STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

July 25, 2016

Steve Broyer
Windham Solar LLC
c/o Ecos Energy LLC
222 South 9th Street, Suite 1600
Minneapolis, MN 55402

RE: **PETITION NO. 1221** - Windham Solar LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed construction, maintenance and operation of two 1.0 Megawatt and one 1.5 Megawatt Solar Photovoltaic Electric Generating facilities located at 91 Plainfield Pike Road, Plainfield, Connecticut.

Dear Mr. Broyer:

At a public meeting held on July 21, 2016, the Connecticut Siting Council (Council) considered and denied the above-referenced petition for a declaratory ruling (petition) that was submitted to the Council on March 21, 2016 with supplemental information submitted on May 2, 2016, June 27, 2016, and July 11, 2016, on the basis that the petition remains incomplete and appears to have a substantial adverse effect on water quality.

The Council considered and identified the following deficiencies and adverse effects on water quality:

1. Wetlands comprise approximately 25% of the subject site and there would be 4,660 square feet of direct wetland impacts that would require a Category 1 or Category 2 permit from the U.S. Army Corps of Engineers;
2. No access to the "Future Project" has been determined or developed and may require a brook crossing and associated impacts;
3. No detailed Vernal Pool Analysis nor Vernal Pool Habitat Mitigation Plan was submitted. In response to Council Interrogatory No. 43 submitted June 27, 2016, a Vernal Pool Analysis was deemed "not applicable at this time;" however, during the March 30, 2016 and April 13, 2016 surveys for breeding amphibians conducted at the site, spotted salamander and wood frog egg masses were found in all three identified vernal pools;
4. No response from the Department of Energy and Environmental Protection (DEEP) Natural Diversity Database has been submitted; and
5. Eversource confirmed that only 2 MW of interconnection capacity is available whereas the petition requests approval for 3.5 MW of interconnection capacity.

Enclosed for your information is a copy of the draft staff report on this project.

Please do not hesitate to contact our office if you should have any questions.

Very truly yours,

Robert Stein MMB

Robert Stein
Chairman

RS/MP/lm

c: Honorable Paul E. Sweet, First Selectman, Town of Plainfield
Ryan Brais, Zoning Officer, Town of Plainfield
Lou Soja, Planning and Engineering, Town of Plainfield
Michael Melone, Windham Solar LLC, c/o Allco Renewable Energy Limited
Leo Properties LLC, 93 High Street, Moosup, CT 06354

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

Petition No. 1221
Windham Solar LLC
91 Plainfield Pike Road, Plainfield
Staff Report
July 21, 2016

Introduction

On March 21, 2016, Windham Solar LLC (WS or Petitioner) submitted a petition to the Connecticut Siting Council (Council) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the construction, operation and maintenance of a 3.5 megawatt (MW) alternating current (AC) solar photovoltaic generating facility located on 91 Plainfield Pike Road (Route 14A) in Plainfield, Connecticut. Council member James J. Murphy, Jr. and Michael Perrone of the Council staff visited the site on April 20, 2016 to review this proposal with Steve Broyer from WS; Michael Melone, Vice President and General Counsel, Allco Renewable Energy Limited; and Louis J. Soja, Jr., L.S., Town Planner, Town of Plainfield.

On or about March 15, 2016, the Petitioner notified the Town of Plainfield, other state and local officials and abutting property owners of the proposed project. To date, the Council has not received any comments from abutters.

Municipal Consultation

The Petitioner contacted the Town of Plainfield Planning and Engineering Department Supervisor and submitted draft plans to them for input. The Petitioner also met with Town staff on March 22, 2016 to discuss the project further. To date, the Council has not received any written comments from the Town of Plainfield.

Public Benefit

The project would be a "grid-side distributed resources" facility, as defined in Connecticut General Statutes (CGS) § 16-1(a)(37). CGS § 16a-35k establishes the State's energy policy, including the goal to "develop and utilize renewable energy resources, such as solar and wind energy, to the maximum practicable extent." The 2013 Connecticut Comprehensive Energy Strategy emphasizes low- or no-emission sources of electric generation and development of more distributed generation. The proposed facility is distributed generation. Specifically, the proposed facility will contribute to fulfilling the State's Renewable Portfolio Standard as a zero emission Class I renewable energy source.

Proposed Site

The project would be located on an approximately 67.2-acre parcel owned by PLH, LLC that is currently wooded and vacant. The eastern portion of the site is zoned I-1 Industrial. The western portion of the site is zoned RA-19 Residential. To the north of the subject property is a church and some residences on Route 14A. To the northeast is a commercial auto body business and an apartment building off of Route 14A. To the west is Interstate 395. To the east and immediate south is largely undeveloped. Farther to the south (i.e. nearly 800 feet) is a residential development on Colonial Road.

Proposed Project

The solar field would include a total of 12,384 solar photovoltaic modules on fixed rack systems oriented to the south. These solar panels would be tilted on an angle of 15 degrees with the horizontal. The solar panels would reach a maximum height of about 6-foot 5-inches above ground level (agl) at the top edge and about three feet agl on the bottom edge. The project racking would be designed for snow and wind loading per a structural engineer duly licensed in Connecticut.

According to WS' most updated Site Plan received by the Council on May 2, 2016, the solar project has three portions on the same subject property: the Future Project; the South Project; and the East Project. (The most current updated site plan is attached.) The Future Project is 1.5 MW AC and approximately 4,680 modules and located in the northwestern portion of the subject property. The South Project is 1.0 MW AC and approximately 4,248 modules and located in the southwestern portion of the property. The East Project is 1.0 MW AC and approximately 3,456 modules and located in the southeastern portion of the property. Each of the three projects would have their own inverter and transformer pads.

Collectively, these solar arrays would have one point of interconnection with Eversource's existing overhead three-phase distribution line that runs parallel to Plainfield Pike Road. Proposed utilities would run overhead from Route 14A in a southerly direction and near the eastern property line for about ¼-mile to reach the East Project. If approved, staff suggests that the electrical utility interconnection be included in the D&M Plan.

The project would include a seven-foot tall security fence without barbed wire. WS evaluated a one-inch mesh fence, but found that the cost is nearly double that of the two-inch mesh fence. WS does not believe that a smaller mesh would provide sufficient added security value for the project to justify the incremental cost. If approved, staff recommends that the final fence design be included in the D&M Plan.

The Petitioner would acquire an access easement from the auto body property to the east. This would allow the Petitioner to have direct access to the East Project. Then the proposed access would run to the north and then continue westward to the South Project. Since the original filing, a brook or stream was discovered just east of the Future Project. This leaves the Future Project isolated and difficult to access from the subject property. WS has not secured an easement via an abutting property on Route 14A which would eliminate a brook crossing and associated impacts. In addition, Eversource, the local electrical distribution utility, has confirmed that only 2 MW of interconnection capacity is available. Thus, the Petitioner continues to seek Council approval of the Future Project, South Project, and the East Project, but is willing to limit its construction at this time via the D&M Plan. In other words, the first D&M Plan would only include the East and South Projects. Should off-site access be secured to the north in the future, staff suggests that the Petitioner file a separate D&M Plan for the Future Project and include the details of its new access to the north.

Environment, Cultural and Scenic Values

The proposed project would involve a total of about 18.07 acres of tree clearing. Of that total, approximately 0.1 acres would be in wetlands and 3.6 acres would be located within wetland buffer areas. The Petitioner has performed a carbon debt analysis. While the loss of trees necessarily reduces carbon capturing ability, the carbon dioxide emissions reductions due to the solar power displacing more traditional generation (which includes fossil-fueled generation) results in a very rapid

"carbon payback" of about two days of full energy production. Thus, the proposed project would very rapidly result in a net reduction in carbon dioxide emissions for the environment.

The solar rack posts are H-beams which would be driven into the ground. An alternative grouted foundation would be designed if subsurface boulders or ledge is encountered and used on an as needed basis. Approximately 500 cubic yards of cut and approximately 500 cubic yards of fill would be required to grade the project. Thus, no import or export of soil would be required.

Ponding would be installed at a continuous elevation at the perimeter of the site footprint and sized based on the contributing drainage area. Construction would not occur in wetlands, but potentially within the wetland buffer. Post-construction hydraulic discharge from the site would be less than pre-construction values. Detailed hydrology and grading design would be an element of the project Development and Management Plan (D&M Plan). If approved, staff recommends including a condition that a stormwater management plan consistent with the *2004 Connecticut Stormwater Quality Manual* and the final erosion and sedimentation control plan consistent with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control* be provided in the D&M Plan.

A Decommissioning Plan was included in the Petition and has provisions for project removal after a service life of up to 45 years.

The project would have no adverse environmental effect to air or water quality. The solar project would not produce air emissions of regulated air pollutants or greenhouse gasses during operation. The proposed project is not located within an acquifer protection area. While a 100-year flood zone exists in the far western portion of the subject property, the project itself would not be constructed within a 100-year or 500-year flood zone.

The mapped wetlands comprise approximately one-fourth of the site. Wetlands are located on the eastern portion of the subject property and surround the East Project to the west and north. Wetlands also surround the South Project and North Project. While the solar arrays and associated equipment would not have direct wetland impacts, proposed on-site access that would connect the South Project to the East Project would result in direct wetland impacts of approximately 4,660 square feet. Council staff had inquired about the possibility of shifting the access to the South Project slightly north to avoid wetlands, but was informed by the Petitioner that the brook would prevent such scenario. Notwithstanding, the Petitioner has made some adjustments to the access to reduce the wetland impact area from 6,015 square feet to about 4,660 square feet. The wetland impacts are anticipated to be eligible for a Category I permit from the U.S. Army Corps of Engineers. WS has provided a copy of its Category I permit form dated June 21, 2016.

On March 30, 2016, a survey for breeding amphibians was conducted on the property. Three areas of breeding amphibians were found within the mapped wetlands. A second survey was performed on April 13, 2016. Three vernal pools were identified. All three are rated as Tier I vernal pools. Vernal Pool 1 is located near Wetland Flag #23 immediately north of the South Project. Eleven wood frog egg masses and a single spotted salamander egg mass were seen in this pool. This area is approximately 50 feet southwest of the project fence line. Vernal Pool 2 is located west of the East Project near Wetland Flags #136 and #C39. Two spotted salamander egg masses and eleven wood frog egg masses were noted in this pool. This area is approximately 113 feet west of the project fence line. Vernal Pool 3 is located along the western edge of the mapped wetlands. Two spotted salamander egg masses and four wood frog egg mases were noted in this pool. This area is approximately 231 feet west of the East Project fence line. Vernal Pool 3 was found within 100 feet south of Vernal Pool 2.

Vernal Pool Assessment Sheets were provided in the Wetland Report dated April 27, 2016 in order to assess the quality of the vernal pool analysis requirements of the Calhoun and Klemens 2002 Best Development Practices (2002 BDPs). These sheets indicate that at least 75 percent of the vernal pool envelopes (VPE) are currently undeveloped. In addition, at least 50 percent of the critical terrestrial habitat (CTH) areas for each vernal pool is currently undeveloped.

The East Project would not be located within any VPEs. However, it would be located within the CTH of Vernal Pool 2. The East Project has a footprint area of about 6.2 acres. Thus, the proposed development area would be approximately 16 percent of the VPE area.

The South Project would not be located within any VPEs. However, it would be located within the CTH of Vernal Pool 1. The South Project has a footprint area of about 5.2 acres. Thus, the currently proposed development area would be approximately 13 percent of the VPE area.

The Future Project would encroach on the VPE of Vernal Pool 1 by roughly 20 feet. However, the Future Project would be located within the CTH of Vernal Pool 1. The Future Project has a footprint area of about 5.6 acres. Thus, the Future project would result in a development area of 14 percent of the CTH. Accordingly, the Future Project plus the South Project would cumulatively result in over 27 percent development within the CTH. Cumulatively, this would not comply with the 2002 BDPs because it would exceed 25 percent. Council staff notes that, if approved, any D&M Plan that includes the Future Project should include a Vernal Pool Habitat Impact Mitigation Plan.

WS filed with the Connecticut Department of Energy and Environmental Protection (DEEP) regarding the Natural Diversity Database (NDDB). WS has not received a response to date. However, Council staff notes that the proposed project area is located outside of the shaded area of the NDDB. The nearest shaded area is over 3,750 feet east of the proposed project and north of Route 14A.

While DEEP NDDB analysis covers State-listed species, Council staff inquired about federally-listed species. Specifically, WS' consultant, E3 Environmental (E3), reviewed the project to assess possible impacts to federally-listed species. E3 notes that the northern long-eared bat, a federally-designated Threatened species, has the potential to occur within the project area. However, E3 notes that, provided tree clearing is suspended during the pup rearing season (i.e. June 1 through July 31), the proposed project would not result in adverse impacts to this species. E3 also notes that the sandplain gerardia, a federally-designated Endangered species, has the potential to occur in Windham County. However, E3 notes that, the proposed project, due to its distance from the coast, would not result in a negative impact to this species. The small whorled pogonia, a federally-designated Threatened species, has the potential to occur in Windham County. However, E3 notes that due to the lack of preferred habitat and based on previous consultations with a State agency, the proposed project is not expected to have an adverse impact on the small whorled pogonia.

WS quantified the area of the proposed project on Prime Farmland and/or Farmland of Statewide Importance. The results are listed below. Council staff notes that P1, P2, and F1 refer to Project 1, Project 2, and Future 1, respectively. Although agricultural land is not a natural resource, but is an economic resource, according to the Connecticut Supreme Court, with respect to the possible farmland value of the subject parcels to be developed for a solar facility, the Connecticut Department of Agriculture has not purchased any development rights for the proposed project as part of the State Program for the Preservation of Agricultural Land. WS owns all of the development rights on the parcels.

Project #	Soil Type	Designation	Impact Area (AC)	% Project Footprint
P1 & P2	7	Farmland of statewide importance	3.07	25.6%
P1 & P2	3	Not prime farmland	2.75	23.0%
P1 & P2	38C	Farmland of statewide importance	6.03	50.4%
P1 & P2	62C	Not prime farmland	0.12	1.0%
F1	23A	Prime farmland	0.86	15.4%
F1	62C	Not prime farmland	1.73	30.9%
F1	61B	Not prime farmland	2.99	53.5%
F1	3	Not prime farmland	0.01	0.2%

The Petitioner filed with the State Historic Preservation Office (SHPO) for review in mid-February 2016. WS received the SHPO response letter dated June 23, 2016 and provided a copy to the Council. SHPO requested that a professional cultural resources assessment and reconnaissance survey be completed prior to construction.

The proposed project would meet DEEP noise standards at the boundaries of the subject property. Noise associated with construction would be exemption per DEEP noise regulations.

The nearest off-site residence is located approximately 686 feet to the north of the Future Project and is located along Route 14A. The visual impact is not expected to be significant given that there would be significant tree cover around all solar arrays in the project. Thus, no landscape plantings are proposed.

Conclusion

The Petitioner contends that pursuant to CGS § 16-50k(a), the Siting Council shall approve by declaratory ruling the construction or location of "any customer-side distributed resources project or facility or grid-side distributed resources project or facility with a capacity of not more than sixty-five megawatts, as long as such project meets air and water quality standards of the Department of Energy and Environmental Protection." The proposed project meets these criteria. The proposed project will not produce air emissions, will not utilize water to produce electricity, was designed to minimize wetland impacts, and furthers the State's energy policy by developing and utilizing renewable energy resources and distributed energy resources. In addition, as demonstrated above, the proposed project will not have a substantial adverse environmental effect.

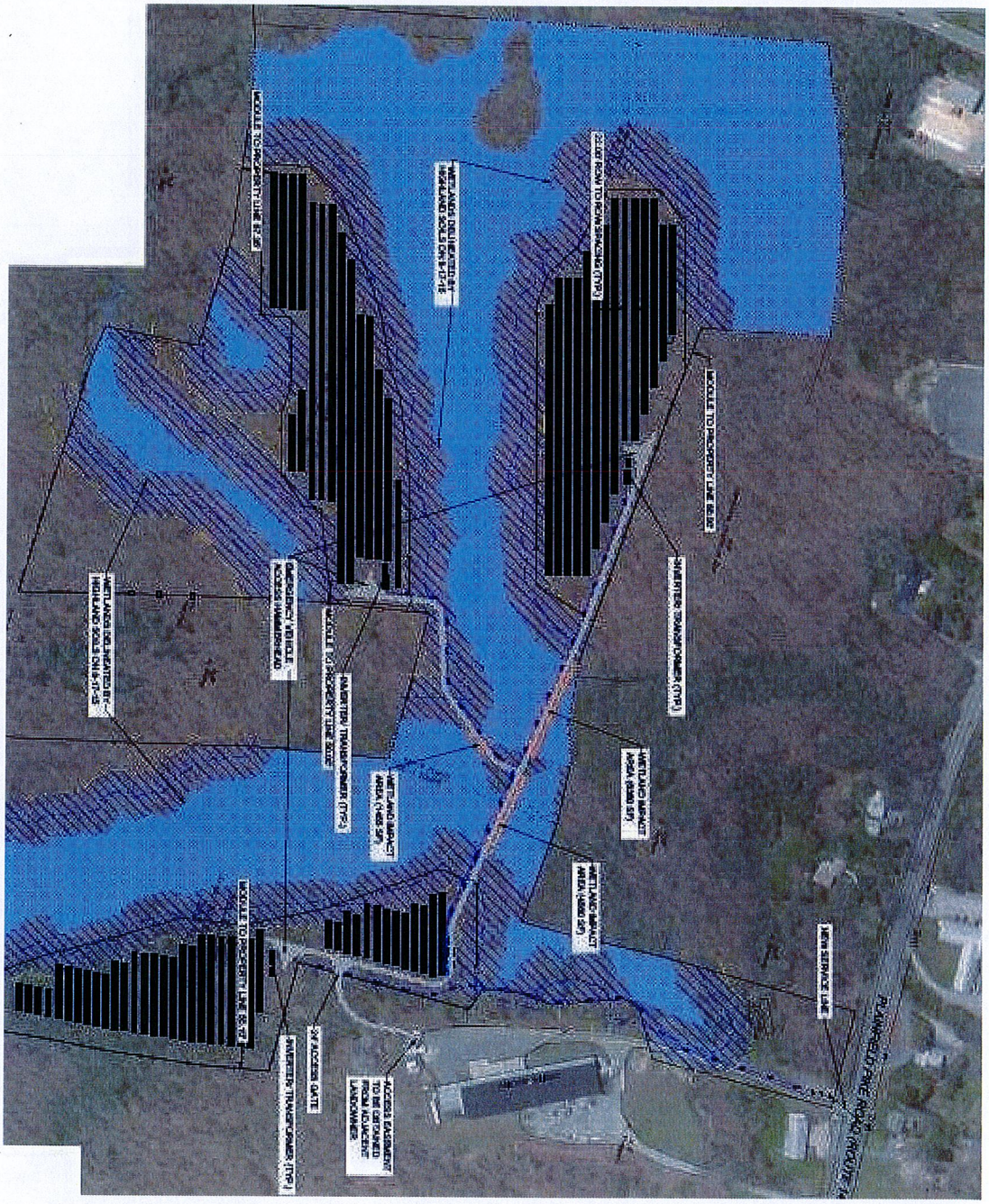
Recommendations

Staff recommends inclusion of the following conditions:

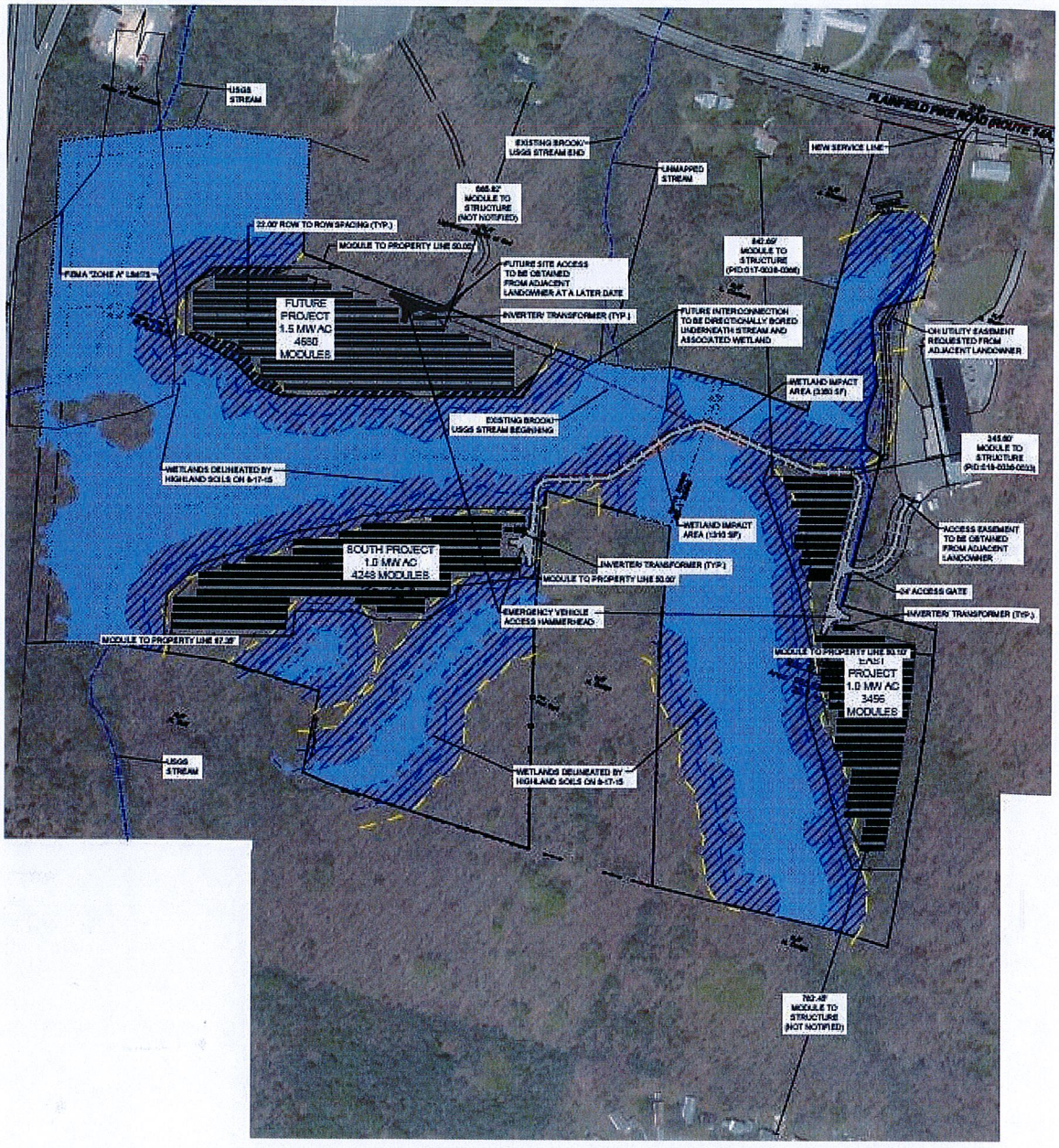
- The Petitioner shall prepare a Development and Management Plan (D&M) for this site in compliance with Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Plainfield for comment and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) A final site plan for the East Project and the South Project including, but not limited to, the electrical interconnection design, fence design and access;
    b) A final site plan for the Future Project including, but not limited to, the electrical interconnection design, fence design and access;
    c) Vernal Pool Habitat Impact Mitigation Plan for the Future Project;
    d) Erosion and sedimentation control plan consistent with the *2002 Connecticut Guidelines for Erosion and Sedimentation Control;*

e) A stormwater management plan consistent with the *2004 Connecticut Stormwater Quality Manual*; and
f) DEEP Natural Diversity Database Letter and associated wildlife protective measures;
g) Plans to avoid tree clearing during the June 1 through July 31 as a protective measure for the northern long-eared bat;
h) Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel; and
i) Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes.

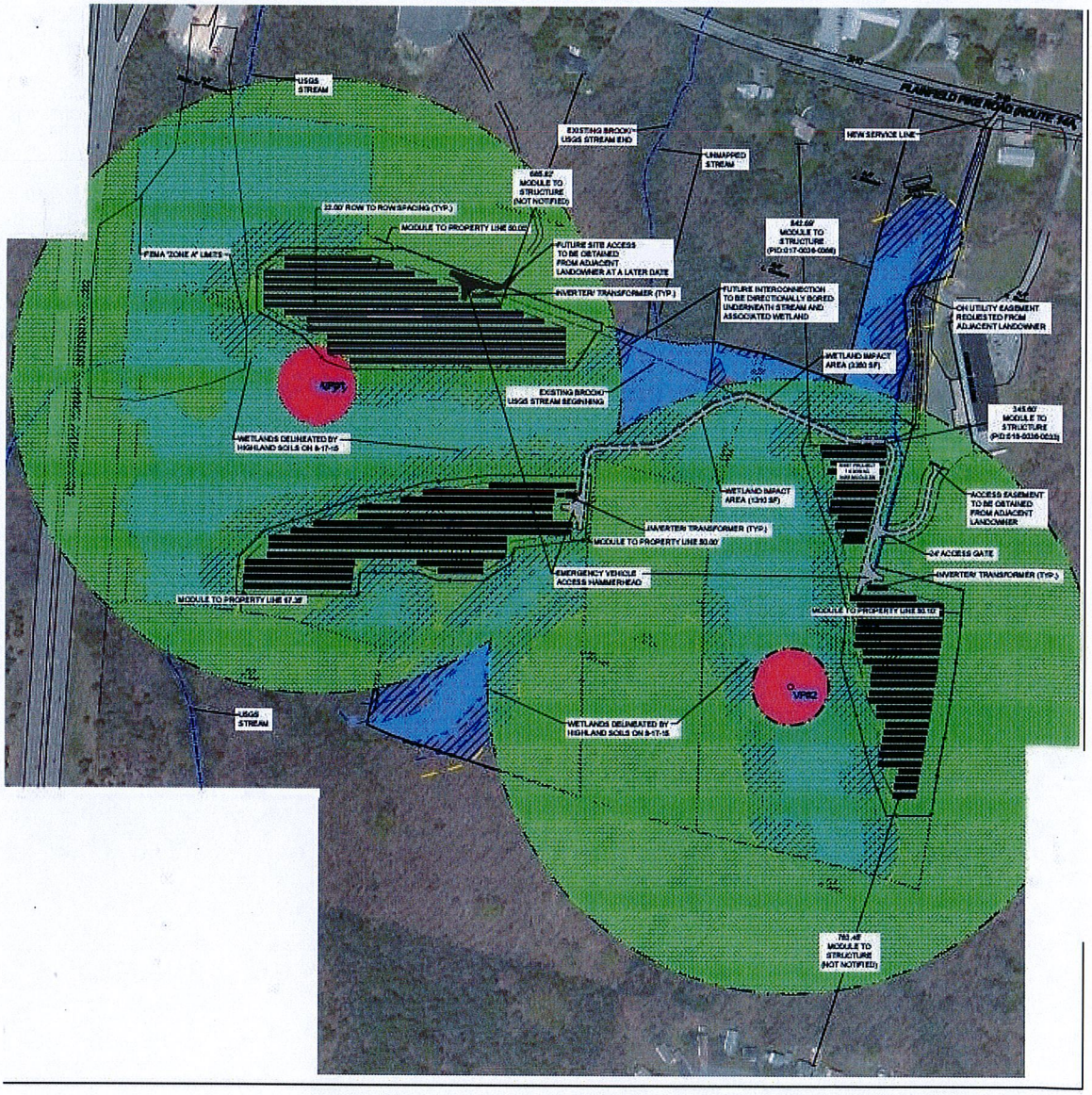
Original Site Plan



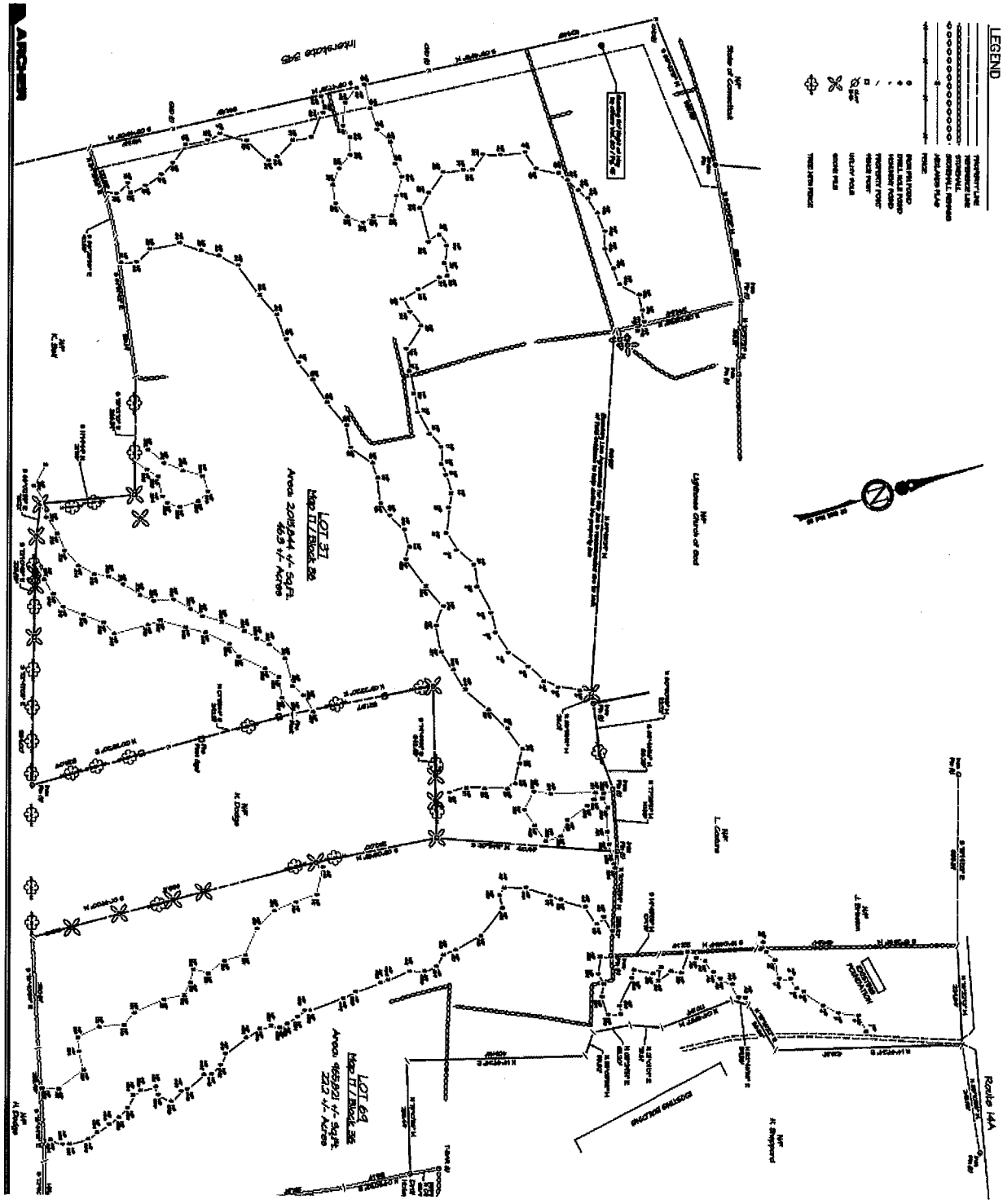
Revised/Updated Site Plan



Vernal Pool Map



Site Survey with Wetland Flags



Analysis of Agricultural Land Values

Project #	Soil Type	Designation	Impact Area (AC)	% Project Footprint
P1 & P2	7	Farmland of statewide importance	3.07	25.6%
P1 & P2	3	Not prime farmland	2.75	23.0%
P1 & P2	38C	Farmland of statewide importance	6.03	50.4%
P1 & P2	62C	Not prime farmland	0.12	1.0%
F1	23A	Prime Farmland	0.86	15.4%
F1	62C	Not prime farmland	1.73	30.9%
F1	61B	Not prime farmland	2.99	53.5%
F1	3	Not prime farmland	0.01	0.2%