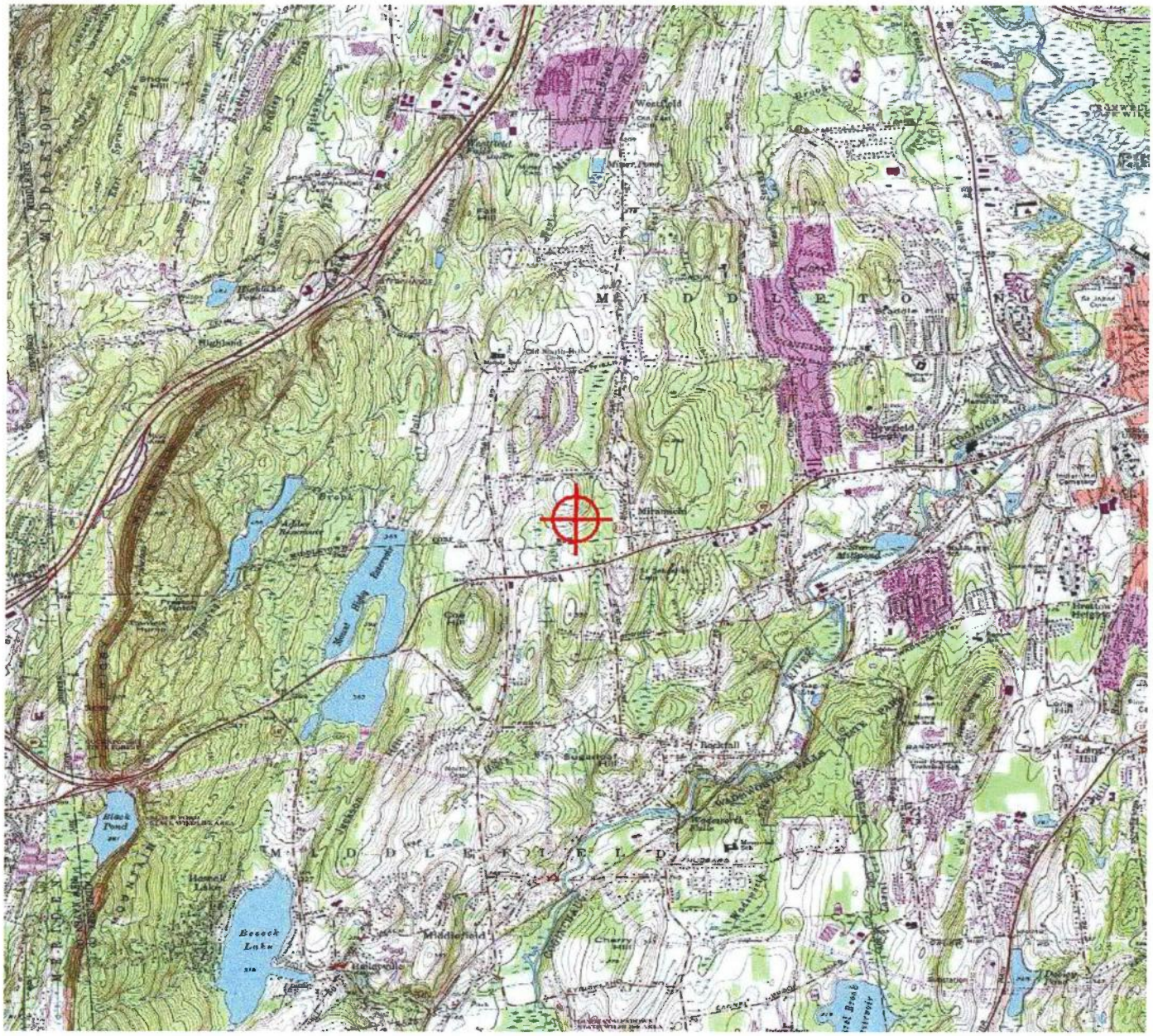
Signature Control No: 403243578-404563310 (DNE)
David Maddox
Specialist

Attachment(s)
Case Description
Map(s)

Case Description for ASN 2019-ANE-2136-OE

Permitting agency requiring applicant to obtain FAA Determination for project. Proposed facility includes the installation of solar panels and supports per attached site plan and figure. Support structures maximum height is 10' AGL.

TOPO Map for ASN 2019-ANE-2136-OE



Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2019-ANE-2122-OE

Issued Date: 05/03/2019

Bradley J. Parsons, PE, PMP
All-Points Technology Corporation - Engineering
3 Saddlebrook Dr
Killingworth, CT 06419

****DETERMINATION OF NO HAZARD TO AIR NAVIGATION FOR TEMPORARY STRUCTURE****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Crane Point 1
Location:	Middletown, CT
Latitude:	41-33-00.72N NAD 83
Longitude:	72-42-19.48W
Heights:	348 feet site elevation (SE)
	22 feet above ground level (AGL)
	370 feet above mean sea level (AMSL)

This aeronautical study revealed that the temporary structure does not exceed obstruction standards and would not be a hazard to air navigation provided the condition(s), if any, in this letter is (are) met:

SEE ATTACHMENT FOR ADDITIONAL CONDITION(S) OR INFORMATION

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of a structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this temporary structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Aviation Administration Flight Procedures Office if the structure is subject to the issuance of a Notice To Airman (NOTAM).

If you have any questions, please contact our office at (202) 267-4525, or david.maddox@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2019-ANE-2122-OE

Signature Control No: 403241741-404563987 (TMP)
David Maddox
Specialist

Additional Condition(s) or Information for ASN 2019-ANE-2122-OE

Proposal: To construct and/or operate a(n) Crane to a height of 22 feet above ground level, 370 feet above mean sea level.

Location: The structure will be located 6.12 nautical miles northeast of MMK Airport reference point.

Case Description for ASN 2019-ANE-2122-OE

Siting/permitting agency requiring applicant to obtain FAA Determination for project. Proposed facility includes the installation of numerous solar panels and support structures per attached site plan and figure. Crane to install support structures during construction, max. crane ht. is 22' AGL.

Part 77 Obstruction Standard(s) Exceeded and Aeronautical Impacts, if any:

Preliminary FAA study indicates that the above mentioned structure would:
have no effect on any existing or proposed arrival, departure, or en route instrument flight rules (IFR) operations or procedures.
have no effect on any existing or proposed arrival, departure, or en route visual flight rules (VFR) operations.
have no effect on any existing or proposed arrival, departure, or en route instrument/visual flight rules (IFR/VFR) minimum flight altitudes.
not exceed traffic pattern airspace
have no physical or electromagnetic effect on the operation of air navigation and communications facilities.
have no effect on any airspace and routes used by the military.

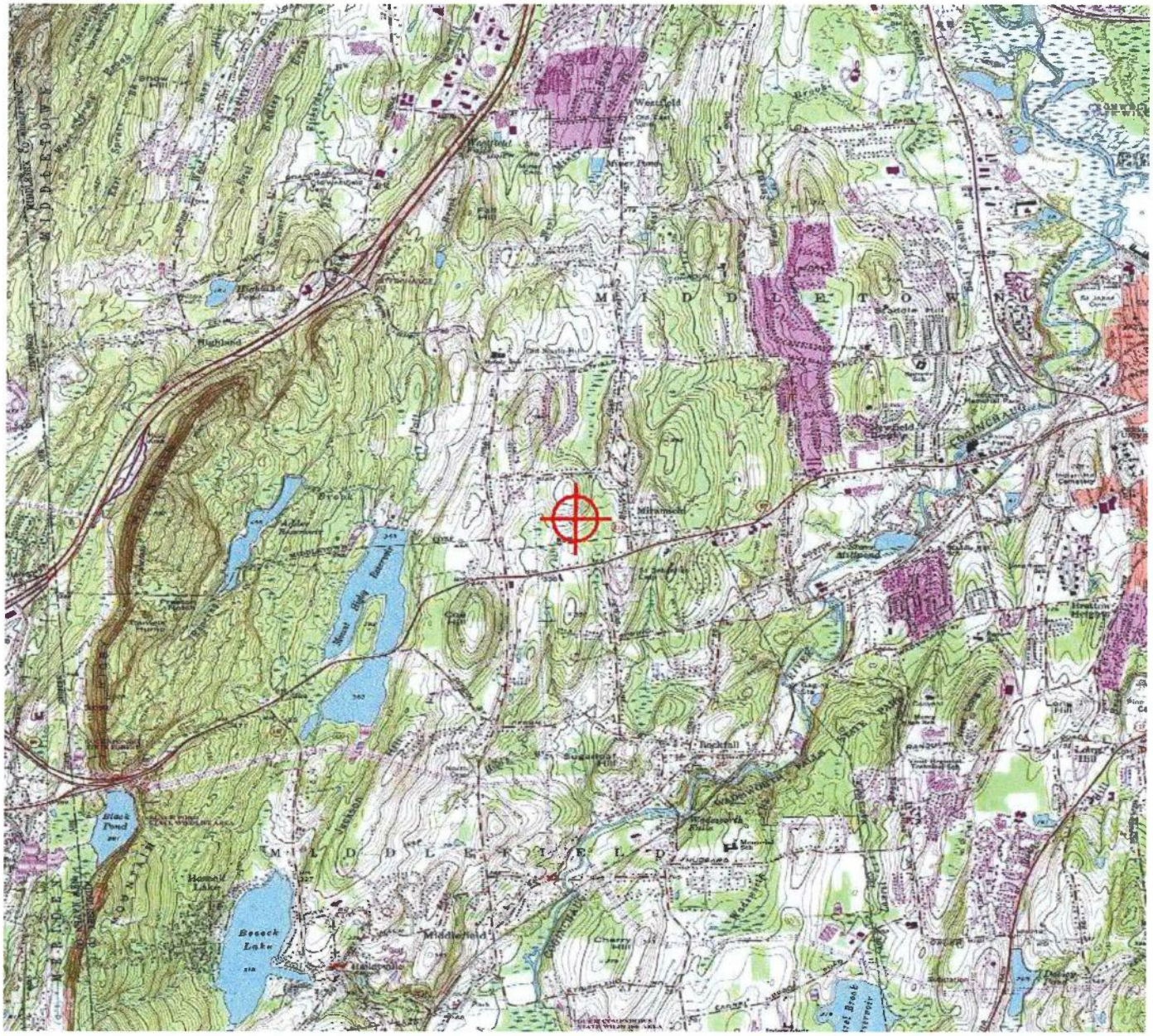
Based on this aeronautical study, the structure would not constitute a substantial adverse effect on aeronautical operations or procedures because it will be temporary. The temporary structure would not be considered a hazard to air navigation provided all of the conditions specified in this determination are strictly met.

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 L Change 2.

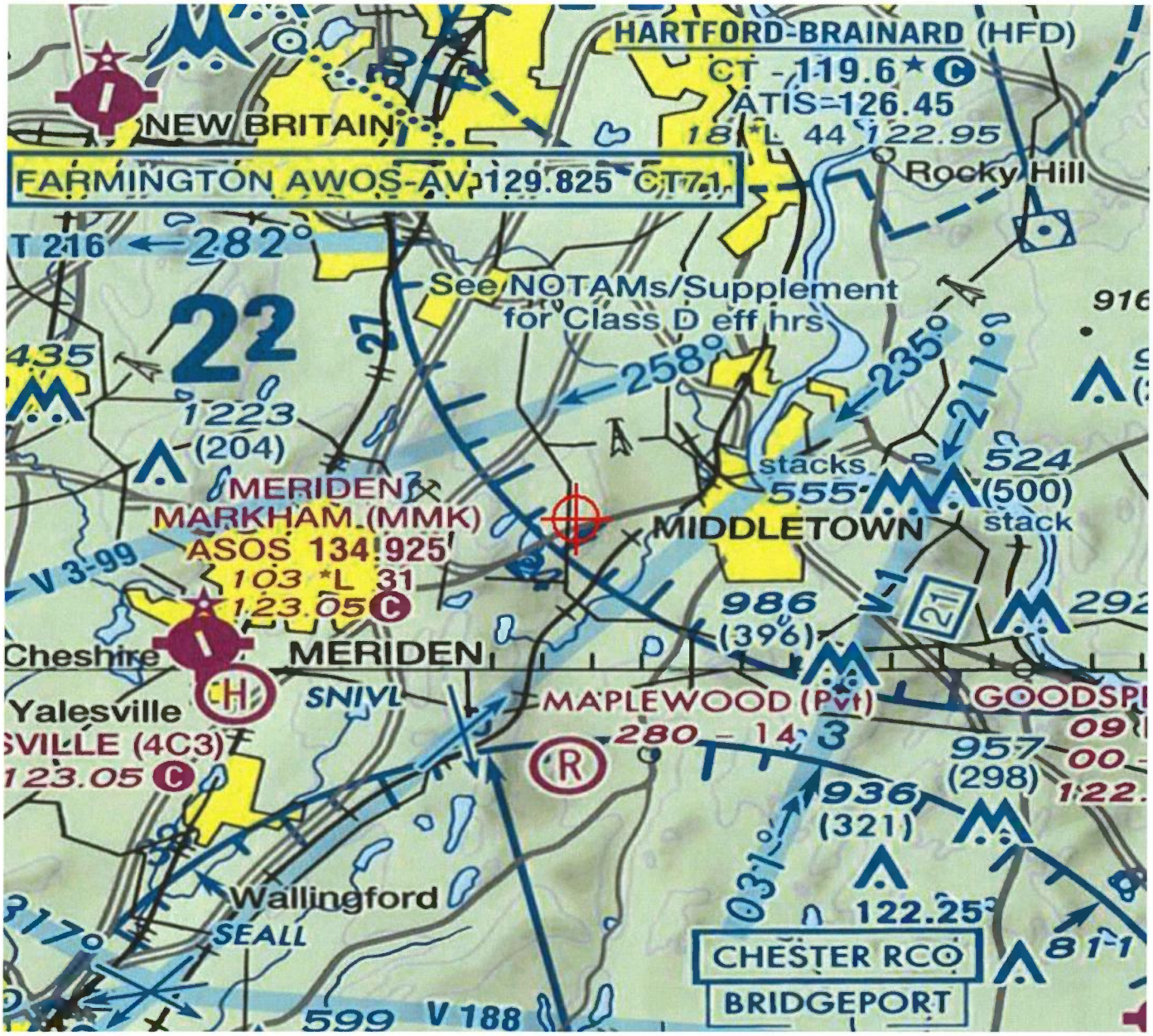
This determination expires on 11/03/2020 unless extended, revised, or terminated by the issuing office.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

TOPO Map for ASN 2019-ANE-2122-OE



Sectional Map for ASN 2019-ANE-2122-OE



ATTACHMENT 2

(Vernal Pool Report)

ALL-POINTS TECHNOLOGY CORPORATION

VERNAL POOL ANALYSIS

May 13, 2019

Citrine Power LLC
Meriden Road
Middlfefield, Connecticut

APT Project No.: CT567100

Re: Proposed Middletown/Middlefield
Solar Project
Meriden Road
Middlefield, Connecticut

All-Points Technology Corporation, P.C. ("APT") has completed an analysis of potential impacts to vernal pool habitat resulting from the development of two (2) solar-based electric generating facilities (collectively, the "Facility" or "Project") proposed by CP Middletown I, LLC and CP Middletown II, LLC, wholly owned subsidiaries of Citrine Power, LLC ("Citrine"). Located on several parcels of land north of Meriden Road in Middlefield, Connecticut (collectively, the "Subject Property"), the Facility would require an area of ±8.7 acres ("Project Area"). The Facility is proposed to be located within existing open field/agricultural field habitat. The Project requires the removal of a narrow windrow of mature trees bisecting two of the fields.

This evaluation is based on field inspections performed on December 19, 2018, April 9 and May 2, 2019 by APT along with a review of site plans prepared by APT (latest revision date 04/10/19). The findings of this assessment are presented below and supplement information contained in the Environmental Assessment ("EA") prepared by APT and dated April 2019, which was included as Attachment 10 to Citrine's Petition No. 1367 filing with the Connecticut Siting Council.

Introduction

APT wetland scientists conducted an initial inspection of the Subject Property on December 19, 2018 to confirm the presence and extent of wetlands and watercourses within approximately 200 feet of the proposed Project activities within the Study Area. Two (2) wetland resources were identified including: a large forested wetland ("Wetland 1") located along the east central edge of the Subject Property (which extends off-site farther to the east); and, a forested wetland system adjacent to the western boundary of the Project Area ("Wetland 2") that contains an interior intermittent watercourse which collectively drain south off—site. At the time of the initial inspection, a small depression area interior to Wetland 1 and two depressions with seasonal flooding were identified within Wetland 2 that demonstrated a potential to support vernal pool breeding habitat. Subsequent site visits were performed in April and May, 2019 by APT and Davison Environmental to confirm if any obligate vernal pool species were utilizing these depressional areas for breeding. Please refer to Figure 2, Existing Conditions Map in the EA for the approximate locations and extents of each potential vernal pool. A summary of our findings is provided below.

Of the three potential vernal pools, only the depressional area located in the central portion of Wetland 2 was confirmed as a vernal pool habitat and characterized as a cryptic as opposed to classic style habitat. The other two potential vernal pools did not exhibit any breeding activity by vernal pool indicator species (i.e., wood frogs, spotted salamander, etc.).

The vernal pool identified consists of a broad depression which slopes gently to the south towards the intermittent stream. Cryptic vernal pools are depressions or impoundments embedded within larger wetlands. Cryptic vernal pools are the most common type of pool in Connecticut, and often occur within seasonally flooded portions of red maple-dominated forested wetlands, such as the southern portion Wetland 2. The maximum pool depth was approximately 10 inches at the time of inspections. Hummocky microtopography is present, with hummock vegetation consisting largely of red maple and tussock sedge. Egg mass attachment sites noted included submerged sedges and downed woody debris. The pool substrate was thick leaf litter coated with fine silt. Moderately thick filamentous algae were present in much of the pool. One facultative species, spring peeper (*Pseudacris crucifer*), was calling within the wetland and is presumed to also be breeding in the pool. Two other amphibian species were confirmed, green frog (*Rana clamitans*) and gray treefrog (*Hyla versicolor*).

Surveys of this pool during the referenced inspection dates documented the presence of both wood frog egg masses (84) and spotted salamander egg masses (18). Inundation of the pool was recorded at approximately 10 inches at the deepest location during each inspection with little variability between inspection dates. The surrounding land use generally consists of maintained open field associated with agriculture activities surrounding Wetland 2, light commercial development associated with Meriden Road (State Highway 66) to the south, and complexes of upland and wetland forest (to the far northwest and northeast).

Physical Impact to Vernal Pool and Surrounding Terrestrial Habitat

Construction and operation of the Facility would not result in direct physical impact to the identified vernal pool. It is widely documented that vernal pool dependent amphibians are not solely dependent upon the actual vernal pool habitat for breeding (i.e., egg and larval development) but require surrounding upland forest habitat for most of their adult lives. Accepted studies recommend protection of adjacent habitat up to 750 feet from the vernal pool edge for obligate pool-breeding amphibians.[1]

In order to evaluate potential impacts to this vernal pool and its surrounding upland habitat, the resource was assessed using methodology developed by Calhoun and Klemens (2002). This methodology assesses vernal pool ecological significance based on two parameters: 1) biological value of the vernal pool, and 2) conditions of the critical terrestrial habitat. The biological rating is based on the presence of state-listed species and abundance and diversity of vernal pool indicator species. The terrestrial habitat is assessed based on the integrity of the vernal pool envelope (within 100 feet of the pool's edge; "VPE") and the critical terrestrial habitat (within 100-750 feet of the pool's edge; "CTH"). Based on the observations, intact forested habitat represents the highest value habitat within both of two obligate these conservation zones to support various vernal pool indicator species breeding, this vernal pool meets the biological criteria for a Tier 1 pool. that relay on forested habitat (e.g., wood frog and spotted salamander). Based on the observations of two obligate vernal pool species breeding

The landscape condition of the vernal pool was then evaluated to determine the existing and proposed quality of the terrestrial (non-breeding) habitat. Pools with 25% or less developed areas in the critical terrestrial habitat are identified as having high priority for maintaining this development percentage (including site clearing, grading and construction).

---

1 Calhoun, A.J.K. and M.W. Klemens. 2002. Best Development Practices (BDPs): Conserving Pool-Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States. WCS/MCA Technical Paper No. 5.

The results of the landscape analysis show that the proposed development would result in slight degradation of the existing tier rating or terrestrial habitat integrity of the vernal pool due to the small amount of disturbance associated with the Facility within the CTH. The VPE will not be impacted by the proposed development; the proposed access road would follow an existing access road that is currently located within the 100' VPE (±70' at its nearest distance). The total area of the CTH (±48.6 acres) associated with the vernal pool includes a mix of developed/maintained areas associated with commercial uses along Meriden Road (±11.5 acres), forested land (±18.0 acres), transitional scrub/shrub habitat (±18.0 acres) and maintained open field habitat (±15.0 acres). The vernal pool's CTH has ±23.7% development under existing conditions resulting in the 75% non-development criterion tipping point not having been exceeded (76.3% non-development) despite being on the precipice. Please refer to the enclosed Vernal Pool Analysis Map.

The proposed Facility and access are located within the CTH and would result in ±8.6 acres of additional development, an increase of ±7.7% of the total CTH associated with the vernal pool. However, a majority of this lost habitat within the CTH consists of open field habitat (±7.9 acres) which is considered suboptimal for vernal pool indicator species that require forested landscapes. A de minimis loss of 0.7-acre of forest habitat is proposed. This forest consists of an isolated windrow, approximately 50 feet in width, located between the two open fields. This windrow does not provide connectivity or a forested migratory corridor to other large forest patches. As the forested habitat proposed to be removed is also considered suboptimal habitat (due to its lack of connectivity to other upland forest or vernal pool breeding sites and has been subjected to a high degree of edge effect), this habitat loss within the CTH is not anticipated to result in a significant negative impact to those populations utilizing Vernal Pool 1.

The majority of the forest habitat within the CTH lies both east and west of the open fields that surround the VPE zone. Therefore, it is reasonable to assume that some portion of the population is migrating from the forest across these fields to breed. Post-construction, the ground cover below the arrays will be retained or re-vegetated with comparable cover. As such, the pre versus post construction vegetative condition will not substantially change. Because no physical barriers to amphibian migration are proposed with the chain link fence being raised 6 inches to accommodate migration (walls, stormwater structures, etc.), it is expected that migration across the field can still occur unimpeded.

Potential short-term impact to herpetofauna associated with the nearby vernal pool habitat are possible should migrating individuals enter the proposed development footprint during construction. Any short-term impacts associated with the proposed development within the vernal pool CTH would be minimized by proper installation and maintenance of erosion and sedimentation controls in accordance with *2002 Connecticut Guidelines For Soil Erosion and Sediment Control*. Combined with implementation of Best Management Practices ("BMPs") during construction, as proposed in a subsequent section of this document, potential short-term impact to herpetofauna would be avoided/minimized.

Hydraulic Alterations

Land-use changes (i.e., clearing, increases in impervious surface) can increase surface runoff in the watershed of a vernal pool. Direct inputs of stormwater flows into a pool may produce sudden water level increases in a short period of time and may lengthen the duration of flooding (hydroperiod). Conversely, diversion of stormwater flows past a pool may have the opposite effect of decreasing water levels and shortening the pool's hydroperiod. In addition, stormwater features that create temporary pools of water can result in a biological "sink" or "decoy" pool, as breeding amphibians deposit eggs into a water body without the necessary hydraulic period to allow for successful development of the eggs into juveniles.

The proposed Facility development will not alter existing surface or subsurface flow conditions or directions. The minor clearing and grading activities associated with the Project will not divert or increase water levels or alter surface water drainage patterns of the vernal pool. Impervious surfaces associated with the Project have been minimized through the maintenance of existing ground cover and the minimal use of gravel within the Project Area to support

infiltration and local groundwater recharge. Therefore, the proposed development will not alter the hydrology of the nearby vernal pool. In addition, no stormwater management features (temporary or permanent) are proposed that would result in creation of a temporary "decoy" pool and "sink" features, which could potentially affect breeding amphibians intercepted on their migration to the nearby vernal pool.

Vernal Pool Recommended Best Management Practices

As a result of the proposed development's location in the vernal pool's CTH, BMPs (in the form of a vernal pool protection plan) are recommended to both protect the nearby wetland resources from potential temporary impacts and avoid unintentional impact or mortality to vernal pool herpetofauna (i.e., wood frog, salamanders, turtles, etc.) during construction activities. The vernal pool BMPs should be implemented during peak amphibian movement periods (early spring breeding [March 1st to May 15th] and late summer dispersal [July 15th to September 15th]) if construction cannot be avoided during these periods, while the wetland BMPs would be implemented regardless of time of year. Details of the recommended vernal pool protection plan (the "Plan") are enclosed. Provided the Plan is properly implemented and maintained during construction activities, it is APT's opinion the proposed Facility development will not result in a likely adverse impact to nearby vernal pool or wetland resources. This opinion is further supported by the fact that, once constructed the Project will not generate substantive traffic within the CTH (thus mitigating potential for roadkill), and requires no nighttime activities or lighting that could result in disruption to amphibian behavior.

If you have any questions regarding the above-referenced information, please feel free to contact me by telephone at (860) 663-1697 ext. 201 or via email at mgustafson@allpointstech.com.

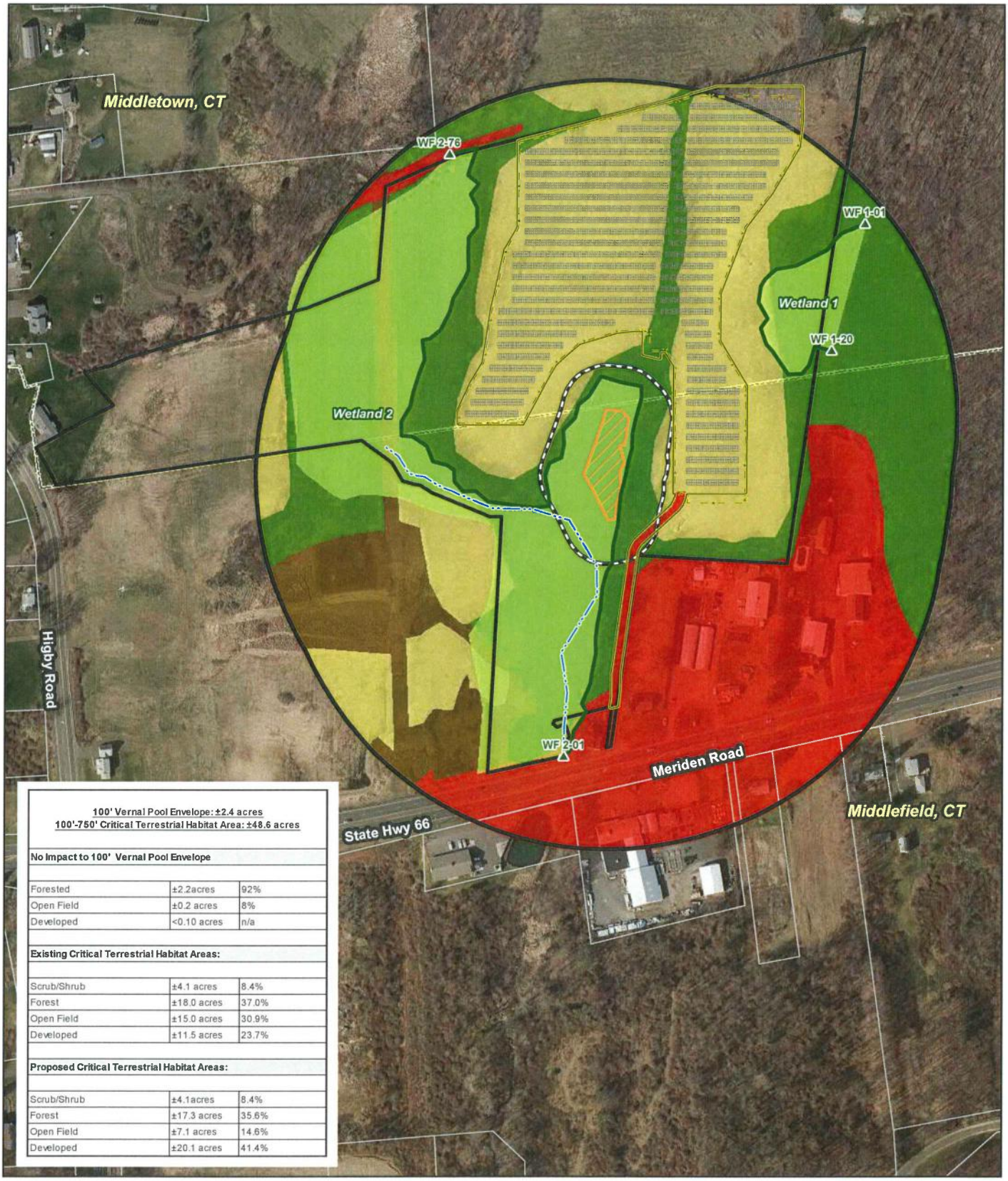
Sincerely,

All-Points Technology Corporation, P.C.

Matthew Gustafson
Wetland Scientist

Enclosures

Vernal Pool Analysis Map



100' Vernal Pool Envelope: ±2.4 acres 100'-750' Critical Terrestrial Habitat Area: ±48.6 acres		
No Impact to 100' Vernal Pool Envelope		
Forested	±2.2acres	92%
Open Field	±0.2 acres	8%
Developed	<0.10 acres	n/a
Existing Critical Terrestrial Habitat Areas:		
Scrub/Shrub	±4.1 acres	8.4%
Forest	±18.0 acres	37.0%
Open Field	±15.0 acres	30.9%
Developed	±11.5 acres	23.7%
Proposed Critical Terrestrial Habitat Areas:		
Scrub/Shrub	±4.1acres	8.4%
Forest	±17.3 acres	35.6%
Open Field	±7.1 acres	14.6%
Developed	±20.1 acres	41.4%

Legend

- Site
- Project Area
- Proposed Solar Array
- Proposed Perimeter Fence
- Vernal Pool
- 100' Vernal Pool Envelope
- 100'-750' Critical Terrestial Habitat Area
- Wetland Flag
- Delineated Wetland Boundary
- Approximate Wetland Area
- Site
- Delineated Intermittent Watercourse (IWC)
- Culvert
- Town Line
- Approximate Parcel Boundary

Habitat Type

- Developed
- Forest
- Open Field
- Scrub/Shrub

Vernal Pool Analysis Map

Proposed Middletown/Middlefield Solar Project
Meriden Road
Middlefield, Connecticut

Map Notes:
Base Map Source: 2016 Aerial Photograph (CTECO)
Map Scale:1 inch equals 300 feet
Map Date: May 2019

N W E S

300 150 0 300 Feet

ALL-POINTS TECHNOLOGY CORPORATION

Vernal Pool Protection Plan

Vernal Pool Protection Plan

A qualified professional from APT would serve as the Environmental Monitor for this project to ensure that vernal pool protection measures are implemented properly. The proposed vernal pool protection program consists of several components including: isolation of the project perimeter; periodic inspection and maintenance of isolation structures; herpetofauna sweeps; education of all contractors and sub-contractors prior to initiation of work on the site; protective measures; and, reporting.

1. **Erosion and Sedimentation Controls**

    a. Plastic netting used in a variety of erosion control products (i.e., erosion control blankets, fiber rolls [wattles], reinforced silt fence) has been found to entangle wildlife, including reptiles, amphibians, birds and small mammals. No permanent erosion control products or reinforced silt fence will be used on the project. Temporary erosion control products that will be exposed at the ground surface represent a potential for wildlife entanglement will use either erosion control blankets and fiber rolls composed of processed fibers mechanically bound together to form a continuous matrix (netless) or netting composed of planar woven natural biodegradable fiber to avoid/minimize wildlife entanglement.

    b. Installation of erosion and sedimentation controls, required for erosion control compliance and creation of a barrier to possible migrating/dispersing herpetofauna, shall be performed by the Contractor following clearing activities and prior to any earthwork. The Environmental Monitor will inspect the work zone area prior to and following erosion control barrier installation to ensure the area is free of herpetofauna and satisfactorily installed. The intent of the barrier is to segregate the majority of the work zone from migrating/dispersing herpetofauna. Oftentimes complete isolation of a work zone is not feasible due to accessibility needs and locations of staging/material storage areas, etc. In those circumstances, the barriers will be positioned to deflect migrating/dispersal routes away from the work zone to minimize potential encounters with herpetofauna.

    c. The barrier fencing will consist of non-reinforced conventional erosion control woven fabric, installed approximately six inches below surface grade and staked at seven to ten-foot intervals using four-foot oak stakes or approved equivalent. In addition to required daily inspection by the Contractor, the fencing will be periodically inspected for tears or breeches in the fabric following installation by APT throughout the course of the construction project.

    d. The extent of the barrier fencing will be as shown on the site plans. The Contractor shall have additional barrier fencing should field conditions warrant extending the fencing as directed by APT.

    e. No equipment, vehicles or construction materials shall be stored outside of barrier fencing.

    f. All silt fencing shall be removed within 30 days of completion of work and permanent stabilization of site soils so that reptile and amphibian movement between uplands and wetlands is not restricted. If fiber rolls/wattles, straw bales, or other natural material erosion control products are used, such devices will not be left in place to biodegrade and shall be promptly removed after soils are stable so as not to create a barrier to migrating wildlife. Seed from seeding of soils should not spread over fiber rolls/wattles as it makes them harder to remove once soils

are stabilized by vegetation.

2. **Contractor Education:**

   a. Prior to work on site and initial deployment/mobilization of equipment and materials, the Contractor shall attend an educational session at the pre-construction meeting with APT. This orientation and educational session will consist of information such as, but not limited to: representative photographs of typical herpetofauna that may be encountered, typical species behavior, and proper procedures if species are encountered. The meeting will further emphasize the non-aggressive nature of these species, the absence of need to destroy such animals and the need to follow Protective Measures as described in Section 4 below. The Contractor will designate one of its workers as the "Project Monitor", who will receive more intense training on the identification and protection of herpetofauna.

   b. The Contractor will designate a member of its crew as the Project Monitor to be responsible for the periodic "sweeps" for herpetofauna within the construction zone each morning. This individual will receive more intense training from APT on the identification and protection of herpetofauna in order to perform sweeps. Any herpetofauna discovered would be carefully translocated outside the work zone in the general direction the animal was oriented.

   c. The Contractor's Project Monitor will be provided with cell phone and email contacts for APT personnel to immediately report any encounters with herpetofauna. Educational poster materials will be provided by APT and displayed on the job site to maintain worker awareness as the project progresses.

   d. APT will also post Caution Signs throughout the project site for the duration of the construction project providing notice of the environmentally sensitive nature of the work area, the potential for encountering various amphibians and reptiles and precautions to be taken to avoid injury to or mortality of these animals.

3. **Petroleum Materials Storage and Spill Prevention**

   a. Certain precautions are necessary to store petroleum materials, refuel and contain and properly clean up any inadvertent fuel or petroleum (i.e., oil, hydraulic fluid, etc.) spill due to the project's location in proximity to sensitive wetlands.

   b. A spill containment kit consisting of a sufficient supply of absorbent pads and absorbent material will be maintained by the Contractor at the construction site throughout the duration of the project. In addition, a waste drum will be kept on site to contain any used absorbent pads/material for proper and timely disposal off site in accordance with applicable local, state and federal laws.

   c. The following petroleum and hazardous materials storage and refueling restrictions and spill response procedures will be adhered to by the Contractor.

      i. Petroleum and Hazardous Materials Storage and Refueling
         1. Refueling of vehicles or machinery shall occur a minimum of 100 feet from wetlands or watercourses and shall take place on an impervious pad with secondary containment designed to contain fuels.

2. Any fuel or hazardous materials that must be kept on site shall be stored on an impervious surface utilizing secondary containment a minimum of 100 feet from wetlands or watercourses.

ii. Initial Spill Response Procedures
    1. Stop operations and shut off equipment.
    2. Remove any sources of spark or flame.
    3. Contain the source of the spill.
    4. Determine the approximate volume of the spill.
    5. Identify the location of natural flow paths to prevent the release of the spill to sensitive nearby waterways or wetlands.
    6. Ensure that fellow workers are notified of the spill.

iii. Spill Clean Up & Containment
    1. Obtain spill response materials from the on-site spill response kit. Place absorbent materials directly on the release area.
    2. Limit the spread of the spill by placing absorbent materials around the perimeter of the spill.
    3. Isolate and eliminate the spill source.
    4. Contact the appropriate local, state and/or federal agencies, as necessary.
    5. Contact a disposal company to properly dispose of contaminated materials.

iv. Reporting
    1. Complete an incident report.
    2. Submit a completed incident report to the Connecticut Siting Council.

4. **Protective Measures**

   a. A thorough cover search of the construction area will be performed by APT's Environmental Monitor for herpetofauna prior to and following installation of the silt fencing barrier to remove any species from the work zone prior to the initiation of construction activities. Any herpetofauna discovered would be carefully translocated outside the work zone in the general direction the animal was oriented. Periodic inspections will be performed by APT's Environmental Monitor throughout the duration of the construction.

   b. Any stormwater management features, ruts or artificial depressions that could hold water created intentionally or unintentionally by site clearing/construction activities will be properly filled in and permanently stabilized with vegetation to avoid the creation of vernal pool "decoy pools" that could intercept amphibians moving toward the vernal pools. Stormwater management features such as level spreaders will be carefully reviewed in the field to ensure that standing water does not endure for more than a 24 hour period to avoid creation of decoy pools and may be subject to field design changes. Any such proposed design changes will be reviewed by the design engineer to ensure stormwater management functions are maintained.

   c. Erosion control measures will be removed no later than 30 days following final site stabilization so as not to impede migration of herpetofauna or other wildlife.

5. **Herbicide and Pesticide Restrictions**

   a. Contractors will avoid the use of herbicides and pesticides at the proposed Facility where feasible.

6. **Reporting**

   a. Following completion of the construction project, APT will provide a summary report to Connecticut Siting Council for compliance verification documenting any observations of herpetofauna and the monitoring and maintenance of the barrier fence and erosion control measures.

Photo Documentation

Photo 1: Overview of hayfield (bisected by tree windrow), looking north. Field in the foreground and center of photo is proposed location of solar facility.

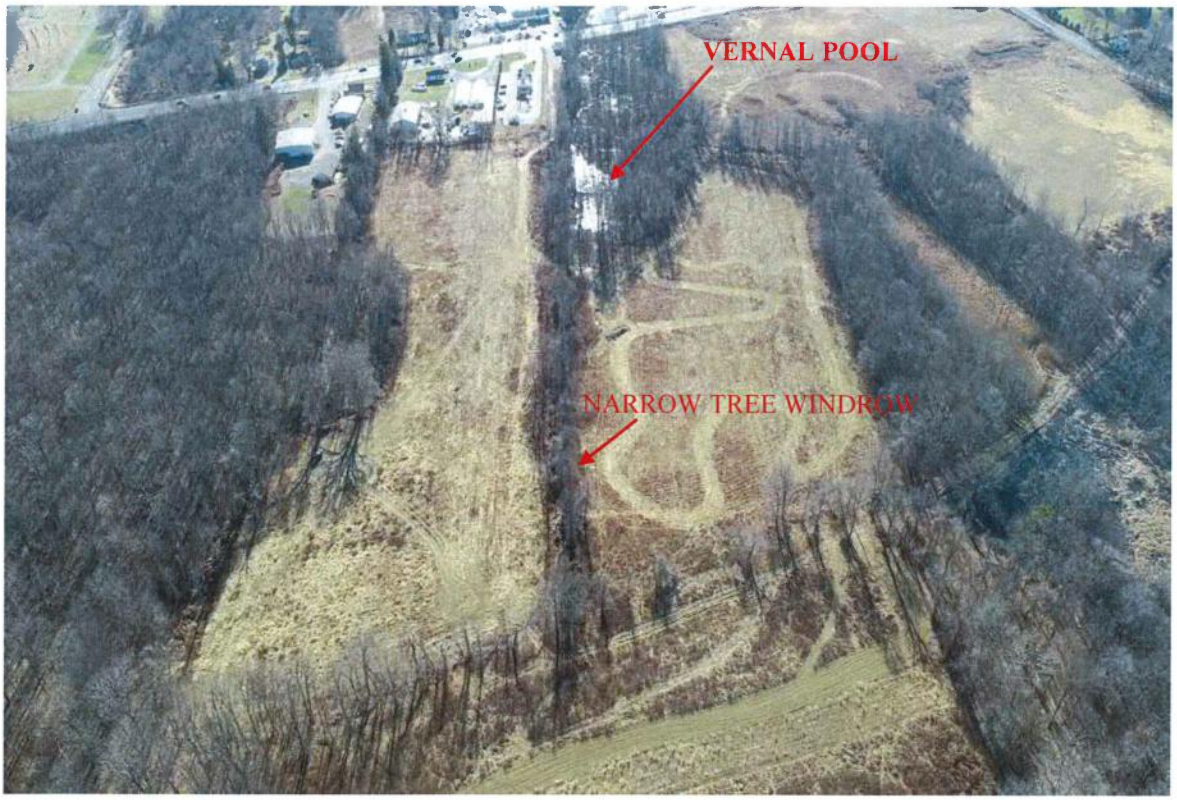


Photo 2: Overview of hayfield (bisected by narrow tree windrow that is proposed to be cleared), looking south.

Photo 3: View of existing access from Meriden Road looking north.

Photo 4: View of existing field habitat looking west at narrow tree windrow.

Photo 5: View of existing field habitat looking north from end of existing access.

Photo 6: View of typical meadow habitat under and surrounding solar panels.

Photo 7: View of Vernal Pool 1.

Photo 8: View of Vernal Pool 1.