DOCKET NO. 492 - Gravel Pit Solar application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 120-megawatt-AC solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection.	}	Connecticut
	}	Siting
	}	Council
		February 25, 2021

Findings of Fact

Introduction

1. Gravel Pit Solar, LLC, Gravel Pit Solar II, LLC, Gravel Pit Solar III, LLC, and Gravel Pit Solar IV, LLC (collectively, GPS or Applicant), in accordance with the provisions of Connecticut General Statutes (C.G.S.) §16-50g et seq., applied to the Connecticut Siting Council (Council) on July 31, 2020 for a Certificate of Environmental Compatibility and Public Need (Certificate) for the construction, maintenance, and operation of a 120-megawatt-AC solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut. (Applicant 1, p. 1)

2. Gravel Pit Solar, LLC, Gravel Pit Solar II, LLC, Gravel Pit Solar III, LLC, and Gravel Pit Solar IV, LLC are affiliates of D.E. Shaw Renewable Investments, LLC (DESRI) and are Delaware limited liability companies headquartered at 1166 Avenue of the Americas, 9th Floor, New York, New York. (Applicant 1, p. 3)

3. DESRI, through its affiliates, is a developer, owner, and operator of renewable energy projects in North America, including two commercial solar projects in Connecticut: 26.4 MW Tobacco Valley Solar in Simsbury and 20 MW Fusion Solar in Sprague. (Applicant 1, p. 1; Transcript 1, November 12, 2020, 2:00 p.m. [Tr. 1], p. 95; Council Administrative Notice Item No. 48)

4. The party in this proceeding is the Applicant. (Tr. 1, pp. 5-6)

5. The purpose of the proposed project is to provide a new source of renewable energy to help meet Connecticut's and the greater New England region's emission reduction goals. (Applicant 1, p. 6)

6. The proposed project would generate renewable electrical energy from solar power. Solar power is considered a Class I renewable energy source. (Applicant 1, pp. 17-18; CGS § 16-1(a)(20))

7. GPS would sell power to electric distribution companies in Connecticut pursuant to its selection under the Connecticut Department of Energy and Environmental Protection's (DEEP) Zero Carbon Request for Proposals (RFP). GPS would also sell power to electric distribution companies in Rhode Island pursuant to Rhode Island's Long-Term Contracting Standard RFP. The balance of the project's capacity would provide energy to a number of New England municipal light departments. (Applicant 1, pp. 5-6; Applicant 10, Late Filed Exhibit d)

8. The State legislature established a renewable energy policy under CGS §16a-35k that encourages the development of renewable energy facilities to the maximum extent possible within the State of Connecticut. (CGS § 16a-35k)

9. Pursuant to C.G.S. § 16-50*l* (b), public notice of the filing of the application to the Council was published in the The Hartford Courant on September 4, 2020. (Applicant 3)

10. Pursuant to C.G.S. § 16-50*l* (b), notice of the application was provided to all abutting property owners. Certified mail receipts or confirmation of UPS delivery from all abutting property owners were received except for Eversource and Worldwide Properties LLC. GPS has been in contact with these two abutters in the past regarding the project, and both have been made aware of the proposed development. GPS also sent project informational postcards to each abutter on July 20, 2020. (Applicant 1, Tab D – Abutter Notification; Applicant 6, response 1)

11. On July 21, 2020, GPS provided notice to all federal, state and local officials and agencies listed in C.G.S. § 16-50*l* (b). (Applicant 1, Tab E – Certification of Service to Government Entities)

Procedural Matters

12. On March 10, 2020, Governor Lamont issued a Declaration of Public Health and Civil Preparedness Emergencies, proclaiming a state of emergency throughout the state as a result of the COVID-19 pandemic. (Council Administrative Notice Item No. 73)

13. On March 12, 2020, Governor Lamont issued Executive Order No. (EO) 7 ordering a prohibition of large gatherings, among other orders and directives. (Council Administrative Notice Item No. 73)

14. On March 14, 2020 and as subsequently extended, Governor Lamont issued EO 7B ordering suspension of in-person open meeting requirements of all public agencies under CGS §1-225. The Freedom of Information Act defines "meeting" in relevant part as "any hearing or other proceeding of a public agency." (Council Administrative Notice Item No. 73, CGS §1-200, *et seq*. (2019))

15. EO 7B allows public agencies to hold remote meetings provided that:

    a) The public has the ability to view or listen to each meeting or proceeding in real-time, by telephone, video, or other technology;
    b) Any such meeting or proceeding is recorded or transcribed and such recording or transcript shall be posted on the agency's website within seven (7) days of the meeting or proceeding;
    c) The required notice and agenda for each meeting or proceeding is posted on the agency's website and shall include information on how the meeting will be conducted and how the public can access it;
    d) Any materials relevant to matters on the agenda shall be submitted to the agency and posted on the agency's website for public inspection prior to, during and after the meeting; and
    e) All speakers taking part in any such meeting shall clearly state their name and title before speaking on each occasion they speak.

    (Council Administrative Notice Item No. 73)

16. On March 25, 2020 and as subsequently extended, Governor Lamont issued EO 7M allowing for an extension of all statutory and regulatory deadlines of administrative agencies for a period of no longer than 90 days. (Record; Council Administrative Notice Item No. 73)

17. On August 13, 2020, the Council sent a letter to the State Treasurer, with a copy to the Chief Elected Officials of the Towns of East Windsor and South Windsor (Towns) stating that $25,000 was received from GPS and deposited in the Office of State Treasurer's Municipal Participation Account for use by the Towns to apply for a portion of the funds if they become a participant in the proceeding, pursuant to CGS §16-50bb. (Record)

18. During a regular Council meeting on September 24, 2020, the application was deemed complete pursuant to R.C.S.A. § 16-50*l*-1a and EO 7M, and the public hearing schedule was approved by the Council pursuant to EO 7B. (Record)

19. Pursuant to Governor Lamont's EO 7B and C.G.S. § 16-50m, the Council published legal notice of the date and time of the remote public hearing via Zoom conferencing in the Journal Inquirer on September 30, 2020. (Record)

20. Pursuant to Governor Lamont's EO 7B and C.G.S. § 16-50m, on September 29, 2020, the Council sent a letter to the Towns* to provide notification of the scheduled remote public hearing via Zoom conferencing and to invite the Towns to participate.

    *The Town of South Windsor is located within 2,500 feet of the proposed facility.

    (Record; Applicant 1, p. 19)

21. In compliance with Governor Lamont's EO 7 prohibition of large gatherings, the Council's Hearing Notice did not refer to a public field review of the proposed site. (Council's Hearing Notice dated September 29, 2020)

22. Field reviews are not an integral part of the public hearing process. The purpose of a site visit is an investigative tool to acquaint members of a reviewing commission with the subject property. (Council Administrative Notice Item Nos. 74 and 75)

23. On October 7, 2020, in lieu of an in-person field review of the proposed site, the Council requested that GPS submit photographic documentation of site-specific features into the record intended to serve as a "virtual" field review of the site. On October 28, 2020, GPS submitted such information in response to the Council's interrogatories. (Record; Applicant 6, response 61)

24. On September 25, 2020, the Council held a pre-hearing teleconference on procedural matters for parties and intervenors to discuss the requirements for pre-filed testimony, exhibit lists, administrative notice lists, expected witness lists, and filing of pre-hearing interrogatories. Procedures for the remote public hearing via Zoom conferencing were also discussed. (Council Pre-Hearing Conference Memoranda, dated September 25, 2020 and September 30, 2020)

25. In compliance with R.C.S.A. § 16-50j-21, GPS installed two four-foot by six-foot signs at the subject property on October 27, 2020. One sign was installed at a proposed northern access entrance off of Apothecaries Hall Road, and one sign was installed along the northern side of Plantation Road near another proposed access entrance. The signs presented information regarding the project and the Council's public hearing. (Tr. 1, pp. 28-29; Applicant 1, Tab A, Project Layout Map)

26. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a remote public hearing on November 12, 2020, beginning with the evidentiary session at 2:00 p.m. and continuing with the public comment session at 6:30 p.m. via Zoom conferencing. The Council provided access information for video/computer access or audio only telephone access. (Council's Hearing Notice dated September 29, 2020; Tr. 1, p. 1; Transcript 2 – 6:30 p.m. [Tr. 2], p. 137)

27. In compliance with Governor Lamont's EO 7B:

    a) The public had the ability to view and listen to the remote public hearing in real-time, by computer, smartphone, tablet or telephone;
    b) The remote public hearing was recorded and transcribed, and such recording and transcript were posted on the Council's website on November 13, 2020, November 18, 2020, December 2, 2020 and December 8, 2020, respectively;
    c) The Hearing Notice, Hearing Program, Citizens Guide for Siting Council Procedures and Instructions for Public Access to the Remote Hearing were posted on the agency's website;
    d) The record of the proceeding is available on the Council's website for public inspection prior to, during and after the remote public hearing; and
    e) The Council, parties and intervenors provided their information for identification purposes during the remote public hearing.

    (Hearing Notice dated September 29, 2020; Tr. 1; Tr. 2; Record)

28. The Council continued the remote evidentiary hearing session via Zoom conferencing on December 1, 2020. (Council Memorandum Regarding Motion and Continuation of Evidentiary Hearing Session dated November 13, 2020; Transcript 3 – 2:00 p.m. [Tr. 3], p. 156)

Municipal Consultation

29. On August 20, 2019, GPS held a telephone conference with the Town of East Windsor Director of Planning and Development to introduce the proposed project concept and location. (Applicant 1, p. 19)

30. On December 9, 2019, GPS held a meeting at the East Windsor Town Hall with First Selectman Jason Bowsza and other town officials regarding permitting, community relations and a general schedule for the project. (Applicant 1, p. 20)

31. GPS held additional meetings and telephone conferences with Town of East Windsor officials on December 23, 2019; December 27, 2019; January 7, 2020; January 23, 2020; March 5, 2020; April 23, 2020; June 9, 2020; and June 15, 2020. (Applicant 1, p. 22)

32. On June 5, 2020, the Town of East Windsor Planning and Development Department provided comments on the proposed project. On June 8, 2020, the East Windsor Department of Engineering and Public Works provided comments and recommendations regarding the proposed project. GPS also received feedback and answered questions from the Town of East Windsor Planning and Zoning Commission. (Applicant 1, p. 22)

33. The Town of South Windsor did not provide any comments on the proposed project. (Applicant 1, pp. 22-23; Tr. 1, p. 30)

34. GPS established a project website (www.gravelpitsolar.com) in May 2020. GPS held a virtual "open house" in late July 2020. (Applicant 1, p. 23)

35. On June 5, 2020, the Town Planning & Development Department provided written comments including, but not limited to, a request for landscaping plans; consideration of taller fencing; and inclusion of a description of the how the access drives would be maintained in the event of the need for emergency access during a snow event. (Applicant 1, Tab F)

36. On June 8, 2020, the Town Engineering & Public Works provided written comments including, but not limited to, concurrence on the plans for the Ketch Brook collector line crossing; a request for a copy of the stormwater report; consideration of taller fence; and Fire Marshal review of the access drives for their use for emergency vehicles. (Applicant 1, Tab F)

37. GPS notes that it has accommodated the recommendations of the Town of East Windsor to the extent practicable. (Applicant 1, p. 23)

38. In written correspondence dated November 12, 2020 and at the Council's public comment session on the same date, First Selectman Bowsza gave a limited appearance statement in support of the proposed project noting that its development would resolve a long standing nuisance issue at the existing site; little impact is expected on abutting property owners; the project would not burden municipal services; and GPS has been cooperative and communicative with the Town throughout the process. (Tr. 2, pp. 147-150)

39. C.G.S. § 22a-20a and DEEP's Environmental Justice Guidelines require applicants seeking a permit from DEEP or the Council for a new or expanded facility defined as an "affecting facility" that is proposed to be located in an environmental justice community to file an Environmental Justice Public Participation Plan (EJPPP). The proposed solar facility is not an "affecting facility" under CGS § 22a-20a because it uses non-emitting and non-polluting renewable sources. Thus, Environmental Justice does not apply to the facility, and an EJPPP is not required. (Applicant 1, p. 68; Council Administrative Notice Item No. 47 – Petition No. 1310A, Finding of Fact #38; CGS § 22a-20a)

State Agency Comments

40. Pursuant to C.G.S. § 16-50j (g), on September 29, 2020, the following state agencies were solicited by the Council to submit written comments regarding the proposed facility: DEEP; Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Agriculture (DOAg); Department of Transportation (DOT); Connecticut Airport Authority (CAA); Department of Emergency Services and Public Protection (DESPP); Department of Consumer Protection (DCP); Department of Labor (DOL); Department of Administrative Services (DAS); and State Historic Preservation Office (SHPO). (Record)

41. On October 2, 2020, the Council received comments from CEQ, which are attached hereto. (CEQ Comments received October 2, 2020)

42. On October 16, 2020, the Council received comments from DOT, which are attached hereto. (DOT Comments received October 16, 2020)

43. On November 2, 2020, the Council received comments from DEEP, which are attached hereto. (DEEP Comments received November 2, 2020)

44. On November 4, 2020, the Council received comments from DOAg, which are attached hereto. (DOAg Comments received October 4, 2020)

45. While the Council is obligated to consult with and solicit comments from state agencies by statute, the Council is not required to abide by the comments from state agencies. (Council Administrative Notice Item No. 78 – *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

46. The following agencies did not respond to the Council's request for comment on the proposed facility: DPH, PURA, OPM, DECD, CAA, DESPP, DCP, DOL, DAS, and SHPO. (Record)

State of Connecticut Planning and Energy Policy

47. Section 51 of Public Act (PA) 11-80 requires that DEEP prepare a Comprehensive Energy Strategy (CES) every three years that reflects the legislative findings and policy stated in CGS §16a-35k. As such, this statute consolidated Connecticut's energy planning for the first time. The final version of the state's inaugural CES was published on February 19, 2013 (2013 CES). It advocated smaller, more diversified generation projects using renewable fuels, as well as smaller, more innovative transmission projects emphasizing reliability. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #57; CGS §16a-3d)

48. On February 8, 2018, DEEP issued the 2018 Comprehensive Energy Strategy (2018 CES). Guided by the long-term vision of transitioning to a zero-carbon economy, the 2018 CES highlights eight key strategies to guide administrative and legislative action over the next several years. Specifically, strategy No. 3 is "Grow and sustain renewable and zero-carbon generation in the state and region." (Council Administrative Notice Item No. 54 – 2018 CES, p. 14)

49. The proposed facility will contribute to fulfilling the State's Renewable Portfolio Standard and Global Warming Solutions Act as a zero emission Class I renewable energy source. (Council Administrative Notice Item No. 54 – 2018 CES)

50. CGS §16-245a establishes Connecticut's *Renewable Portfolio Standards* (*RPS*). Currently, RPS requires that 24 percent of Connecticut's electricity usage be obtained from Class I renewable resources by 2022. The percentage increases annually and reaches 40 percent by 2030. (CGS §16-245a; Applicant 1, p. 6)

51. The 2018 CES notes that, "Most recent analyses indicate that there should be adequate Class I resources to meet Connecticut's Class I Renewable Portfolio Standards (RPS) goals in 2020*."
*This was based on the "20 percent Class I by 2020" requirement that was in place at the time the 2018 CES was prepared.
(Council Administrative Notice Item No. 54 – 2018 CES, p. 112)

52. The Global Warming Solutions Act (PA 08-98) sets a goal of reducing greenhouse gas (GHG) emissions by 80 percent below 2001 levels by 2050. (CGS §22a-200; Applicant 1, p. 6)

53. Section 7 of PA 08-98 required the Governor's Steering Committee on Climate Change to establish an Adaptation Subcommittee to evaluate the projected impacts of climate change on Connecticut agriculture, infrastructure, natural resources and public health and develop strategies to mitigate these impacts. (Council Administrative Notice Item No. 67 – Climate Change Preparedness Plan)

54. Governor Lamont's 2019 Executive Order No. 3 declares the state's goal to reach 100 percent carbon free electricity by 2040. (Governor Lamont's Executive Order No. 3, September 3, 2019; Applicant 1, p. 6)

Competitive Energy Procurement

55. In 2018, 20 MW of the proposed project was bid into DEEP's Zero Carbon Request for Proposals (RFP) and was selected to provide renewable energy to Connecticut utilities. (Applicant 1, pp. 5-6; Applicant 10, Late Filed Exhibit d)

56. In 2019, 50 MW of the proposed project was selected under Rhode Island's Long-Term Contracting Standard RFP. (Applicant 1, pp. 5-6; Tr. 1, p. 33)

57. The balance of the project's capacity would provide energy to a number of New England municipal light departments. (Applicant 1, pp. 5-6; Applicant 10, Late Filed Exhibit d)

58. A renewable energy certificate (REC) certifies that one megawatt-hour (MWh) of renewable electrical energy has been generated. RECs create a market to separate renewable energy attributes and resource output. Environmental attributes are sold into the REC markets. (Council Administrative Notice Item No. 46 – Petition No. 1310A, Finding of Fact # 61)

Power Purchase Agreements

59. GPS has power purchase agreements (PPAs) to sell the electricity that would be generated by the proposed project to various utilities. The percentages of the electricity to be sold to each utility and regulatory approval of PPAs, as applicable, are listed below.

Offtaker/Buyer	Amount (MW)	Percentage of Facility	Selection	Regulatory Approval[1]
The Connecticut Light and Power Company d/b/aEversource Energy	16.076	13.40%	Dec. 28, 2018	Nov. 27, 2019
The United Illuminating Company	3.924	3.27%	Dec. 28, 2018	Nov. 27, 2019
The Narragansett Electric Company, d/b/a NationalGrid	49.5	41.25%	Jul. 26, 2019	May 28, 2020
Block Island Utility District d/b/a Block Island Power Company[2]	0.4	0.33%	Jul. 26, 2019	N/A
Pascoag Utility District[2]	0.1	0.08%	Jul. 26, 2019	N/A
Belmont Municipal Light Department	1.415	1.18%	Jun. 26, 2020	N/A
Block Island Utility District d/b/a Block Island Power Company	0.15	0.13%	Jun. 26, 2020	N/A
Braintree Electric Light Department	4.07	3.39%	Jun. 26, 2020	N/A
Town of Concord, Massachusetts, acting through its Concord Municipal Light Plant	1.85	1.54%	Jun. 26, 2020	N/A
Town of Danvers Electric Division	3.32	2.77%	Jun. 26, 2020	N/A
Georgetown Municipal Light Department	0.55	0.46%	Jun. 26, 2020	N/A
Hingham Municipal Light Plant	2.215	1.85%	Jun. 26, 2020	N/A
Littleton Electric Light and Water Department	3.12	2.60%	Jun. 26, 2020	N/A
Merrimac Municipal Light Department	0.325	0.27%	Jun. 26, 2020	N/A
Middleborough Gas and Electric Department	3.11	2.59%	Jun. 26, 2020	N/A
Middleton Municipal Electric Department	1.085	0.90%	Jun. 26, 2020	N/A
North Attleborough Electric Department	2.5	2.08%	Jun. 26, 2020	N/A
Norwood Municipal Light Department	3.555	2.96%	Jun. 26, 2020	N/A
Pascoag Utility District	0.67	0.56%	Jun. 26, 2020	N/A
Reading Municipal Light Department	7.505	6.25%	Jun. 26, 2020	N/A
Rowley Municipal Light Plant	0.49	0.41%	Jun. 26, 2020	N/A
Taunton Municipal Light Plant	7.37	6.14%	Jun. 26, 2020	N/A
Wellesley Municipal Light Plant	2.68	2.23%	Jun. 26, 2020	N/A
Westfield Gas and Electric Light Department	4.02	3.35%	Jun. 26, 2020	N/A
Total	120	100.00%		

[1] Municipal light department power purchase agreements entered into outside of state run RFP processes did not require regualtory approval

[2] Block Island Utility District and Pascoag Utility District have entered into two separate sets of power purchase agreements for the project, once as part of the Rhode Island Long-term Contracting RFP and again under a separate procurement process.

Italics indicates date of power purchase agreement execution.

(Applicant 10, Late Filed Exhibit d)

60. GPS would sell both energy and RECs to off-takers. GPS also intends to participate in the ISO New England, Inc. (ISO-NE) Forward Capacity Market (FCM) in order to sell capacity. (Applicant 6, responses 4 and 16; Late Filed Exhibit d; Tr. 1, pp. 34-35)

61. On November 27, 2019, in PURA Docket No. 18-05-04, PURA approved the PPAs between GPS and the Connecticut electrical distribution companies Eversource and UI. (Applicant 1, p. 8; Tr. 2, pp. 238-241)

62. On May 28, 2020, the Rhode Island Public Utilities Commission approved GPS' PPAs associated with the Rhode Island's Long-Term Contracting Standard RFP. (Applicant 10, Late Filed Exhibit d)

Public Benefit

63. Pursuant to CGS §16-50p(c), a public benefit exists when a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity. Public benefit exists if the Council finds and determines a proposed electric generating facility contributes to forecasted generating capacity requirements, reduces dependence on imported energy resources, diversifies state energy supply mix and enhances reliability. (CGS §16-50p(c); *Preston v. Connecticut Siting Council*, 20 Conn. App. 474 (1990); *Preston v. Connecticut Siting Council*, 21 Conn. App. 85 (1990); Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #42)

64. Pursuant to Public Act 98-28, An Act Concerning Electric Restructuring, generators of electricity may compete with each other for the development of electric generation. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #41)

65. Created by the Federal Energy Regulatory Commission (FERC) in 1997, ISO-NE is the independent, not-for-profit corporation responsible for the reliable operation of New England's electric power generation and transmission system, overseeing and ensuring the fair administration of the region's wholesale electricity markets, and managing comprehensive regional electric power planning. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #45)

66. ISO-NE operates the power system and the competitive wholesale electric markets so that the lowest cost resources are used first to meet consumer demand. However, ISO-NE's primary responsibility is electric reliability. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #46)

67. ISO-NE is fuel and technology neutral and takes no position on any proposed energy projects. ISO-NE does not own any transmission or distribution lines or power plants. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #47)

68. The New England region operates a power pool and is interconnected with other power pools associated with New York and the Canadian provinces of Québec and New Brunswick. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #48)

Resource Adequacy

69. ISO-NE holds an annual auction to acquire the power system resources needed to meet projected demand for the New England region in three years' time. The annual FCM Auction (FCA) is held approximately three years before each capacity commitment period to provide time for new resources to be developed. Capacity resources can include traditional power plants, renewable generation, imports, and demand-side resources, such as load management and energy efficiency measures. Resources clearing in the auction will receive a monthly payment during the delivery

year in exchange for their commitment to provide power or curtail demand when called on by ISO-NE. (Council Administrative Notice Item No. 38 – ISO-NE FCA#13 Press Release dated February 28, 2019; Council Administrative Notice Item No. 40 – ISO-NE FCA #14 Press Release dated February 18, 2020)

70. According to ISO-NE's 2019 Regional System Plan (2019 RSP), "Sufficient resources are projected for New England through 2028 to meet the resource adequacy planning criterion, assuming no additional retirements and the successful completion of all new resources that have cleared the FCM. The planning analysis accounts for new resource additions that have responded to market improvements, state policies, and resource retirements. The ISO is committed to procuring adequate demand and supply resources through the FCM and expects the region to install adequate resources to meet the physical capacity needs that the [Installed Capacity Requirements] (ICRs) will define for future years." (Council Administrative Notice Item No. 23 – 2019 RSP, p. 76)

Net Load Forecasts

71. In this context, ISO-NE Net Load Forecast means ISO-NE's gross 50/50 forecast minus behind the meter solar PV and minus energy efficiency effects. (Council Administrative Notice Item No. 26 – 2020 CELT Report, Section 1.1 – Forecast and Capabilities with Footnotes)

72. The ISO-NE 2020 Net Load Forecast (2020 Net Forecast) has a compound annual growth rate (CAGR) of -0.16 percent based on 25,125 MW for 2020 and 24,755 MW for 2029. (Council Administrative Notice Item No. 26 – 2020 CELT Report, Section 1.1 – Forecast and Capabilities)

73. ISO-NE's 2020-2029 Forecast Report of Capacity, Energy, Loads and Transmission (2020 CELT Report) table is listed below.

Forecast and Capabilities	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
1. Load [1, 2, 3]											
1.1 Gross (without reductions) [4]	29,018	29,224	29,461	29,717	29,977	30,241	30,504	30,768	31,034	31,297	31,550
1.1.1 Behind-the-meter PV [5]	705	787	827	874	894	938	970	997	1,021	1,044	1,062
1.2 Net (with reductions for BTM PV)	28,313	28,438	28,634	28,844	29,083	29,303	29,534	29,770	30,013	30,253	30,489
1.2.1 Energy efficiency[6]	2,913	3,312	3,653	3,983	4,300	4,600	4,877	5,130	5,357	5,559	5,733
1.3 Net (with reductions for BTM PV and EE) [7]	**25,401**	**25,125**	**24,981**	**24,861**	**24,783**	**24,703**	**24,657**	**24,640**	**24,656**	**24,694**	**24,755**
2. Capacity based on FCM obligations											
2.1 Generating resources[8]	30,880	30,369	30,051	29,597	28,978	28,978	28,978	28,978	28,978	28,978	28,978
2.2 Demand resources[8,9]	3,088	3,549	3,700	4,022	3,919	3,919	3,919	3,919	3,919	3,919	3,919
2.2.1 Active DR	494	584	654	681	592	592	592	592	592	592	592
2.2.2 Passive DR[10]	2,594	2,965	3,045	3,341	3,327	3,327	3,327	3,327	3,327	3,327	3,327
2.2.2.1 Energy Efficiency	2,410	2,626	2,795	3,040	3,015	3,015	3,015	3,015	3,015	3,015	3,015
2.2.2.2 Distributed Generation	128	165	138	257	265	265	265	265	265	265	265
2.3 Imports[11]	1,428	1,125	1,305	1,188	1,059	82	14	14	14	14	14
2.4 Total *[= 2.1 + 2.2 + 2.3]*	**35,396**	**35,042**	**35,056**	**34,807**	**33,956**	**32,979**	**32,911**	**32,911**	**32,911**	**32,911**	**32,911**
3. Capacity based on seasonal claimed capability[12, 13]											
3.1 Generation claimed for capability	31,337	31,531	31,259	31,407	31,554	31,755	31,788	31,808	31,825	31,843	31,860
4. Reserves (based on Reference Load with reduction for passive DR)											
4.1 Installed reserves (based on CSOs of generating resources [line 2.1], active DR [line 2.2.1], and imports [line 2.3])											
4.1.1 MW *[= 2.1 + 2.2.1 + 2.3 - 1.3]*	7,401	6,952	7,030	6,605	5,846	4,949	4,927	4,943	4,928	4,890	4,828
4.1.2 % of load *[= (4.1.1 / 1.3) x 100]*	29	28	28	27	24	20	20	20	20	20	20
4.2 Installed reserves (based on generation SCC [line 3.1], active DR [line 2.2.1], imports [line 2.3], and exports[14]											
4.2.1 MW *[= (3.1 + 2.2.1 + 2.3) – 1.3]*	7,758	8,015	8,238	8,414	8,422	7,726	7,736	7,773	7,775	7,756	7,711
4.2.2 % of load *[= (4.2.1 / 1.3) x 100)]*	31	32	33	34	34	31	31	32	32	31	31

1. Load levels represent the megawatts associated with a 50/50 gross peak demand forecast, which is a value within the distribution that peak demand is expected to exceed 50% of the time.
2. All forecast values reflect the forecasted impacts of electrification of the heating and transportation sectors.
3. The 2019 summer peak load shown reflects weather normalization. Before weather normalization, the actual net 2019 summer peak of 24,361 MW occurred on July 30, 2019 at hour ending (HE) 18:00 (6:00 p.m.). The 2019 gross annual peak (i.e., reconstituted for demand reductions from the load reducing action of energy efficiency (EE), behind-the-meter photovoltaics (BTM PV), and active demand capacity resources) of 28,687 MW occurred on July 30, 2019 at HE 15:00 (3:00 p.m.). See Section 1.5 for actual and forecast peaks and energy.
4. The "gross" load forecast is from a probabilistic distribution of forecast peak loads without reductions from EE and BTM PV. It represents the 50/50 peak demand forecast, which is a value within the distribution that peak demand has a 50% probability of exceeding in any summer period.
5. Line 1.1.1 consists of BTM PV estimated summer peak load reductions as of July 1 of that year, which include an 8% transmission and distribution loss gross up. Refer to Section 3.2 for more details on these values.
6. The EE values shown on line 1.2.1 are from the 2020 EE forecast. The 2019 and 2020 values are the summer qualified capacity (QC) for the third annual reconfiguration auction (ARA 3) for the capacity commitment periods (CCP) beginning June 1 of each of those years. Values for the remaining years are forecast values. For transmission planning studies, the use of EE forecast values may vary by the type of study and load level being evaluated. See the Transmission Planning Technical Guide, Appendix J, Load Modeling Guide for ISO New England Network Model:
7. The "net" load forecasts are developed by subtracting forecasts of BTM PV and EE from the 50/50 gross peak load forecasts.
8. The 2020 through 2023 capacity supply obligations (CSOs) for generating resources and demand capacity resources (DCRs) consist of the current Forward Capacity Market CSOs as of March 31, 2020, and the 2019 CSOs are based on the 2019-2020 ARA 3 results. The 2023 CSO is assumed to remain in place through the end of the CELT reporting period (2029). The Citizens Block Load CSO is treated as an import rather than a generating resource for periods before its permanent delist, effective June 1, 2022.
9. The DCR values are based on DCRs with CSOs, which include an 8% transmission and distribution loss gross-up.
10. The Passive DR total also includes passive demand capacity resources with different measure types across project increments. Therefore, Energy Efficiency and Distributed Generation MW values will not sum to the Passive DR total.
11. The 2019 through 2023 imports are based on FCM import CSOs. The imports beyond the 2023 CCP reflect only known, long-term, firm contracts.
12. The generating capability based on seasonal claimed capability (SCC) values includes all existing ISO New England generating assets as well as projected additions and retirements. Future generating assets consist of non-FCM resources expected to go commercial in 2020 or 2021 and all new resources with FCM CSOs. The capabilities of the FCM resources are based on their summer qualified capacity. Also included is a forecast of non-FCM PV capacity, which is based on an average of the known PV SCC values divided by the average of their nameplate. The result is that non-FCM PV capacity is estimated as 34% of their nameplate.
13. The 2020 summer SCC value of 31,531 MW is consistent with the total capacity projected for July 1 in the Section 2.1 Generator List.
14. The generation capability values from 2019 through 2020 account for a 100 MW administrative export delist.

(Council Administrative Notice Item No. 26 – 2020 CELT Report, Section 1.1)

Generating Capacity Retirements in New England

74. The following generating resources have been identified by ISO-NE as retired or slated to retire in the near future:

Power Plant	**Fuel**	**Summer Capacity**	**Status**
Vermont Yankee	Nuclear	604 MW	Retired
Mount Tom	Coal	143 MW	Retired
Salem Harbor	Coal and Oil	749 MW	Retired
Pilgrim	Nuclear	677 MW	Retired
Brayton Point	Coal and Oil	1,535 MW	Retired
Norwalk Harbor	Oil	342 MW	Retired
Bridgeport Harbor No. 3	Coal	383 MW	To be retired in 2021
Mystic No. 7	Oil/Gas	573 MW	Retired
Total		**5,006 MW**	

(Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #68; Council Administrative Notice Item No. 23 – 2019 RSP, pp. 10, 116; Council Administrative Notice Item No. 27 – ISO-NE 2019 Regional Electricity Outlook, p. 18)

75. The following generating resources are considered at "at risk for retirement" by ISO-NE in coming years. These "at risk" power plants are listed below.

Power Plant	Fuel	Summer Capacity
Yarmouth Nos. 1-4	Oil	808 MW
Merrimack No. 1-2	Coal	438 MW
Newington No. 1	Oil/Natural Gas	400 MW
Schiller Nos. 4&6	Coal	95 MW
Canal Nos. 1&2*	Oil	1,125 MW
West Springfield No. 3**	Natural Gas/Oil	94 MW
Middletown Nos. 2-4***	Oil/Natural Gas	744 MW
Montville Nos. 5-6****	Oil/Natural Gas	480 MW
New Haven Harbor*****	Oil/Natural Gas	347 MW
Total		**4,531 MW**

*Canal No. 1 is oil-fired only. Canal No. 2 is oil/natural gas.
**While primarily fueled by natural gas, this is a steam turbine unit.
***Middletown No. 4 is oil-fired only. Middletown Nos. 2 and 3 are oil/natural gas.
****Montville No. 5 is oil/natural gas. Montville No. 6 is oil-fired only.
*****This is the steam unit. It doesn't have a unit number. Also, listed is the summer MW rating.
(Council Administrative Notice Item No. 27 – ISO-NE 2019 Regional Electricity Outlook, p. 18; Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #69)

76. The 2019 ISO-NE Regional Electricity Outlooks identify several new large electric generation projects that were all slated to be online no later than 2020.

Power Plant	Fuel	FCA-cleared Capacity
Towantic	Natural Gas/Oil	750 MW
Footprint	Natural Gas	674 MW
Bridgeport Harbor No. 5	Natural Gas/Oil	484 MW
Canal No. 3	Natural Gas/Oil	333 MW
Medway	Natural Gas/Oil	195 MW
Wallingford No. 6 and 7	Natural Gas	90 MW
Total		**2,526 MW**

(Council Administrative Notice Item No. 27 – ISO-NE 2019 Regional Electricity Outlook, p. 18; Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #71)

New England Reliability

77. New England's electric power grid is planned and operated as a unified system of transmission owners and market participants. The New England system integrates resources with the transmission system to serve all regional load regardless of state boundaries. Most of the transmission lines are relatively short and networked as a grid. The electrical performance in one part of the system affects all areas of the system. Thus, Connecticut and the rest of the ISO-NE

region are inextricably interconnected and rely on each other for a reliable electricity system. (Council Administrative Notice Item No. 23 – 2019 RSP, p. 27; Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 72)

78. In addition to ISO-NE's winter energy concerns, system reliability is comprised of two aspects: resource adequacy and transmission security. Resource adequacy means having sufficient resources to meet load at all times. Transmission security means having a system than can withstand contingencies such as the loss of a transmission line, or successive losses of multiple transmission lines, or the loss of a major generating plant, during a time of high system load. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 73)

79. ICR is a measure of the installed resources that are projected to be necessary to meet both ISO-NE's and the Northeast Power Coordinating Council's (NPCC) reliability standards, with respect to satisfying the peak load forecast for the New England Balancing Authority while maintaining required reserve capacity. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 76)

80. Net ICR (NICR) is the installed capacity requirement for New England net of capacity credits from the Hydro Quebec interconnection and is lower than ICR. Either of these two metrics, ICR or NICR, can be considered the reliability need for capacity resources in New England. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 77)

81. ISO-NE computes and annually updates NICR for the New England Region. There is no separate NICR for Connecticut. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 78)

ISO-NE's FCA

82. While NICR is a reliability "target" for New England, the FCA rules allow the New England region to acquire more or less capacity (in MW) than NICR. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 79)

83. Capacity resources that clear the auction receive a Capacity Supply Obligation (CSO). A CSO requires the capacity resource to bid into the day-ahead energy market during the 12-month Capacity Commitment Period (CCP), which begins roughly three years after the auction is held. For example, for the fourteenth FCA (FCA #14), resources that cleared in February 2020 are committed to the June 1, 2023 through May 31, 2024 CCP. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 80; Council Administrative Notice Item No. 40 – ISO-NE FCA #14 Press Release dated February 18, 2020)

Solar Facility Benefit

GPS' FCA Participation

84. GPS submitted an application to ISO-NE to qualify for participation in FCA#15. The prequalification process typically includes ISO-NE review of the status of the project in terms of its permitting, interconnection and development. (Applicant 6, response 4; Tr. 1, pp. 34-35)

85. For solar resource capacity, ISO-NE counts a percentage of a project's nameplate capacity (i.e. the MW it should produce under optimal conditions) and its measurable day-to-day performance, which can differ significantly due to the weather-dependent nature of solar resources. Additionally, the solar peak and the grid/system peaks are not necessarily coincident. For example, the summer solar peak could occur roughly in the 12:00 p.m. to 1:00 p.m. time period while the summer peak hours for the grid for reliability purposes is roughly in the 2:00 p.m. to 6:00 p.m. time period. (Council Administrative Notice Item No. 46 – Petition No. 1310A, Finding of Fact # 57)

86. For solar facilities that bid into FCA, ISO-NE typically considers roughly 40 percent of the nameplate capacity during the summer months and significantly less during winter months. Thus, for the proposed project, GPS would have about 30 MW of summer capacity to participate in FCA, but GPS would offer more if allowed by ISO-NE. (Tr. 1, pp. 74-75; Tr. 2, p. 169; Applicant 1, pp. 1 and 7)

87. In the event that GPS is unable to qualify in time for FCA#15, GPS would seek to participate in the annual replacement auction in 2023, i.e. one year after its proposed commercial operation date of 2022. (Applicant 6, response 4; Tr. 1, p. 35)

88. GPS would continue to participate in FCAs over the term of its PPAs. (Applicant 1, p. 7)

89. Securing a CSO is sufficient but not necessary to demonstrate a resource's necessity for electric reliability. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact #85)

Competitive Markets Benefit

90. The proposed project would help foster a competitive market. Specifically, GPS was selected by DEEP and the electrical distribution companies through a competitive bidding process authorized by Public Act 17-3. (Applicant 1, p. 7; Tr. 1, p. 37)

Forecast Capacity Benefit

91. The proposed project would add additional generating capacity to New England in light of both known and forecasted/projected power plant retirements. (Tr. 1, p. 37; Applicant 1, p. 7; Council Administrative Notice Item No. 27 – ISO-NE 2019 Regional Electricity Outlook, p. 18)

Domestic Energy Supply Benefit

92. The proposed project would reduce dependence on imported energy sources. (Tr. 1, p. 37)

93. The 2019 RSP notes that, "Risks to current and future power system reliability hinges on the availability of fuel to New England generators so that they can provide the electric energy needed for meeting system demand… Renewable generators generally can help supply the demand for energy and displace the traditional fuels that have been generating it, but the output of wind and solar facilities depends on the weather and time of day. For example, solar panels can reduce the consumption of natural gas and oil during sunny winter days, so more oil and gas are available later to generate electricity to meet the daily winter peak demand…" (Council Administrative Notice Item No. 23 – 2019 ISO-NE RSP, p. 130)

Fuel Diversity Benefit

94. The proposed project would help to diversify the state and regional electrical energy supply mix. (Tr. 1, p. 37; DEEP Comments dated November 2, 2020, p. 1)

95. On March 15, 2019, the six New England governors issued a joint statement announcing a commitment to regional cooperation on energy issues and to work in coordination with ISO New England and through the New England States Committee on Electricity. (Council Administrative Notice No. 23 – 2019 ISO-NE RSP, p. 173)

96. The New England Governors and Eastern Canadian Premiers (NEG ECP) focus on clean energy sources and regional opportunities to reduce greenhouse gas emissions through the Regional Climate Change Action Plan. Among other provisions, they acknowledge extreme temperatures in recent years have caused spikes in energy demand, resulting in high costs for consumers and an increased reliance on energy sources with high GHG emission rates. This is attributable to a system with limited energy diversification and storage, particularly during winter. They also acknowledge diversifying the resource mix and using clean energy sources during extreme-temperature events will decrease energy costs and increase environmental benefits. (Council Administrative Notice Item No. 23 – 2019 ISO-NE RSP, pp. 173-174)

97. The NEG ECP resolved the following:

a) Encourage policies that diversify resources and target affordable clean energy sources, including during peak periods, is important;

b) Strengthen and diversify the generation resource mix and storage capabilities to reduce energy costs and improve system resilience during periods of extreme temperatures;

c) Include onshore and offshore wind, large hydro, demand response, energy efficiency, and advanced battery and storage systems as clean energy resources to serve winter peaks and reduce GHG emissions; and

d) Research policies to reduce barriers and improve operational standards for encouraging a greater reliance on energy storage, resource diversity, and the use of clean energy.

(Council Administrative Notice Item No. 23 – 2019 ISO-NE RSP, pp. 173-174)

Electric Reliability Benefit

98. The proposed project would enhance electric reliability in Connecticut. (Tr. 1, p. 37)

99. The proposed project would interconnect to ISO-NE's pooled transmission facility system which allows electricity to be delivered to off-takers throughout New England. (Applicant 1, p. 5)

100. The proposed project is listed in the ISO-NE Interconnection Queue under Queue Position 1030 for a total of 120 MW with an estimated in-service date of November 30, 2022. There were approximately 1087 queue positions as of December 2020. (Applicant 1, p. 14; Council Administrative Notice Item No. 37 – ISO-NE Interconnection Request Queue)

Economic Benefit

101. By decision dated November 27, 2019, in PURA Docket No. 18-05-04, PURA determined that the proposed project is cost effective, i.e. it would provide its products at a just and reasonable price. (Applicant 1, p. 8; Tr. 2, pp. 238-241)

Project Alternatives

102. GPS performed a two-year site search before selecting the proposed site. GPS considered the following factors in its site selection process:

a) Sufficient parcel size, e.g. in excess of 700 contiguous acres;
b) Environmental constraints such as wetlands, rare species, etc.;
c) Cultural resource areas;
d) Topography;
e) Compatibility with land use regulations;
f) Cost to construct the project at a given site;
g) Willing landowners; and
h) Proximity to electrical transmission with sufficient capacity to accommodate the project.

(Applicant 1, p. 9)

103. Based on its selection criteria, GPS evaluated three alternative sites before selecting the proposed site. These sites and reasons for rejection are identified below:

a) **Halifax/Middleborough, MA** – This site was rejected because of the cost required to cut an existing 345-kV transmission line and build a new substation. A 345-kV cutover and associated equipment is substantially more expensive than for 115-kV. This site was also found to have a large percentage of wetland areas and supported rare wildlife species. This site is also located in close proximity to (and is highly visible from) a number of residential areas;
b) **Swanton and St. Albans area, VT** – This site was rejected because of transmission constraints associated with the Sheffield Highgate Export Interface. This site is also partially under a long-term agricultural easement and thus would not be available for solar development; and
c) **Torrington, CT** – This site would require a 115-kV line cut (similar to the proposed project), but the existing 115-kV line did not cross the property. This site is also entirely forested, has shallow soils and significant wetland areas.

(Applicant 1, pp. 9-10; Tr. 1, p. 34)

104. The proposed site was the only site that met all of GPS' criteria and thus was selected for the project. (Applicant 1, p. 9)

Site

105. Pursuant to RCSA §16-50j-2a(29), "Site" means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located. (RCSA §16-50j-2a(29))

106. The proposed site is located in the southern portion of East Windsor and is bounded by Windsorville Road to the south, Wapping Road to the east, Apothecaries Road to the north, and Ketch Brook to the west. (Applicant 1, p. 11)

107. The proposed site consists of a 485-acre portion of eight separate parcels (collectively, the subject property) identified below.

Parcel ID	**Owner**	**Size/Acreage**	**Zoning Designation**
057-65-001	Apothecaries Hall Enterprises LLC	97.8	R-3*, M-1** and A-1***
057-65-002	Apothecaries Hall Enterprises LLC	3.6	R-3
048-65-007	Apothecaries Hall Enterprises LLC	132.3	R-3, M-1 and A-1
037-65-005A	Northern Capitol Regional Disposal Facility Inc.	14.6	A-2****
027-49-017C	Northern Capitol Regional Disposal Facility Inc.	86.5	R-3
025-49-017A	Back 124 LLC	127.17	R-3
016-49-007	Edward & Dorothy Markowski	119.5	M-1
016-50-001	Edward & Dorothy Markowsi	155.50	M-1

*R-3 is Single-Family Residential District.
**M-1 is Manufacturing Zone.
***A-1 is Agricultural/Residential District.
****A-2 is Agricultural/Residential (floodplain and steep slopes) District.

(Applicant 1, pp. 11 and 45; Applicant 1, Tab D – Abutter Notification)

108. The Northern Capital Regional Disposal Facility Inc. and the Back 124, LLC properties are under an Option to Lease by GPS. The remaining subject properties are under purchase options. (Applicant 6, response 7, Exhibit B)

109. Pursuant to CGS §16-50p(g), the Council has no authority to compel a parcel owner to sell or lease property, or portions thereof, for the purpose of siting a facility. (Council Administrative Notice Item No. 79 - *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007))

110. Land uses adjacent to the proposed site include sand and gravel quarries; agricultural fields; a closed landfill; solar arrays; a gun club; an active freight railroad; a reclaimed lumber mill; a self-storage facility; and residences. (Applicant 1, p. 11)

111. The project site contains approximately 76 acres of sand and gravel mining operations; 230 acres of agricultural fields (primarily tobacco fields); and 330 acres of wooded areas. Of the approximately 230 acres of agricultural fields used for active farming, approximately 152 acres are farmed by the property owner, and approximately 78 acres are currently being leased to a third party for agricultural purposes. (Applicant 1, p. 11; Applicant 6, response 11)

112. Unimproved dirt farm roads interconnect the fields at the site and provide access to public roadways. Additionally, Eversource's electric transmission line right-of-way (ROW) crosses the proposed site from northwest to southeast. A DOT railroad (ROW) extends north-south through the center of the proposed site. Lastly, about 15 acres of the proposed site is classified as vacant commercial land. (Applicant 1, p. 11)

113. The closest off-site residence to the proposed project perimeter fence is located at 25 Plantation Road. This residence is located approximately 125 feet west of the proposed perimeter fence. (Applicant 6, response 13)

Project Description

Solar Array

114. The proposed project includes a mix of fixed solar panels and single-axis tracking solar panels. The proposed solar panels would likely be between 400 and 550 Watts direct current (DC) each. If the proposed project is approved, a final wattage selection (which may include a mix of wattages) would be included in the Development and Management Plan. (Applicant 6, response 14; Tr. 1, pp. 40-41)

115. The proposed fixed solar panels would be installed in a portrait fashion on linear arrays on racking systems generally in an east-west orientation with the panels facing the south. The panels would be oriented at an angle of approximately 20 to 30 degrees above the horizontal. (Applicant 6, responses 28 and 29)

116. The proposed tracking solar panels would be installed in a portrait fashion in north-south strings and would track from east to west. (Applicant 1, p. 12; Applicant 6, response 28; Tr. 1, p. 42)

117. There would be an approximately 8.8-foot wide aisle between the fixed solar racking systems (measured from panel edge to panel edge). The aisle width for the tracking solar panels would be approximately 15.2 feet. The minimum "aisle widths" are not expected to be less than proposed. However, if newer generation solar modules (which are physically larger) are installed, then aisle widths could be reduced to 8 feet for fixed solar panels and 14.4 feet for tracking panels. (Applicant 1, p. 12; Applicant 6, response 32)

118. Electricity from the panel arrays would be collected via DC collector lines and combiner boxes and then converted to AC at the facility's 36 inverters. DC collector lines could be run aboveground in cable trays or run underground. It is GPS' experience that newer projects have typically included aboveground DC collector lines due to cost and maintenance advantages. (Applicant 1, p. 13; Tr. 2, pp. 173-174)

119. Approximately 36 inverter skids on piles with gravel aprons would be located throughout the project footprint and would include transformers, inverters and electrical panels. The equipment would reach approximately 10 feet above grade. (Applicant 1, p. 12)

120. Once the DC output is converted to AC via the inverters, the transformers at each inverter location would raise the voltage to 34.5-kV. The 34.5-kV AC collector lines would be run underground. (Applicant 1, p. 13; Tr. 1, p. 61)

121. The solar array areas and inverters south of Ketch Brook would be electrically connected to the northern project area via 34.5-kV collector lines. The collector lines would be routed below Ketch Brook utilizing the horizontal directional drill (HDD) method. (Applicant 1, p. 14; Tr. 1, p. 60)

122. The solar array areas and inverters south of Plantation Road would be electrically connected to the northern arrays via 34.5-kV collector lines that would be run underground across Plantation Road using either a cut and cover construction method or via boring. (Applicant 1, p. 14)

123. The 34.5-kV output from all of the array areas would be supplied to the GPS Substation where the voltage would be raised to the transmission level of 115-kV. See next section titled "GPS Substation." (Applicant 1, p. 13)

124. The total AC power output (or nameplate rating) of the project would be approximately 120 MW at the point of interconnection, taking into account losses. See section titled "Electrical Interconnection." (Applicant 6, response 17)

125. The top of the fixed solar arrays would reach a height of approximately nine feet. The bottom of the fixed solar arrays would be located approximately two feet above grade. (Applicant 1, p. 12)

126. The top of the tracking solar arrays would reach a maximum height of approximately 14.7 feet. The bottom of the tracking solar arrays would be a minimum of three feet above grade. (Applicant 1, p. 12)

127. The facility would be surrounded by an agricultural fence of at least seven feet high and with a single strand of barbed wire on top. A six-inch gap at the bottom of the fence would be included intermittently along the fence limits. Additionally, the agricultural fence has a larger mesh size than typical chain link fence, and this would also allow small animals to enter and exit the site. (Applicant 6, response 33)

128. GPS has minimized the land area required to meet its capacity goals. (Tr. 1, p. 41)

129. Constraints related to PPA commitments limit GPS' ability to reduce its capacity; likewise, constraints related to its pending interconnection request with ISO-NE, limit GPS' ability to increase its capacity. (Tr. 1, p. 41)

Site Access

130. Access to the site would be via two entrances off of Plantation Road and two entrances off of Apothecaries Hall Road. The proposed gravel access drives would be approximately 15 feet wide. Approximately 0.9 mile of existing access would be utilized, and approximately 4.8 miles of new access would be installed to serve all of the solar arrays, substation and switchyard. (Applicant 1, pp. 12 and 70; Applicant 6, response 31)

GPS Substation

131. The proposed GPS Substation would be located east of the railroad line and south of the Eversource ROW. (Applicant 1, Tab A, Project Layout Map)

132. GPS Substation would be approximately 250 feet by 250 feet (or about 1.43-acres in area). The base of the substation would a mix of concrete pads, rip rap and gravel. (Applicant 1, Tab G, Visibility Assessment, p. 7; Tr. 1, p. 54)

133. GPS Substation would include the 34.5-kV to 115-kV main power transformer. GPS Substation would also include circuit breakers; disconnect switches; electrical bus and conductors; steel structures and foundations for equipment support; masts for lightning protection and lighting; and an equipment enclosure containing protective relaying and monitoring systems. (Applicant 1, p. 13)

134. The tallest equipment within GPS Substation would be the 50-foot tall lightning masts. (Applicant 1, Tab G, Visibility Assessment, p. 7)

135. GPS Substation would have an eight-foot tall chain link fence with barbed wire on top. There would not be a wildlife gap at the bottom of the fence. (Applicant 1, p. 12; Tr. 1, pp. 44, 53)

136. The point of change of ownership (from GPS to Eversource) is anticipated between two circuit breakers from the 115-kV side of the Collector Substation to the Eversource Switchyard. (Applicant 6, response 35)

Eversource Switchyard

137. The project includes a new switchyard (Eversource Switchyard) that would be constructed by GPS and later transferred to Eversource at commissioning so that it would be owned and operated by Eversource. Thus, the Eversource Switchyard is considered part of the Application. (Tr. 1, p. 55; Applicant 1, Tab G, Visibility Assessment, p. 7)

138. The Eversource Switchyard would be located east of the railroad line and south of the Eversource ROW. It would be installed directly next to and northwest of the GPS Substation. (Applicant 1, Tab A, Project Layout Map)

139. The dimensions of the Eversource Switchyard would be approximately 350 feet by 350 feet (or about 2.81-acres in area). The base of the substation would a mix of concrete pads, rip rap and gravel. (Applicant 1, Tab G, Visibility Assessment, p. 7; Tr. 1, p. 55)

140. The Eversource Switchyard would contain circuit breakers; disconnect switches; metering equipment; electrical bus and conductors; steel structures and concrete foundations for equipment support; masts for lightning protection and lighting; and an equipment enclosure containing protective relaying and monitoring systems. (Applicant 1, p. 13)

141. The tallest equipment within the Eversource Switchyard would be the 50-foot tall lightning masts. (Applicant 1, Tab G, Visibility Assessment, p. 7)

142. The Eversource Switchyard would have an eight-foot tall chain link fence with barbed wire on top. There would not be a wildlife gap at the bottom of the fence. (Applicant 1, p. 12; Tr. 1, p. 44)

Electrical Interconnection

143. The existing Eversource electric transmission line ROW contains two 115-kV transmission lines: #1100 Line and the #1200 Line. (Applicant 1, p. 11)

144. The Eversource Switchyard would connect to the #1200 Line. A line loop and at least one new pole may be necessary to facilitate this connection. Eversource would file with the Council a Petition for a Declaratory Ruling for the interconnection of the Eversource Switchyard with the existing electric transmission line. (Applicant 2, Report on Electric and Magnetic Fields, p. 9; Tr. 1, p. 55)

145. On July 11, 2019, GPS submitted an interconnection request to ISO-NE for 50 MW to be connected to the #1200 Line. A second interconnection request to allow for an additional 25 MW was submitted to ISO-NE on November 28, 2019. On May 26, 2020, the third and fourth interconnection requests were submitted to ISO-NE to bring the total request to 120 MW. A thermal and steady state analysis was performed that confirmed that the #1200 Line could support at least 120 MW of new generation. (Applicant 1, p. 14)

Project Construction

146. The proposed construction sequence would be in approximately the following phases:
   a) Construct access roads, install stormwater controls, grade and stabilize site;
   b) Seed areas for temporary and permanent vegetation;
   c) Install panel racking and solar panels with collector lines and collector boxes;
   d) Install inverters; and
   e) Construction substation and switchyard.

   (Applicant 1, p. 15)

147. Of the approximately 737 acres of the subject property, approximately 485 acres would be developed to construct the proposed project. (Applicant 1, p. 11)

148. A total of approximately 83 acres of vegetation would be cleared to allow for construction and operation of the project. The need to remove trees to avoid shading was minimized by setting the panels back approximately two to three times the height of the trees, where feasible. (Applicant 6, response 48; Applicant 10, Late Filed Exhibit a)

149. Through most of the site, the project would conform to existing surface grades. Within the proposed fenceline, in areas where panels are proposed in steeper areas, GPS would grade such areas to achieve a maximum slope of 15 percent. The maximum grade for the project site for non-array areas would be 3:1. (Applicant 1, p. 12)

150. No cut or fill is anticipated to be required for the proposed access roads. Approximately 873,000 cubic yards of soil would be moved within the gravel pit portions of the project, and those portions would be balanced, i.e. there would be no excess material imported or exported. If any excess cut results from the farm fields, including topsoil(s), it would likely be stockpiled onsite or utilized in the gravel pit area. (Applicant 6, response 65)

151. The posts that support the solar racks would be approximately 16 feet long with an embedment depth of approximately 9 to 10 feet. (Applicant 6, response 53)

152. The posts would typically be driven into the ground by a truck-mounted pile driver. Based on the results of the geotechnical report, it is not anticipated that shallow ledge would be encountered at the site. However, if ledge is encountered, ground screws could be used in lieu of pile-driven posts. (Applicant 6, response 67)

153. If the proposed project is approved, GPS would commence construction of access roads, installation of stormwater controls, grading and stabilization beginning late summer or early fall 2021. Seeding with temporary and permanent vegetation* may occur in fall 2021 and late winter/spring 2022. Panel racking and panel installations would likely commence in spring 2022, with the installation of collector line and combiner boxers occurring concurrent to panel installations. Inverters would likely be installed in summer 2022. Construction of the substation and the switchyard would start as soon as late summer 2021. Commissioning and testing of the facility are planned for late summer and fall 2022. Commercial operation of the facility is targeted for between November and December 2022, if not sooner. Final minor construction punch list items and completion of certain minor features may not occur until spring or early summer 2023.

*GPS plans to seed and establish vegetation prior to commencing construction related to the solar panel racking.

(Applicant 1, p. 15; Tr. 1, pp. 124-127)

154. Typical construction hours would be Monday through Friday, 7:00 a.m. to 5:00 p.m. However, weekend work and some longer hours may be necessary to meet critical milestones. (Applicant 1, p. 65; Applicant 6, response 70)

Traffic

155. GPS would implement appropriate traffic management measures during construction. (Applicant 1, p. 66)

156. Once construction is complete, the traffic levels at the site would be greatly reduced in comparison to existing gravel mining and farming operations. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 18)

Facility Operation

157. The estimated capacity factor (on an AC MWh/AC MWh basis) of the project (taking into account the mix of fixed and tracking panels) would be approximately 18 percent based on a 450 Watt solar panel design. If the project consisted of only fixed panels, the capacity factor would be about 17 percent based on a 450 Watt solar panel design. (Applicant 6, responses 19 and 20)

158. The proposed project would be expected to produce approximately 253,000,000 kilowatt-hours (kWh) or 253,000 MWh of AC electrical energy in the first year of operation. (Applicant 6, response 18)

159. As the solar panels age, power output would decline by roughly 0.5 percent per year. (Applicant 6, response 22)

160. The proposed solar facility would be expected to have a useful life of approximately 30 years. (Applicant 6, response 49)

161. Potential future panel upgrades to the solar panels (e.g. replacement with higher wattage panels) would be subject to the terms of the PPAs and the interconnection agreement. (Tr. 1, pp. 112-114)

162. A battery storage system is not proposed for this project at this time; however, the project design would not preclude a future battery storage system. GPS is currently monitoring the market conditions in New England and the emerging battery storage technologies. (Applicant 6, response 23; Tr. 1, p. 87)

Operations and Maintenance

163. GPS has provided a post-construction Operations and Maintenance Plan (O&M Plan) that includes the maintenance and monitoring requirements for the facility and its components. (Applicant 1, Tab P, O&M Plan, p. 1)

164. All project equipment would be inspected and maintained per the manufacturer requirements. (Applicant 1, Tab P, O&M Plan, p. 4)

165. Grounds maintenance requirements are listed below.

Task	Frequency
On-site visual inspection	Once per year or per manufacturer requirements
Mechanical and electrical inspection	Once per year
Panel cleaning	Once per year
Grass cutting and weeding	Once per year between April and October
Snow removal	As needed between October and April
Perimeter fence inspection	Once per year
Stormwater management area inspection	Once per year inspection of vegetated areas and removing accumulated sediment/debris as necessary

(Applicant 1, Tab P, O&M Plan, pp. 4-5)

166. Snow accumulation on the solar panels would not be cleared unless accumulation persists for a longer duration. If snow or ice conditions are forecasted to persist for long periods, GPS may consider snow removal using best practices, e.g. hand cleaning with brooms or pressure washer. (Applicant 6, response 71)

167. Snow would be plowed off of access roads to the electrical equipment pads following snow events as necessary. (Applicant 1, Tab P, O&M Plan, p. 4)

168. GPS' O&M service provider would provide 24/7 remote monitoring of system performance and telephone support for corrective actions. (Applicant 1, Tab P, O&M Plan, p. 5)

Project Decommissioning

169. The project has a lifespan of approximately 30 years. (Applicant 6, response 49)

170. GPS provided a decommission plan including infrastructure removal plans and site restoration plans. At the time of decommissioning, GPS' Agricultural Soil Protection Plan (ASPP) includes restoring farmland soils in order to maintain or improve soil quality. (Applicant 1, p. 72; Applicant 1, Tab S, Decommission Plan; Applicant 1, Tab T, ASPP, p. 1)

171. The leases for the subject properties include provisions for a restoration period and respective restoration obligations. (Applicant 6, Response 7)

172. Removal and disposal of plant components would comply with DEEP recommendations for best practices. To the maximum extent feasible, salvageable components and equipment would be sold for reuse or recycled. (Applicant 1, Tab S, Decommission Plan, p. 4)

173. There is currently a market for the reuse and recycling of used solar modules. (Tr. 2, p. 221)

174. A certification regarding Toxicity Characteristic Leaching Procedure (TCLP) is generally not available from the solar panel manufacturer in advance. Notwithstanding, it has been GPS' experience that solar module disposals have been accepted at non-hazardous waste disposal facilities. (Tr. 2, pp. 221-222)

Public Safety

175. The proposed project would comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC) and any applicable National Fire Protection Association codes and standards. (Applicant 6, response 36)

176. GPS would provide appropriate training and access to individuals with authorized or emergency access to the facility. (Applicant 1, p. 67)

177. Emergency responders would have access to the site via the proposed access gates. Additionally, the gravel access roads would act as a fire break and would be sufficient to support emergency response. (Applicant 1, p. 67)

178. The proposed solar facility would have an internal protection system to shut down, as appropriate, the affected portion(s) of the solar facility should a fault occur. If one section of the solar array experiences electrical problems that result in that section shutting down, other sections could still operate and transmit power to the grid. The protection system also has the capability to shut down the entire facility if necessary. (Applicant 3, response 25)

Aviation Safety

179. The nearest federally-obligated airport is Bradley International Airport, located approximately 7 miles from the proposed solar facility. (Applicant 6, response 37)

180. By letters dated June 12, 2020, the Federal Aviation Administration (FAA) issued Determinations of No Hazard to Air Navigation (No Hazard Determinations) for the proposed project based on GPS' filings for 18 points along the perimeter of the project and one "high point." The No Hazard Determinations expire on 12/12/2021 unless construction commences or it is extended/revised by the FAA. Applicant 1, Tab Q – No Hazard Determinations)

181. A glare analysis is not required for the proposed project. Also, no marking or lighting is required for aviation safety. (Applicant 6, response 37; Tr. 1, pp. 45-46; Applicant 1, Tab Q – No Hazard Determinations)

182. While GPS anticipates that a crane would be required for the construction of the Eversource switchyard and GPS substation, the height of such crane would be less than 200 feet and would not require notice to FAA. (Applicant 6, response 38)

Noise

183. GPS performed a noise assessment study for the proposed project to take into account the mechanical equipment including inverters, transformers, and panel tracking systems, which would be the sources of the noise for the proposed project. (Applicant 1, Tab N – Acoustical Study, p. 1)

184. The sources of noise for the proposed project would only operate in the daytime. (Applicant 1, Tab N – Acoustical Study, p. 10)

185. While the proposed facility would be considered a Class C (industrial) noise emitter under DEEP Noise Control Standards, it was conservatively modeled as a Class B (Commercial) noise emitter. 54 surrounding receptor locations were treated as Class A residential receptors. The DEEP Noise Limit for a Class B source emitting to a Class A receiver is 55 dBA during the daytime and 45 dBA during the nighttime. (Applicant 1, Tab N – Acoustical Study, pp. 4, 9-11)

186. The proposed facility would be in compliance with DEEP Noise Control Standards because the maximum worst-case noise level at any nearby residences would be 46 dBA, which is below the daytime DEEP Noise Limit of 55 dBA. (Applicant 1, Tab N – Acoustical Study, p. 10)

187. Construction noise is exempt from DEEP Noise Control Standards. (RCSA §22a-69-108(g))

Environmental Effects

Air Quality

188. Minor construction-related impacts to air quality could include emissions produced by the operation of construction machinery or fugitive dust emissions, but such impacts would not be expected to be greater than that associated with the use of agricultural and gravel mining equipment that is currently being used. In order to reduce and mitigate potential impacts to air quality, exposed soils would be periodically sprayed with water as necessary during construction, and crushed stone aprons would be installed at access road entrances for dust control. (Applicant 1, p. 60)

189. GPS would prohibit excessive idling of construction equipment engines. (Applicant 1, p. 66)

190. During operation, the proposed project would not produce air emissions of regulated air pollutants or GHGs. Thus, no air permit would be required. (Applicant 1, p. 60)

191. An equivalently-sized natural gas fueled electric generating facility would produce about 12,036,544 metric tons of carbon dioxide equivalent (MT CO_2eq) over an equivalent 30-year service life. The proposed solar facility would have a net carbon emissions of approximately 230,105 MT CO_2eq or about 98.1 percent less than a natural gas-fueled facility over the same 30-year service life. (Applicant 6, response 49)

192. The proposed project would meet DEEP air quality standards. (Applicant 1, p. 73)

Water Quality

193. The proposed project would meet DEEP water quality standards. It would not consume water during its operation. (Applicant 1, pp. 57, 73)

194. The proposed project would be located outside of the 100-year flood zone except for a portion of the Ketch Brook Crossing Cable. There are no 500-year flood zones within the project area. (Applicant 1, Tab A, Project Layout Map; Applicant 1, Tab A, Floodplain, Surface & Groundwater Resources Map; Applicant 6, response 41)

195. The northern end of the Windsorville portion of the project (i.e. northeastern portion of the project) would be located within a DEEP-designated Aquifer Protection Area (APA). (Tr. 1, 51)

196. GPS would implement an Aquifer Protection Program (APP) to protect the aquifer. The APP would include best management practices including, but not limited to, proper water quality treatment; and avoiding storage of fuels and refueling within the APA. (Tr. 1, p. 51)

197. There are two wells within the project site. These wells are associated with buildings located south of Plantation Road. One well serves a cluster of greenhouses and is used for irrigation purposes. The other well is associated with a seasonal camp and is used by tobacco workers. Both the greenhouses and camp buildings are slated to be removed during construction. GPS may utilize these wells for non-potable uses during construction. (Applicant 6, response 50)

198. GPS does not anticipate any impacts to groundwater quality as a result of construction. Blasting would not be required, and proposed site grading within agricultural fields would be minimal. Additionally, potential impacts to groundwater quality would be minimized per the erosion and sedimentation control plan as well as Spill Prevention Control and Countermeasure Plans. (Applicant 6, response 50)

199. The main power transformer at GPS Substation would have secondary containment measures for its insulating oil that would comply with the Institute of Electrical and Electronic Engineers (IEEE) standards. (Tr. 1, p. 54)

200. The solar panels would be cleaned typically once per year. Cleaning would be performed with water and a soft-bristled broom if necessary. No chemicals would be used for panel cleaning. (Applicant 1, Tab P, Operations and Maintenance Plan, p. 4)

Stormwater

201. Pursuant to CGS Section 22a-430b, DEEP retains final jurisdiction over stormwater management and administers permit programs to regulate stormwater pollution. DEEP regulations and guidelines set forth standards for erosion and sedimentation control, stormwater pollution control and best engineering practices. (CGS §22a-430b; DEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (DEEP-WPED-GP-015)

202. The DEEP Individual and General Permits for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Stormwater Permit) require implementation of a Stormwater Pollution Control Plan (SWPCP) to prevent the movement of sediments off

construction sites into nearby water bodies and to address the impacts of stormwater discharges from a project after construction is complete. In its discretion, DEEP could hold a public hearing prior to approving or denying any Stormwater Permit application. (CGS Section 22a-430b; CGS Section 22a-430(b))

203. DEEP has the authority to enforce Project compliance with its Individual or General Permit and the SWPCP, including, but not limited to, the installation of site-specific water quality protection measures in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* (2002 E&S Guidelines). (CGS Section 22a-430b)

204. The Council may impose a condition that requires subsequent compliance with DEEP standards and regulations. (Council Administrative Notice No. 76)

205. The project has been designed to comply with the *2004 Connecticut Stormwater Quality Manual* (2004 Stormwater Manual) and the 2002 E&S Guidelines. (Applicant 1, p. 58; Applicant 6, response 40)

206. GPS' proposed stormwater management plan would result in no net increase in runoff to any surrounding properties. (Applicant 1, p. 73)

207. On July 28, 2020, GPS held a site walk with DEEP Stormwater Division. Subsequent to the site walk, GPS held teleconferences with DEEP Stormwater Division on September 15 and 29, 2020. The purpose of the teleconferences and site walk was to review the project's proposed stormwater management approach and methods as well as the plans to utilize existing upland depressions and valleys located onsite. Additional discussions regarding the handling of a large area onsite, particularly located within and adjacent to the northern active gravel pit (which would not have discharge of stormwater runoff from the site), are ongoing. (Applicant 1, p. 22; Applicant 6, response 63)

208. DEEP Stormwater Division staff requested that areas of the project that do not have the ability to discharge off-site nonetheless be included under the project's stormwater permit. (Applicant 6, response 63)

209. DEEP also requested that GPS provide a summary of how the project is compatible with the January 8, 2020 Appendix I, Guidance Regarding Solar Arrays, as well as the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and that GPS justify any condition that is met by alternative or appropriate methods. GPS has submitted such information to DEEP. (Applicant 6, response 63)

210. GPS expects to submit its stormwater permit application to DEEP after receipt of the DEEP NDDB final determination for the project, i.e. safe harbor determination letter. (Applicant 6, response 62; Tr. 1, p. 102; Tr. 2, pp. 170-171)

Wetlands and Watercourses

211. The Inland Wetlands and Watercourses Act (IWWA), CGS §22a-36, *et seq.*, contains a specific legislative finding that the inland wetlands and watercourses of the state are an indispensable and irreplaceable but fragile natural resource with which the citizens of the state have been endowed, and the preservation and protection of the wetlands and watercourses from random, unnecessary, undesirable and unregulated uses, disturbance or destruction is in the public interest and is essential to the health, welfare and safety of the citizens of the state. (CGS §22a-36, et seq.)

212. The IWWA grants regulatory agencies with the authority to regulate upland review areas in its discretion if it finds such regulations necessary to protect wetlands or watercourses from activity that will likely affect those areas. (CGS §22a-42a)

213. The IWWA forbids regulatory agencies from issuing a permit for a regulated activity unless it finds on the basis of the record that a feasible and prudent alternative does not exist. (CGS §22a-41)

214. Under the IWWA:
    a. "Wetlands" means land, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service of the United States Department of Agriculture;
    b. "Watercourses" means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border the state; and
    c. Intermittent watercourses are delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation. (CGS §22a-36, *et seq*.)

215. A total of 16 wetlands are identified within the project's study area. The majority of the wetlands within the study area are scrub-shrub and forested wetlands with some instances of depressional wetlands. (Applicant 1, pp. 26-29)

216. One intermittent watercourse, IWC-1, was identified within the project's study area. IWC-1 is located in the western limits of the subject property and is connected to Wetland 3. (Applicant 10, Late Field Exhibit e, Wetland Impact Map)

217. The proposed buffers for wetlands and watercourses are listed below.

Smallest Wetland/Watercourse Buffer to Nearest Limit of Work	
Wetland/Watercourse	Distance
Wetland 1 (Ketch Brook riparian)	± 42' from rail crossing access, ± 111' otherwise
Wetland 2	± 777'
Wetland 3	± 0' (existing disturbance for farm operations)
Wetland 4	± 333'
Wetland 5	± 192'
Wetland 6	± 202'
Wetland 7	± 450'
Wetland 8	± 374'
Wetland 9	± 222'
Wetland 10	± 0' (within limits of active gravel pit)
Wetland 11	± 0' (within limits of reclaimed gravel pit)
Wetland 12	± 205'
Wetland 13	± 371'
Wetland 14	± 12' (between active gravel pit and capped landfill)
Wetland 15	± 0' (between active gravel pit and capped landfill)
Wetland 16	± 100'
Intermittent Watercourse IWC-1	± 120'

(Applicant 10, Late Filed Exhibit e)

218. The proposed project would minimize direct impacts to wetlands, except for Wetland 10. Wetland 10 is an isolated, poorly developed wetland that has been subject to routine disturbance during farming and gravel mining operations. The proposed project would eliminate Wetland 10. (Applicant 1, p. 10)

219. GPS would utilize best management practices including erosion and sedimentation control measures per the 2002 E&S Guidelines to avoid or minimize indirect wetland and watercourse impacts during construction. (Applicant 1, p. 55; Applicant 6, response 40)

Vernal Pools

220. Vernal pool surveys were conducted by VHB during March 13, 2020; March 24, 2020; March 26, 2020; April 7, 2020; and May 6, 2020. Six vernal pools (VP) were identified at the proposed site. (Applicant 1, p. 36 and Tab K, Vernal Pool Survey Report, pp. 2-3)

221. The six vernal pools are listed below:

Vernal Pool	Area (square feet)	Classification	Location
VP1	1,300	Classic kettle hole	Wetland 16
VP2	8,600	Classic kettle hole	Wetland 8
VP3	5,700	Cryptic oxbow	Wetland 1
VP4	400	Cryptic	Wetland 6
VP5	550	Cryptic	Wetland 6
VP6	3,500	Cryptic oxbow	Wetland 12

(Applicant 1, Tab K, Vernal Pool Survey Report, pp. 3-7)

222. While no development would occur within the 100-foot Vernal Pool Envelopes, the proposed project development would extend into the 100-foot to 750-foot Critical Terrestrial Habitats (CTH) of all six vernal pools. The pre-construction and post-construction percent developed areas within the CTHs of the vernal pools are as follows.

Vernal Pool Designation	**Pre-construction %CTH developed**	**Post-construction % CTH developed**
VP1	35	42
VP2	15	21
VP3	4	6
VP4	19	20
VP5	17	18
VP6	56	61

(Applicant 6, response 56)

223. The 2015 U.S. Army Corps of Engineers New England District Vernal Pool Best Management Practices (ACOE VP BMPs) recommend limiting development to less than 25 percent of the CTH. The CTH with the most impact would be associated with VP1 which would increase from 35 percent developed* to 42 percent developed. However, the proposed project would be located within previously-developed areas with minimal tree clearing on the edges of these developed areas; therefore, it would not impede amphibian terrestrial passage within the upland forest and wetlands. Thus, the proposed project would comply with ACOE VP BMPs.

*According to ACOE VP BMPs, "developed areas" also include fields because vernal pool breeding species are forest-dwelling.

(Applicant 6, response 56)

Visibility

224. The solar panels are designed to have low irradiance (reflectance), i.e. about 97 percent of the light would be absorbed by the panels. (Applicant 1, p. 12)

225. The nearest scenic road is a portion of Route 74 which is a state-designated scenic road. Due to the distance of approximately four miles from the proposed site, the proposed project would not be visible from this scenic road. (Applicant 6, response 59)

226. The nearest publicly accessible recreational area to the proposed solar project is Pierce Memorial Park, located approximately 600 feet east of the nearest project boundary. Visibility of the solar facility from the park will be screened by an existing, dense vegetative buffer and multiple residences that are located along Windsorville Road. (Applicant 6, response 54)

227. Approximately 3.9 percent of the two-mile radius visual study area (VSA)* could have some level of visibility of the proposed project. Visibility areas would likely be limited to a 0.25 mile radius of the proposed project. See attached Figure 4.

*The two-mile VSA has a total area of about 25 square miles or about 16,000 acres.

(Applicant 1, Tab G, Visibility Assessment, p. 8)

228. While the proposed tracking panels are taller with a maximum height of 14.7 feet than the proposed fixed panels at 9 feet, a project with only fixed panels would only reduce the visibility by about 1.3-acre or about 0.008 percent of VSA, and the reduction in visibility area would likely go unnoticed. (Applicant 1, p. 12; Applicant 6, response 60)

229. The visibility areas for the proposed project would be largely contained within the project site itself due to the relatively low-profile of the proposed panels and the presence of mature vegetation surrounding the project site. (Applicant 1, Tab G, Visibility Assessment, p. 11)

230. Local roads with potential visibility include Apothecaries Hall Road, Windsorville Road, Plantation Road, and Wapping Road, and such roads are located directly adjacent to the proposed project site. A small area of potential visibility extends beyond these roads and the proposed site into a small open field and residential area north of Apothecaries Hall Road. (Applicant 1, Tab G, Visibility Assessment, p. 11)

231. Homes located along Apothecaries Hall Road directly adjacent to the proposed site may experience some level of visual impact due to the introduction of solar panels and perimeter fencing. Vegetative mitigation may be effective at reducing impacts to these areas. (Applicant 1, p. 59)

232. Homes located along Plantation Road may have some limited views of the project area through an existing hedgerow; thus, supplemental screening may minimize project visibility. (Applicant 1, p. 59)

233. A few homes located along Rye Street may have limited views into the proposed project area. Selective plantings may be effective in reducing or eliminating visibility from these locations. (Applicant 1, p. 59)

234. In southern portions of the proposed site, visibility would extend to an open field south of Wapping Road. A narrow hedgerow separating this field from a residential development provides a vegetative buffer which could partially screen views of the proposed project. (Applicant 1, Tab G, Visibility Assessment, p. 11)

235. A small area of visibility of the proposed project would extend from the proposed site onto the Topstone Golf Course located south of Wapping Road. (Applicant 1, Tab G, Visibility Assessment, p. 11)

236. To the west of the proposed site, views from Abraham George Lane and Rye Street would be substantially, if not entirely, screened due to the presence of a thick vegetative buffer. (Applicant 1, Tab G, Visibility Assessment, p. 11)

237. GPS has developed a Landscape Visual Mitigation Plan (LVMP) that includes native plantings and would reduce and minimize visual potential visual impacts of the proposed facility. The LVMP includes three levels or tiers of screening listed below from highest to lowest:

    a) Module 1 is designed for the highest level of screening and includes the use of trees and shrubs and incorporates more evergreens for significant screening during both the summer and winter seasons. Module 1 is intended for areas where stationary uses (e.g. residential uses rather than vehicular/traffic) could be impacted by visibility of the project. See Figure 5;

b) Module 2 is designed for areas where there is potential for high viewership and visibility but stationary activity such as residential or recreational activity is low. Module 2 is intended for use along major roadways and select areas along the perimeter of the proposed solar arrays; and

c) Module 3 is designed to establish a visual and ecological buffer along the fenceline in areas where viewer exposure is generally low or fleeting in nature. Module 3 includes a mix of herbaceous plant material that can provide habitat for local pollinators.

(Applicant 1, Tab G, Visibility Assessment, Appendix B, Sections 1 through 6)

238. As part of the LVMP, GPS could also enhance the access road entrance areas with features such as agricultural or split rail fencing, wooden entry gates, and landscape plantings around the entrance areas. (Applicant 1, Tab G, Visibility Assessment, Appendix B, Section 7)

Historic and Archaeological Resources

239. No previously identified archaeological sites or properties listed on the State or National Register of Historic Places are identified within one mile of the proposed site based on existing records. However, this is likely due to a lack of professional surveys in this portion of East Windsor rather than an absence of cultural resources. (Applicant 1, Tab M – Phase IA Cultural Resources Assessment Survey Report, p. 1)

240. A Phase IA Cultural Resources Assessment Survey Report (Phase 1A Report) dated May 2020 (and updated July 2020) was prepared by Heritage Consultants, LLC (Heritage) for the proposed project. The assessment concluded that 278.1 acres retain no to low archaeological potential, and approximately 238.9 acres possess a moderate sensitivity for producing archaeological resources. No additional archaeological examination of the no/low potential areas was recommended. (Applicant 1, Tab M – Phase IA Report, pp. i and 2)

241. Heritage recommended that the areas of moderate sensitivity be subject to archaeological examination as part of a Phase IB cultural resources reconnaissance survey. Specifically, Heritage recommended subsurface testing (i.e. shovel tests) at regular specified intervals. Heritage also recommended that the agricultural fields in these areas be subject to a pedestrian survey augmented by limited shovel testing. (Applicant 1, Tab M – Phase IA Report, pp. i, 2, 23)

242. As part of the Phase IA survey, Heritage also identified 41 historic period buildings that are located on or adjacent to the proposed site*. The historic buildings include tobacco sheds, several English-style barns, residences, a water tower, and ancillary structures. A preliminary review of these buildings revealed that many exhibit a high level of integrity. Heritage recommended that additional examination/documentation of these buildings take place prior to final design/construction of the project so that the potential for eligibility for the National Register of Historic Places (NRHP) for such structures can determined.

*A portion of the proposed site is a functioning tobacco and vegetable farm with historic roots.

(Applicant 1, Tab M – Phase IA Report, p. i)

243. The Phase IA Report was reviewed by the SHPO. By letter dated June 2, 2020, SHPO concurs that a Phase IB survey with subsurface techniques be performed in the 238.9 acres that retains a moderate to high potential to contain intact archaeological deposits. SHPO also concurs that additional examination and documentation of exteriors and interiors (where possible) of historic structures be performed within the study noted to ascertain potential eligibility on either the State or National Register of Historic Places. (Applicant 1, Tab M – SHPO Letter dated June 2, 2020)

244. A Phase IB Archaeological and Architectural Survey Report (Phase 1B Report) dated September 2020 was prepared by Heritage. In the Phase IB Report, Heritage notes that it performed 389 of 474 planned shovel tests located throughout the project area. A total of four archaeological loci were found: Locus 2-1, Locus PSA-7-1, Locus PSA-7-2, and Locus PSA-10-1. None of the four loci were deemed significant per NRHP criteria. Thus, Heritage notes that no impacts to archaeological resources would be expected to result from construction of the proposed project, and no additional archaeological examination of the proposed site is recommended. (Applicant 5, Phase 1B Report, p. i)

245. In the Phase IB Report, Heritage's architectural survey determined that the proposed site contained historic residences, tobacco sheds, English-style barns, ancillary farm buildings, a standing water tower, and a dilapidated water tower. Some of these structures such as six tobacco sheds, three other buildings, and a water tower, would not be impacted directly by the proposed project. Historic structures located within and adjacent to the proposed site retain a high level of integrity; are important to the historic agricultural landscape; and a dwindling types of resources per SHPO. Heritage believes that Markowski Farms may be eligible for listing on the NRHP subject to SHPO's determination. (Applicant 5, Phase 1B Report, p. i)

246. GPS met with SHPO on October 16, 2020 to review the aboveground structures and discuss which structures GPS proposes to remove and which GPS would leave in place. (Tr. 1, p. 52-53)

247. By letter dated November 6, 2020, SHPO notes that it has reviewed the Phase 1B Report and concurs that no additional archaeological investigations of the project area are warranted. SHPO also concurs that Markowski Farms is eligible for listing on the NRHP. SHPO also notes that the proposed project would include the demolition of at least 22 contributing structures; thus, the proposed project would adversely impact Markowski Farms, a historic resource. In order to resolve this adverse impact, SHPO would like to continue its consultations with GPS to discuss minimization measures and mitigation options. (Applicant 7, SHPO Letter dated November 6, 2020)

248. Subsequent to its October 16, 2020 meeting with SHPO, GPS visited the site with a construction expert to determine which barns could safely be left in place from a public safety perspective, e.g. fire safety and possible unauthorized entry. In general, any barn removals would likely be ones that are interior to the site that would not have easy access by public safety officials. Barns located near the main roadways are generally slated to remain for visual screening purposes. GPS plans to continue discussions with SHPO regarding the barns in order to reach an agreement. (Tr. 1, pp. 52-53; Tr. 2, pp. 171-173)

Wildlife

249. On December 19, 2019 and March 4, 2020, DEEP Natural Diversity Database (NDDB) Preliminary Assessments were provided to GPS. These assessments identified the known extant populations of 15 state-listed plant and animal species that occur within or near the boundaries of the proposed site. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 1)

250. The 15 state-listed species referenced in the NDDB preliminary assessments include: big sand tiger beetle; bog copper; eastern pearlshell; scribbled sallow moth; climbing fern; dwarf huckleberry; short-awned meadow foxtail; purple milkweed; American brook lamprey; American kestrel; red-headed woodpecker; Savannah sparrow; sharp-skinned hawk; short-eared owl; and wood turtle. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 2-3)

251. On July 20, 2020, GPS submitted to DEEP NDDB its recommended conservation/protection strategies based on surveys and habitat assessments performed for the state-listed species. (Applicant 1, Tab J, Memo from VHB to DEEP NDDB dated July 19, 2020)

252. GPS met with DEEP NDDB staff on October 23, 2020 to discuss the mitigation measures for wildlife. GPS held a follow-up teleconference with DEEP NDDB staff on November 20, 2020. Based on that teleconference, GPS is in substantial agreement with DEEP NDDB staff regarding mitigation measures, and GPS anticipates that a safe harbor determination letter will be issued. (Tr. 1, p. 52; Tr. 2, pp. 170-171)

Invertebrate

253. The big sand tiger beetle, a state-listed Species of Special Concern, inhabits exposed sandy substrates where its larvae are subterranean and trap insects in shallow pits that they construct. This species has a strong affinity to areas mapped with Windsor sands. While the Windsor sands are not mapped at the project site, gravel mining can unintentionally create similar habitats. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 17)

254. Two inactive areas of two gravel pits were surveyed on May 21, 2020. Additional surveys were completed in June 2020 and concluded on July 14, 2020. No big sand tiger beetles were observed. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 17)

255. The bog copper, a state-listed Species of Special Concern, is a small butterfly that is restricted to acid fens and bogs where it feeds on nectar from host cranberry species. Fen or bog habitats are not present on the project site, and cranberry species were not observed. Thus, surveys were not conducted for the bog copper because it is very unlikely to occur within the project site. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 16-17)

256. The eastern pearlshell mussel, a state-listed Species of Special Concern, is often found in streams and small rivers that support trout or salmon populations. During a survey, brown trout and fallfish were identified in Ketch Brook; thus, Ketch Brook is considered cold water habitat for the eastern pearlshell. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 18)

257. GPS proposes a mitigation plan to protect the eastern pearlshell. Such mitigation measures include, but are not limited to, the following:

a) Avoid work within Ketch Brook;
b) Utilize undisturbed buffers to terrace escarpments and largely avoid work within 200 feet of the stream;
c) Utilize horizontal directional drilling for the electrical interconnection that would pass under Ketch Brook with jacking and receiving pits in uplands;
d) Seek to curb illicit ATV operation via fencing and other barriers;
e) Establish grass meadows to significantly reduce existing soil erosion in proximity to Ketch Brook;
f) Reduce inputs of nutrients include total ammonia nitrogen, fungicides and pesticides associated with tobacco farming;
g) Utilize stormwater management to maintain or reducing peak discharge rates;
h) Implement erosion and sedimentation control measures;
i) Have on-site environmental inspector(s);
j) Stockpile soils are least 100 feet from wetlands and watercourses;
k) Properly store chemicals and fuels;
l) Increase the length of anti-tracking construction entrances; and
m) utilize water for dust control.

(Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 18-19)

258. The scribbled sallow moth, a state-listed Species of Special Concern, is associated with infertile, droughty, open habitats such as those found within the Eversource ROW and open roadsides where its larval host plant, Canada Toadflax is found. A survey was performed for the Canada Toadflax in June and July 2020. Some small stations were encountered at the field edges and on gravel pit spoil piles, but none of these populations numbered more than 15 to 30 plants. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 17)

259. No conservation strategy is proposed for the scribbled sallow moth. The small clusters of the host plant are common, but they are scattered around the edges of farm fields. GPS will discuss a mitigation plan with DEEP which might incorporate attempts to establish this annual/biennial host plant into perimeter seed mixes where conditions are suitable. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 17)

Plants

260. Climbing fern, a state-listed Species of Special Concern, is a wintergreen low climber that entwines itself over other plants. This species is often found in the transition between wetlands and uplands. Wetland delineations were conducted in the winter and early spring during leaf-off conditions when this species is most conspicuous. Additional surveys were conducted from early March to April 2020 within the floodplain of Ketch Brook, the Eversource ROW, edges of the railroad clearing, and within woodlands (focusing on edges). This species was not observed. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 22)

261. Dwarf huckleberry, a state-listed Threatened Species, inhabits bogs, wet peats, acidic fens, and heathlands. All of these habitats share a common substrate of sphagnum moss. Surveys were not conducted for the dwarf huckleberry because suitable habitat is not present with the project site. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 21)

262. Short-awned meadow foxtail, a state-listed Threatened Species, utilizes wet meadows, ditches, shorelines, wet sand of borrow pits, and other disturbed places as habitat. Reconnaissance of potentially suitable areas began in late May 2020 and was concluded on July 14, 2020. The short-awned meadow foxtail was not observed at the site. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 20)

263. Purple milkweed, a state-listed Species of Special Concern, is found in habitats that range from semi-open margins of woodlands, roadsides, utility corridors, and old fields ranging from dry to moist with a preference for soils with calcareous plant materials. Surveys for the purple milkweed were performed at woodland edges around fields, the Eversource ROW, and along the railroad grade during May, June and July 2020. The purple milkweed was not observed at the site. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 20)

Fish

264. The American brook lamprey, a state-listed Endangered Species, prefers cold, clear streams of small to medium size. GPS did not perform an aquatic survey of Ketch Brook as no direct or proximate impacts to this resource are proposed. Notwithstanding, the eastern pearlshell mitigation plan includes measures to protect Ketch Brook; thus, it would also be protective of the American brook lamprey. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 18-20)

Birds

265. GPS performed breeding bird surveys were performed on April 28, 2020; May 4, 2020; May 21, 2020; June 2, 2020; and July 14, 2020. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 9)

266. The American kestrel is a state-listed Species of Special Concern. A pair of American kestrels was observed south of Plantation Road, and a second pair was hunting over the southern gravel pit and off-site closed landfills. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 9-10)

267. The red-headed woodpecker, a state-listed Endangered Species, prefers deciduous woodlands with snags, recent clearings, beaver swamps, farmland, grasslands with scattered trees, forest edges, and roadsides. The forested interiors and edges where snags are present at the site provide potentially suitable nesting habitat for the red-headed woodpecker. Notwithstanding, the red-headed woodpecker was not observed during the surveys. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 9-10)

268. The Savannah sparrow, a state-listed Species of Special Concern, prefers grassy fields with low densities of shrubs and trees. Savannah sparrows nest on the ground, and the reclaimed portions of gravel pits undergoing revegetation and the capped landfills proximate to the site provide marginally suitable habitat for breeding. The Savannah sparrow was not observed during the surveys. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 9-10)

269. The sharp-shinned hawk, a state-listed Endangered Species, prefers forest and forest edges, and it requires dense forest with closed canopy for breeding. The forested interiors and edges where snags are present at the site provide potentially suitable nesting habitat for the sharp-shinned hawk. However, the sharp-shinned hawk was not observed during the surveys. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 9-10)

270. The short-eared owl, a state-listed Threatened Species, prefers deciduous woodlands with snags, recent clearings, beaver swamps, farmland, grasslands with scattered trees, forest edges, and roadsides. Although the project site supports some habitat types that may be suitable for the short-eared owl, the short-eared owl was not observed during the surveys. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 9-11)

271. To avoid potential disturbance to birds during the breeding season, GPS proposes the following:

a) If construction activities are to occur during the nesting period between early May through mid-August, vegetation removal work should be cleared before May 1st and after August 1st; and
b) Up to five nest boxes would be installed for the American kestrel outside the fenced perimeter of the solar arrays along the project site. The final locations of the boxes would be determined in consultation with DEEP.

(Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 18-20)

Mammals

Bats

272. The northern long-eared bat (NLEB), a federally-listed Threatened Species and state-listed Endangered Species, is known to occur at the proposed site. There are no known NLEB hibernacula within East Windsor, and there are no known maternity roost trees in Connecticut. Notwithstanding, in the absence of a bat survey, GPS will assume that the species is present at the site as a precaution. GPS will follow the guidance provided by the U.S. Fish & Wildlife Service Final 4(d) Rule. Specifically, no tree clearing would be performed during the June and July NLEB pup season. If any NLEB are encountered during tree clearing outside of that window, GPS would stop such clearing immediately and contact DEEP Wildlife Division to determine the proper next steps. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, p. 21; Council Administrative Notice Item No. 56 – 2015 DEEP Endangered, Threatened and Special Concern Species)

Reptiles

Turtles

273. The wood turtle, a state-listed Species of Special concern, requires riparian habitats bordered by floodplain, woodland or meadow. A wood turtle survey was performed on May 5, 2020 and June 2, 2020. No further surveys are planned; notwithstanding, as a precaution, GPS will assume that the wood turtle is present at the site. (Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 13-14)

274. GPS proposes a mitigation plan to protect the wood turtle. Such mitigation measures include, but are not limited to, the following:

a) Avoid work within Ketch Brook and its riparian floodplain;
b) Utilize undisturbed buffers to terrace escarpments and largely avoid work within 90 meters of the stream;
c) Utilize horizontal directional drilling for the electrical interconnection that would pass under Ketch Brook with jacking and receiving pits in uplands;
d) Create and maintain cleared areas outside of the fenced solar arrays in early successional habitat potentially suitable for turtle foraging and nesting, and avoid mowing these areas between April 30 and November 1;
e) Utilize a wildlife gap under fencing to allow turtles to pass through grassed solar array areas;
f) Seek to curb illicit ATV operation via fencing and other barriers;
g) Utilize stormwater management to maintain or reducing peak discharge rates;
h) Utilize entrenched silt fence of at least 20 inches tall to isolate any work area within 0.2 miles of Ketch Brook between April 1 through November 1;
i) Maintain the entrenched silt fence;
j) Search work areas within 0.2 mile of Ketch Brook each morning prior to commencing work; and
k) Train construction personnel regarding the wood turtle.

(Applicant 1, Tab I, Wildlife Memorandum dated May 20, 2020 and updated July 20, 2020, pp. 13-14)

Amphibians

Vernal Pool Species

275. Vernal pool indicator species in Connecticut include wood frog, spotted salamander, marbled salamander, Jefferson salamander complex, blue-spotted salamander complex, and pure-diploid blue-spotted salamanders. (Council Administrative Notice Item No. 47 – Petition No. 1310A, Finding of Fact #331; Applicant 1, Tab K, Vernal Pool Survey Report, p. 2)

276. Vernal pool surveys were conducted by VHB during March 13, 2020; March 24, 2020; March 26, 2020; April 7, 2020; and May 6, 2020. Six vernal pools (VP) were identified at the proposed site. (Applicant 1, p. 36 and Tab K, Vernal Pool Survey Report, pp. 2-3)

277. Obligate species identified within the pools included adult wood frogs, wood frog egg masses, wood frog larvae, spotted salamander egg masses, and fairy shrimp. None of these identified obligate species are state-listed threatened, endangered or special-concern species. (Applicant 1, Tab K, Vernal Pool Survey Report, p. 3; Council Administrative Notice Item No. 56 – 2015 DEEP Endangered, Threatened and Special Concern Species)

Geology

278. A Geotechnical Engineering Report (Geotech Report) dated April 13, 2020 was prepared including the results of 135 test pit excavations, 35 test borings and 4 electrical resistivity tests. (Applicant 1, Tab J, Geotech Report, p. 2)

279. Test borings performed within existing farm fields found about 0.7 to 6 feet of topsoil/subsoil at the ground surface that generally consisted of silt with up to 50 percent fine sand or fine sand with up to 35 percent silt. (Applicant 1, Tab J, Geotech Report, p. 4)

280. Test borings performed within existing farm fields also found naturally-deposited alluvial deposits below the topsoil/subsoil and/or fill at each of the test boring locations. The alluvial deposits generally consisted of either fine to medium sand with 0 to 50 percent gravel and up to 35 percent silt. (Applicant 1, Tab J, Geotech Report, p. 5)

281. Test pits within woodland areas found topsoil/subsoil ranging from about 0.5 to 3 feet thick and generally consisting of silt with up to 50 percent fine sand or fine sand with up to 20 percent silt. (Applicant 1, Tab J, Geotech Report, p. 5)

282. Test pits within woodland areas also generally found naturally-deposited alluvial deposits below the topsoil/subsoil. The alluvial deposits generally consisted of either fine to medium sand with 0 to 50 percent gravel and up to 20 percent silt or fine sand with up to 35 percent silt. (Applicant 1, Tab J, Geotech Report, p. 5)

283. Test pits within the active gravel pit area found topsoil/subsoil about 0.5 feet thick in two of the test pit locations. The topsoil/subsoil generally consisted of silt with up to 50 percent fine sand or fine sand with up to 20 percent silt. Fill was encountered in seven of the test pits and generally consisted of silty sand with up to 35 percent gravel and less than 10 percent asphalt, brick, rebar, concrete, wires, and plastic. (Applicant 1, Tab J, Geotech Report, p. 5)

284. Test pits within the active gravel pit area generally found naturally-deposited alluvial deposits below the topsoil/subsoil and fill. The alluvial deposits generally consisted of either fine to medium sand with 0 to 50 percent gravel and up to 20 percent silt or fine sand with up to 25 percent silt. (Applicant 1, Tab J, Geotech Report, p. 6)

285. The measured depth of groundwater ranged from 11 to 16.3 feet. Fluctuations in groundwater levels may occur due to variations in season, rainfall, site features and other factors. (Applicant 1, Tab J, Geotech Report, p. 2)

286. The solar racking support posts would reach an embedded depth of about 9 to 10 feet, and excavations for conduits entering equipment pad areas are typically about 3 feet below finished grade. (Applicant 1, Tab J, Geotech Report, p. 10; Applicant 6, response 53)

Agriculture

287. The statutory mission of the Governor's Council for Agricultural Development (GCAD) is to develop a statewide plan for Connecticut agriculture. In 2012, GCAD recommended DOAg create an agriculture-friendly energy policy that includes, but is not limited to, on-farm energy production to reduce costs and supplement farm income, agricultural net metering for power production and transmission, and qualification of agricultural anaerobic digestion projects for zero-emissions renewable energy credits (ZRECs). (Council Administrative Notice Item No. 47 – Petition No. 1310A, Finding of Fact #345)

288. Agriculture in Connecticut is likely to be adversely impacted by climate change. It is most affected by changes in temperature and both the abundance and lack of precipitation. The top five most imperiled agricultural products are maple syrup, dairy, warm weather produce, shellfish and apple and pear production, but there are opportunities for production expansion with the future climate, including, but not limited to, biofuel crops, witch hazel and grapes. (Council Administrative Notice Item No. 67 – Climate Change Preparedness Plan)

289. Adaptation strategies for climate change impacts to agriculture include promotion of policies to reduce energy use, conserve water and encourage sustainability. (Council Administrative Notice Item No. 67 – Climate Change Preparedness Plan)

290. Pursuant to CGS §22-26aa, *et seq.,* DOAg administers the Statewide Program for the Preservation of Agricultural Land (SPPAL) The main objective of the voluntary program is to establish a land resource base consisting mainly of prime and important farmland soils. A permanent restriction on non-agricultural uses is placed on the deed of participating properties, but the farms remain in private ownership and continue to pay local property taxes. (CGS §22-26aa, et seq.)

291. DOAg has not purchased any development rights for the proposed site or any portion of the proposed site as part of the SPPAL. (Applicant 6, response 10)

292. Public Act 490 is Connecticut's Land Use Value Assessment Law for Farm Land, Forest Land and Open Space Land that allows land to be assessed at its use value rather than its fair market or highest and best use value for purposes of local property taxation. Parcels 016-49-007, 16-50-001, 025-49-017A, 025-49-017C, and 037-65-005A are classified and recorded as "farm" and "forest land" under Public Act 490. (Council Administrative Notice Item No. 47 – Petition No. 1310A, Finding of Fact #351; Applicant 6, response 9)

293. The proposed project would not qualify under Connecticut's Agricultural Virtual Net Metering Program because an agricultural virtual net metering facility is defined under CGS §16-244u(a)(7)(B) as having a nameplate capacity rating of 3 MW or less. (CGS §16-244u(a)(7)(B))

294. Prime Farmland Soils are defined by the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS) as having the ideal combination of chemical and physical characteristics to support crop production, such as for food, feed, forage, fiber and oil seed crops. These soils are also considered important for pasture land, range land and forest land. (Council Administrative Notice Item No. 47 – Petition 1310A, Finding of Fact #353)

295. GPS estimates that the proposed project solar facility footprint would occupy a total of roughly 227 acres of mapped Prime Farmland Soils currently and primarily used to grow tobacco. (Applicant 1, Tab A, Farmland Soils Map; Applicant 1, p. 11; Applicant 6, response 11)

296. GPS has provided its Agricultural Soil Protection Plan (ASPP) which includes, but is not limited to, the following components:

a) Conduct baseline inventory sampling and analysis prior to commencement of construction;
b) Develop the facility without modifying grades within existing farm fields to the extent practicable;
c) Utilize existing farm access road where possible;
d) Utilize a new access road design that would be useful for future farming needs;
e) Utilize routine traffic patterns during construction to avoid crossing farmland soils unless necessary;
f) Utilize lower ground pressure tracked equipment and farm carts to haul construction materials across fields;
g) Operate track-mounted pile drivers to disperse vibrations that could cause compactions;
h) Limit construction equipment travel in agricultural fields under saturated soil conditions;
i) Utilize perimeter roads to avoid crossing agricultural fields with heavy equipment;
j) Plant cover crops and perennial vegetation to promote development of soil structure and reduce potential for compaction;
k) Apply soil amendments using principles of nutrient management to ensure that surface and groundwater resources are protected from nutrient degradation;
l) Separate topsoil form subsoil and substrata when trenches need to be installed across farmland, and replace topsoil at the top of the trench;
m) Utilize temporary erosion controls during construction;
n) Establish and maintain temporary and permanent vegetative cover to promote soil health and minimize erosional losses;
o) Apply soil amendments at agronomic rates based on soil tests and plant growth;
p) Perform seeding in accordance with the 2002 E&S Guidelines;
q) Maintain soil nutrient status during operation of the facility;
r) Separately windrow the topsoil along trenches separate from subsoil/substrate stockpiles;
s) Manage topsoil on-site to promote continued viability where the topsoil is not returned to the constructed areas;
t) After decommissioning, perform soil strength measurements with a soil penetrometer, perform soil compaction tests, perform decompaction, and bring oversized stone/rock material to the surface to be removed; and
u) Perform final soil testing for the macronutrients of nitrogen, phosphorus, potassium and the pH and organic matter content.

(Applicant 1, Tab T, ASPP)

297. In its comments dated November 4, 2020, DOAg opposes the project and notes that it would adversely impact the status of prime farmland because after decommissioning, soil productivity would be compromised and require restoration. (DOAg comments dated November 4, 2020)

298. GPS' consultant, Duraroot, performed soil compaction testing on approximately 148 acres of GPS' Tobacco Valley Solar Project (TVSP) in Simsbury. Two dominant soil types exist at the TVSP site: Merrimac Series (Inceptisol) and Hinckley Series (Entisol). Duraroot found no statistically significant differences between the disturbed Inceptisol soils within array areas versus soils unimpacted by solar construction. While significant differences were observed within the Entisol soil at depths greater than six inches, and data indicate that Entisol soils may be more prone to compaction during construction, methods exist to limit compaction and maintain original soil infiltration and percolation rates both during and after construction on Entisol soils. (Applicant 8)

299. The Inceptisol soil is the dominant soil type at GPS' proposed site. Based on the data from TVSP, GPS notes that construction would not likely result in soil compaction. Soil compaction and subsequent change in hydrologic group would not be anticipated based on soil physical properties and the proposed reclamation plans. (Applicant 8)

300. GPS believes that the soil health/quality during the life of the project would increase because the data show that implementation of a grassland feature can increase soil organic matter, decrease nutrient leaching, and decrease sediment runoff. Additionally, the proposed project would add value to surrounding agricultural areas due to high populations of beneficial insects, predatory insects, and songbirds. Even absent corn/soybean/tobacco production, GPS believes that it would increase the production of the surrounding area. (Tr. 1, pp. 47-49)

301. GPS will continue to evaluate the possibility of agricultural co-uses, such as sheep grazing, at the site, but it has not made a final decision at this time. (Tr. 1, p. 50)

302. GPS met with DOAg in July and September 2020 and intends to continue discussions with DOAg to look at ways in which discrete mitigation practices can be further incorporated into the project. (Tr. 1, p. 47; Tr. 2, p. 170)

Pollinator Habitat

303. Although applicable only to electric transmission line ROWs, CGS §16-50hh permits the Council to consider post-construction site restoration or revegetation that includes the establishment of model pollinator habitat. (CGS §16-50hh)

304. GPS' proposed Visual Mitigation Plan would include a pollinator meadow that includes wildflower pollinators mixed with native grasses. (Applicant 1, Tab G, Visibility Assessment, Section 8)

Forest and Parks

305. No state forests or parks are located within or proximate to the proposed project site. (Applicant 1, p. 52)

306. No core forest is located within or proximate to the proposed project site. (Applicant 1, p. 52)

Electric and Magnetic Fields

307. Electric fields (EF) and magnetic fields (MF) are two forms of energy that surround an electrical device. Transmission lines, for example, are a source of both EF and MF. (Council Administrative Notice Item No. 41 – Council's Best Management Practices for the Construction of Electric Transmission Lines in Connecticut)

308. EF is produced whenever voltage is applied to electrical conductors and equipment. Electric fields are typically measured in units of kilovolts/meter. As the weight of scientific evidence indicates that exposure to electric fields, beyond levels traditionally established for safety, does not cause adverse health effects, and as safety concerns for electric fields are sufficiently addressed by adherence to the NESC, as amended, health concerns regarding Electric and Magnetic Fields (EMF) focus on MF rather than EF. (Council Administrative Notice Item No. 41)

309. MF is produced by the flow of electric currents. The magnetic field at any point depends on the characteristics of the source, the arrangement of conductors, the amount of current flow through the source, and the distance between the source and the point of measurement. Magnetic fields are typically measured in units of milligauss (mG). (Council Administrative Notice Item No. 41)

310. International health and safety agencies, including the World Health Organization, the International Agency for Research on Cancer (IARC), and the International Commission on Non-Ionizing Radiation Protection (ICNIRP), have studied the scientific evidence regarding possible health effects from MF produced by non-ionizing, low-frequency 60-Hertz alternating currents in transmission lines. Two of these agencies attempted to advise on quantitative guidelines for mG limits protective of health, but were able to do so only by extrapolation from research not directly related to health: by this method, the maximum exposure advised by the International Commission on Electromagnetic Safety (ICES, part of IARC) is 9,040 mG, and the maximum exposure advised by the ICNIRP is 2,000 mG. Otherwise, no quantitative exposure standards based on demonstrated health effects have been set world-wide for 60-Hertz MF, nor are there any such state or federal standards in the U.S. (Council Administrative Notice Item No. 41)

311. ICNIRP limits for general public exposure to 60 Hz electric fields is 4.2 kV/m. ICES limits for general public exposure to 60 Hz electric fields is 5 kV/m.*

*Within power line ROWs, the guideline is 10 kV/m.

(Applicant 2, Report on Electric and Magnetic Fields, p. 9)

312. The EMF from the proposed solar panels, substation and switchyard equipment and power inverters would not appreciably change the EMF levels outside of the proposed site boundary, including the nearest residence located over 150 feet from the site boundary. Thus, the sources of EMF that could potentially affect field levels at the boundaries of the site include the 115-kV transmission lines and the proposed underground 34.5-kV collector lines. (Applicant 2, Report on Electric and Magnetic Fields, p. 7)

313. The proposed project would be consistent with the Council's EMF Best Management Practices for the Construction of Electric Transmission Lines in Connecticut for no cost/low cost design due to the following factors:

a) The proposed solar arrays and related equipment would have negligible off-site EMF;
b) The proposed project would be constructed adjacent to, and tap into, an existing 115-kV transmission line. No new transmission line would need to be constructed to serve the solar facility; and
c) The proposed connections to existing transmission is not expected to have any effect on EMF levels at the nearest residences.

(Applicant 2, Report on Electric and Magnetic Fields, p. 16)

314. For the purpose of EMF analyses, Location XS-1 is cross-section of the existing Eversource ROW and is located west of the existing rail line. Location XS-2 is a cross-section of the Eversource ROW and is located near the eastern limits of the project area. Location XS-3 is a cross-section of a 34.5-kV collector line that crosses Plantation Road. Location XS-4 is a cross-section of the 34.5-kV collector line that crosses Ketch Brook and the rail line. See attached Figure 9. (Applicant 2, Report on Electric and Magnetic Fields, pp. 2, 14-15)

315. MF levels for the 115-kV transmission for Locations XS-1 and XS-2 would increase from a pre-project level of 7.3 mG to a post-project level of 16 mG based on average load conditions and located at the southern edge of the ROW closest to the solar facility. (Applicant 2, Report on Electric and Magnetic Fields, pp. 14-15 and B-2)

316. MF levels for the 34.5-kV collector lines for Locations XS-3 and XS-4 would reach 4.2 mG and 11 mG, respectively, based on average load conditions and directly above the underground duct banks. Such levels would decline rapidly with distance to about 1.3 mG and 3.2 mG, respectively, a distance of 10 feet from the duct banks. (Applicant 2, Report on Electric and Magnetic Fields, pp. 14-15 and B-2)

Costs

317. Power pooling, such as in New England, allows for the economies of scale and scope for power plants. A larger power plant typically leads to a lower dollar per MW cost to build the power plant. (Council Administrative Notice Item No. 46 – Docket No. 470B, Finding of Fact # 75)

318. The total estimated cost of the proposed project as listed is $125M, including the substation and switchyard. If the project included only fixed solar panels, the total cost is estimated at $121.5M. (Tr. 1, pp. 38, 85)

Neighborhood Concerns

319. Under CGS § 16-50p, the Council is not obligated to take into account the status of property values. (CGS §16-50p; Tr. 4, pp. 6-7; *Westport v. Conn. Siting Council*, 47 Conn. Supp. 382 (2001), *affirmed,* 260 Conn. 266 (2002); *Goldfisher v. Conn. Siting Council*, 2005 Conn. Super. LEXIS 306 (2005), *affirmed,* 95 Conn. App. 193 (2006))

320. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public comment session via Zoom conferencing on Thursday, November 12, 2020 at 6:30 p.m. (Council's Hearing Notice dated September 29, 2020; Tr. 2)

321. First Selectman Bowsza and two members of the public provided oral statements during the Council's public comment session in support of the proposed project. (Tr. 2, pp. 147-152)

322. The Council received 3 written limited appearance statements regarding the proposed facility. (Record)

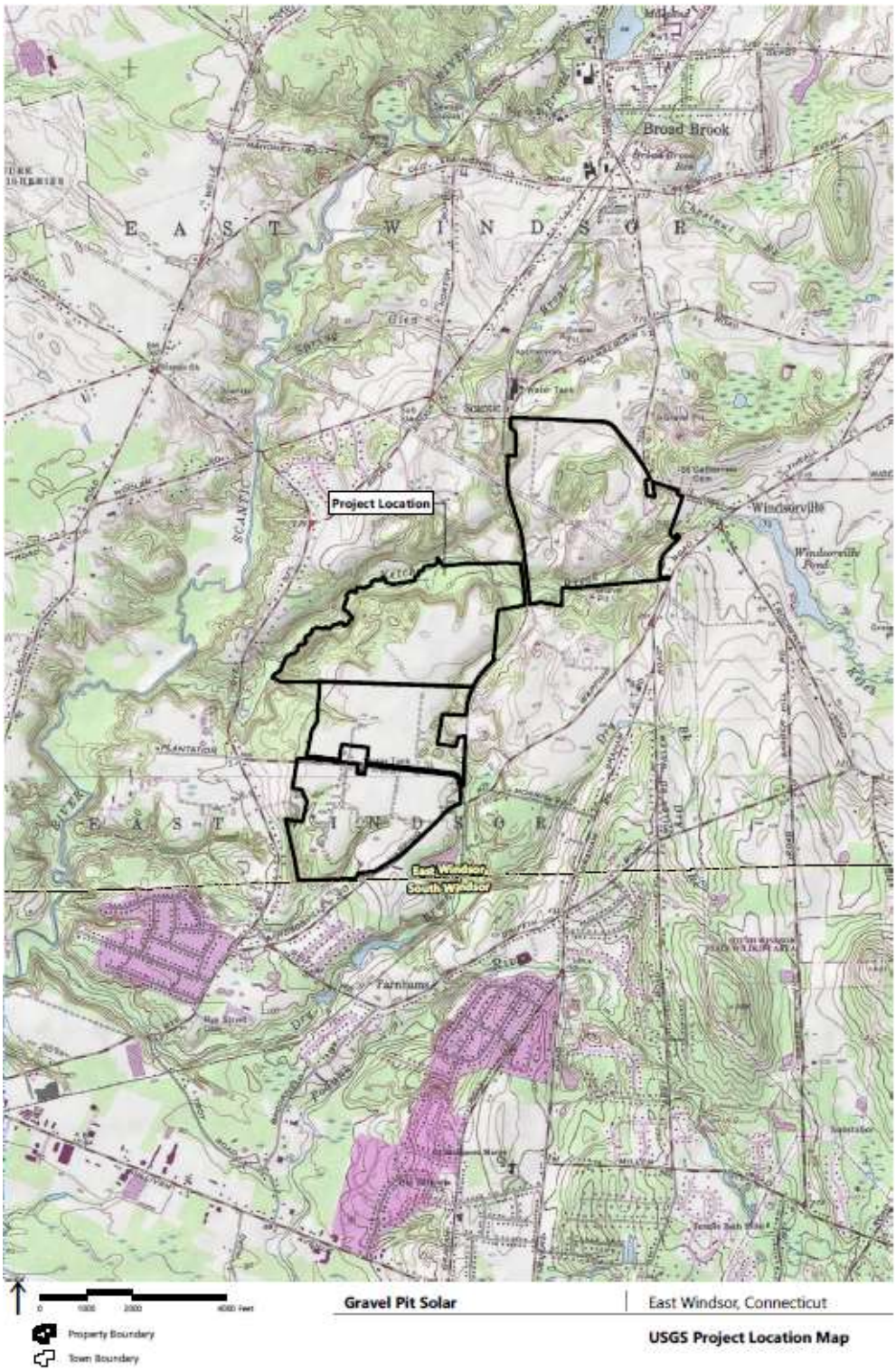
323. GPS received feedback from abutters regarding aesthetics associated with the entrance points to the proposed facility. In response to such feedback, GPS developed a landscaping plan for the entrance areas. (Tr. 1, pp. 30-31)

324. GPS has also received comments from the public regarding the amount of dust associated with active gravel mines. Operation of the proposed project would not create such dust accumulation. (Tr. 1, p. 31)

325. Some abutters on Apothecaries Hall Road expressed concerns to GPS regarding the location of an entrance point for the project. GPS is looking at land control at another location on Apothecaries Hall Road that is currently used as secondary access to the active gravel mine. GPS is considering relocating its entrance point to this location. If the proposed project is approved, GPS is willing to include such information, if required, in a Development and Management Plan subject to GPS finalizing the land control for such alternative entrance point. (Tr. 1, pp. 31-32)

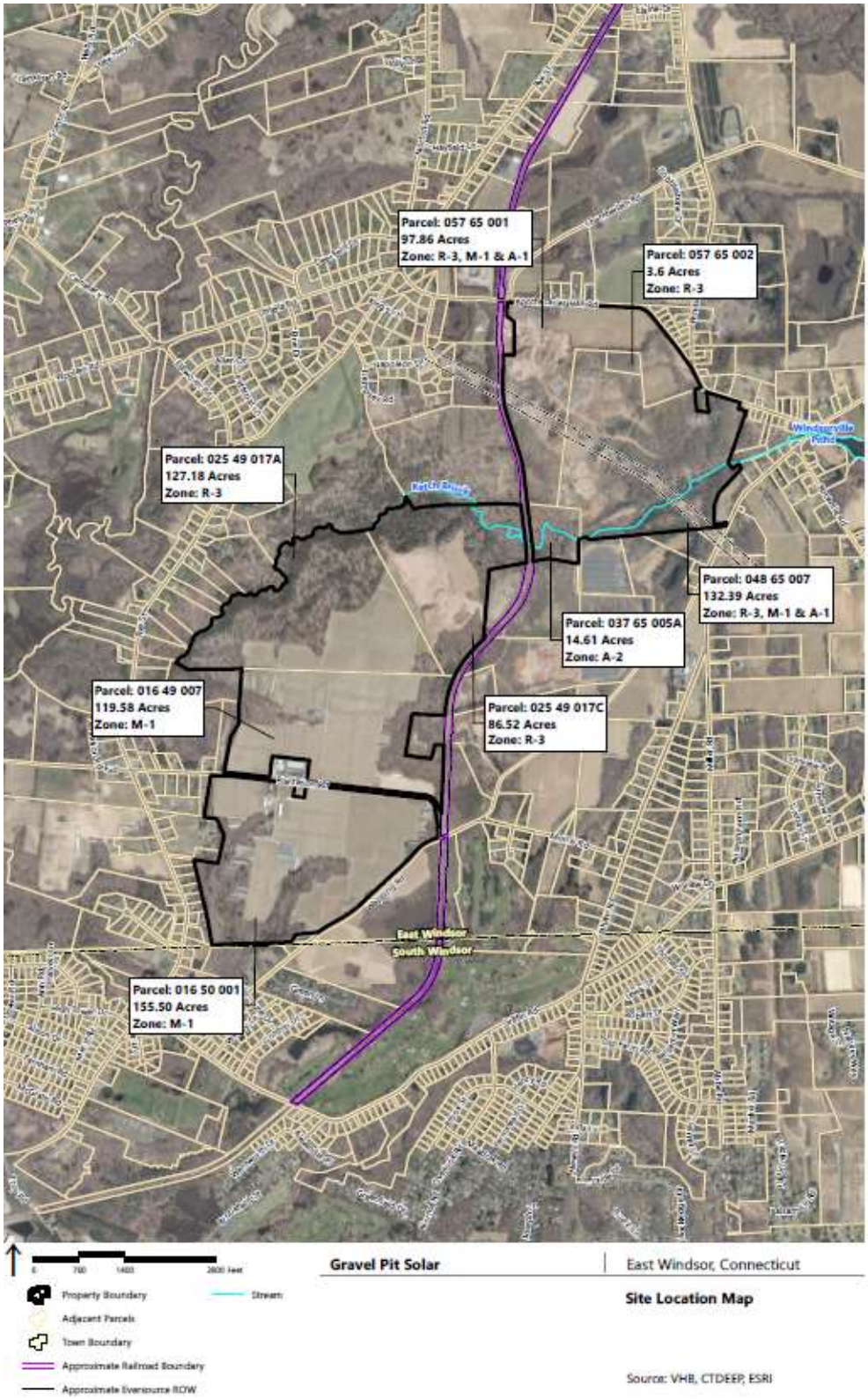
326. GPS also received a public comment regarding concerns about construction sediment entering municipal roads from entrance points. Accordingly, GPS would extend its gravel construction pad area from 50 feet long to 75 feet long. (Tr. 1, p. 31)

Figure 1 – Site Location



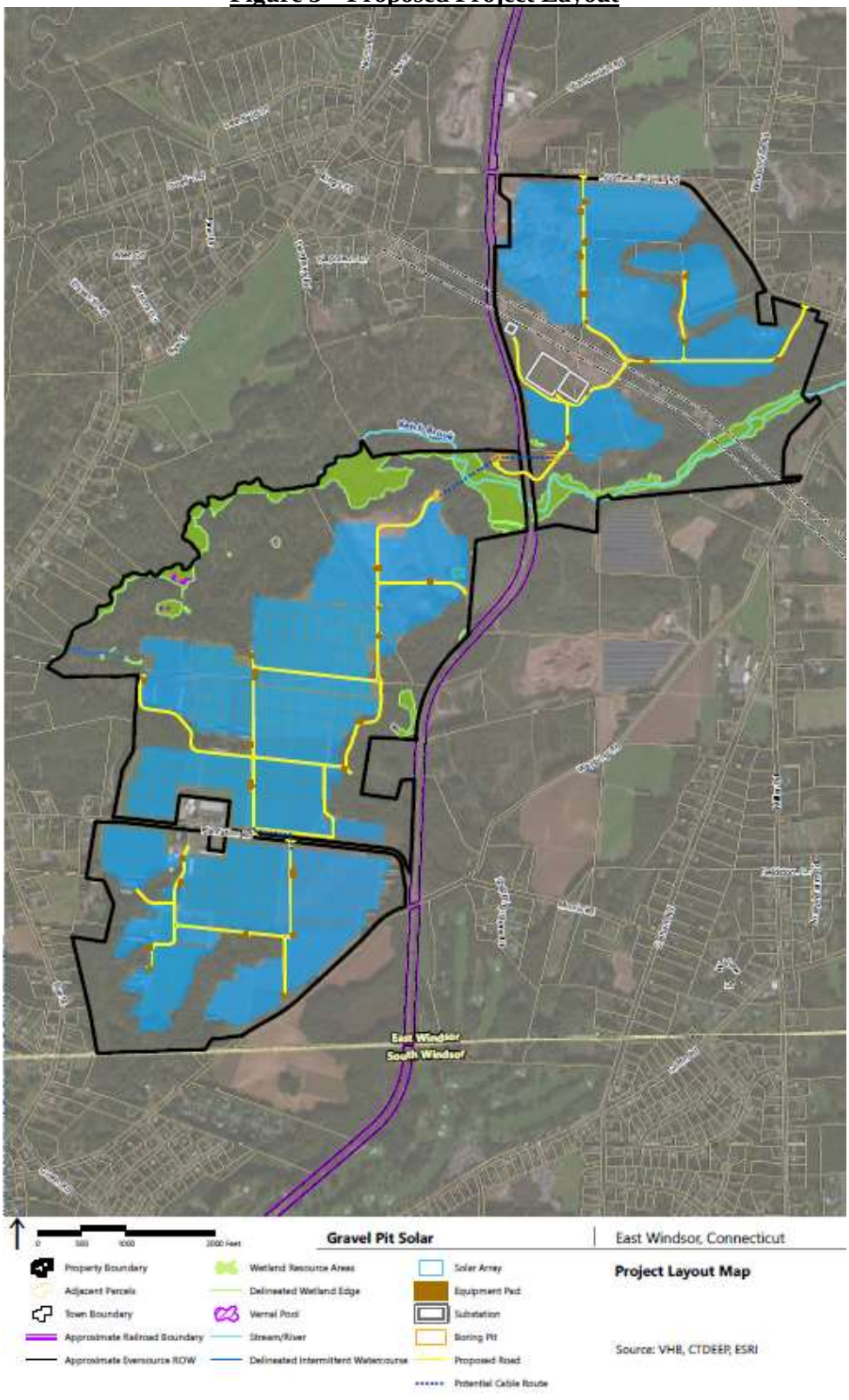
(Applicant 1, Tab A, Project Location Map)

Figure 2 – Site Zoning



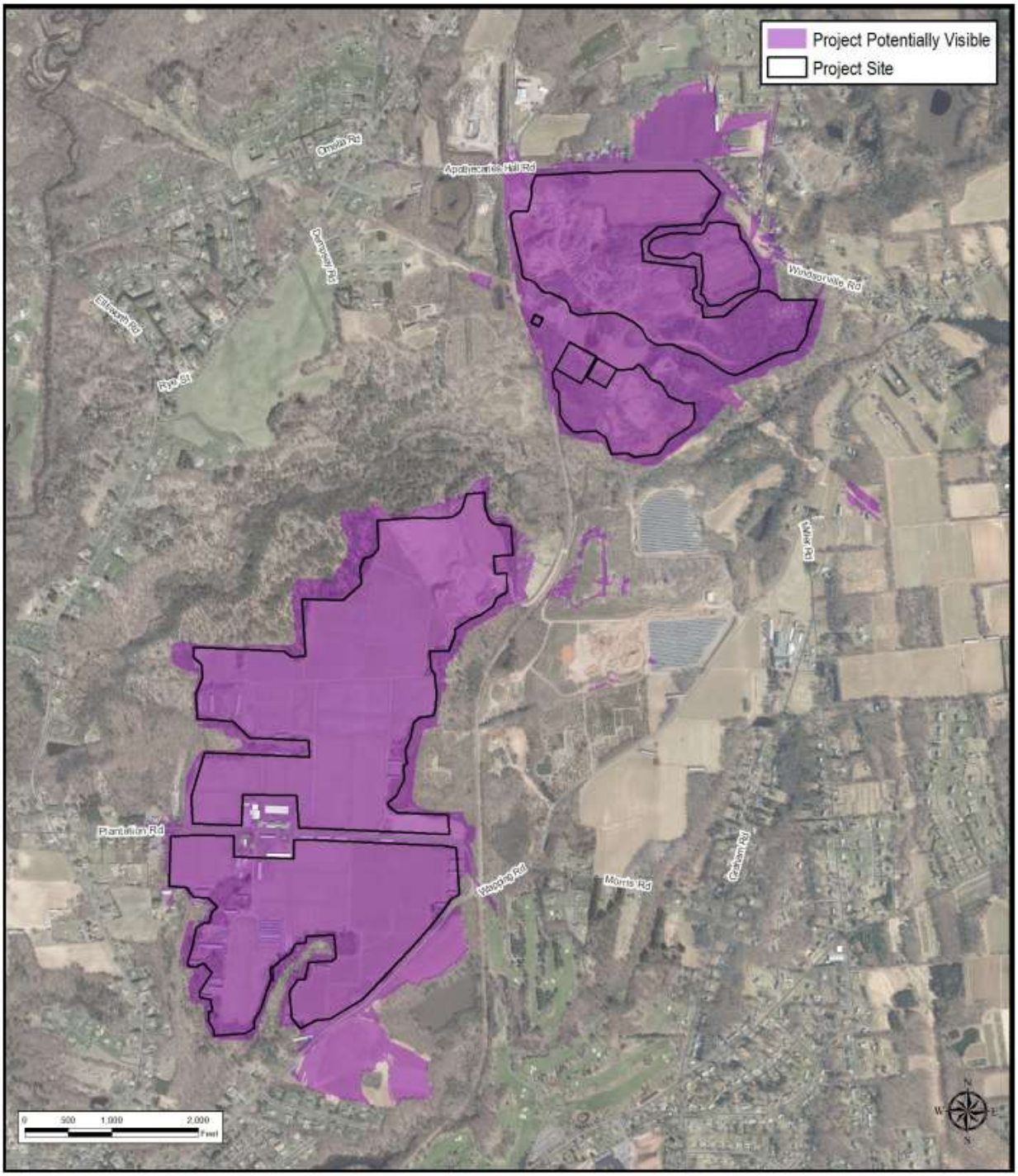
(Applicant 1, Tab A, Site Location Map)

Figure 3 – Proposed Project Layout



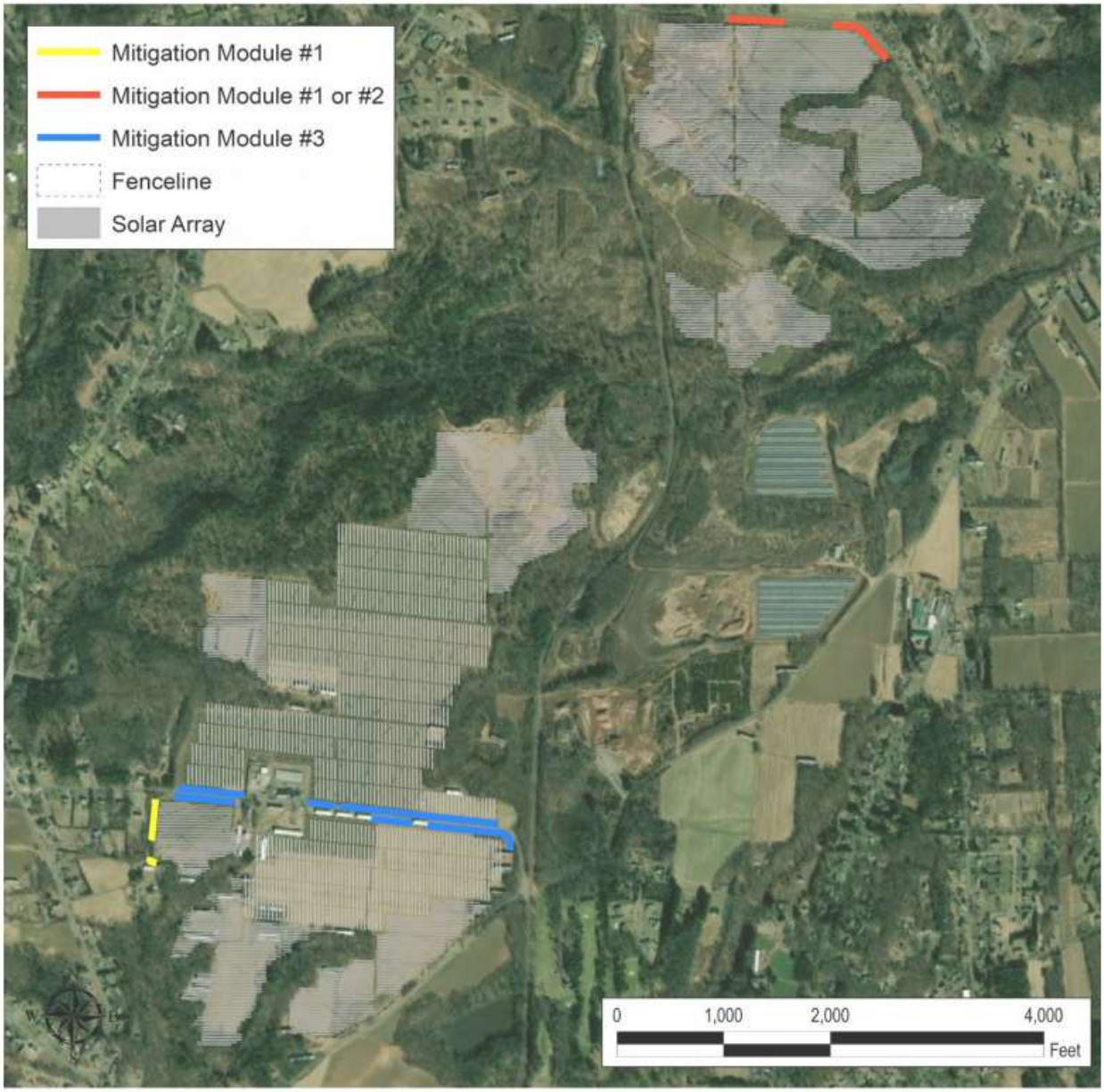
(Applicant 1, Tab A, Project Layout Map)

Figure 4 – Viewshed Map



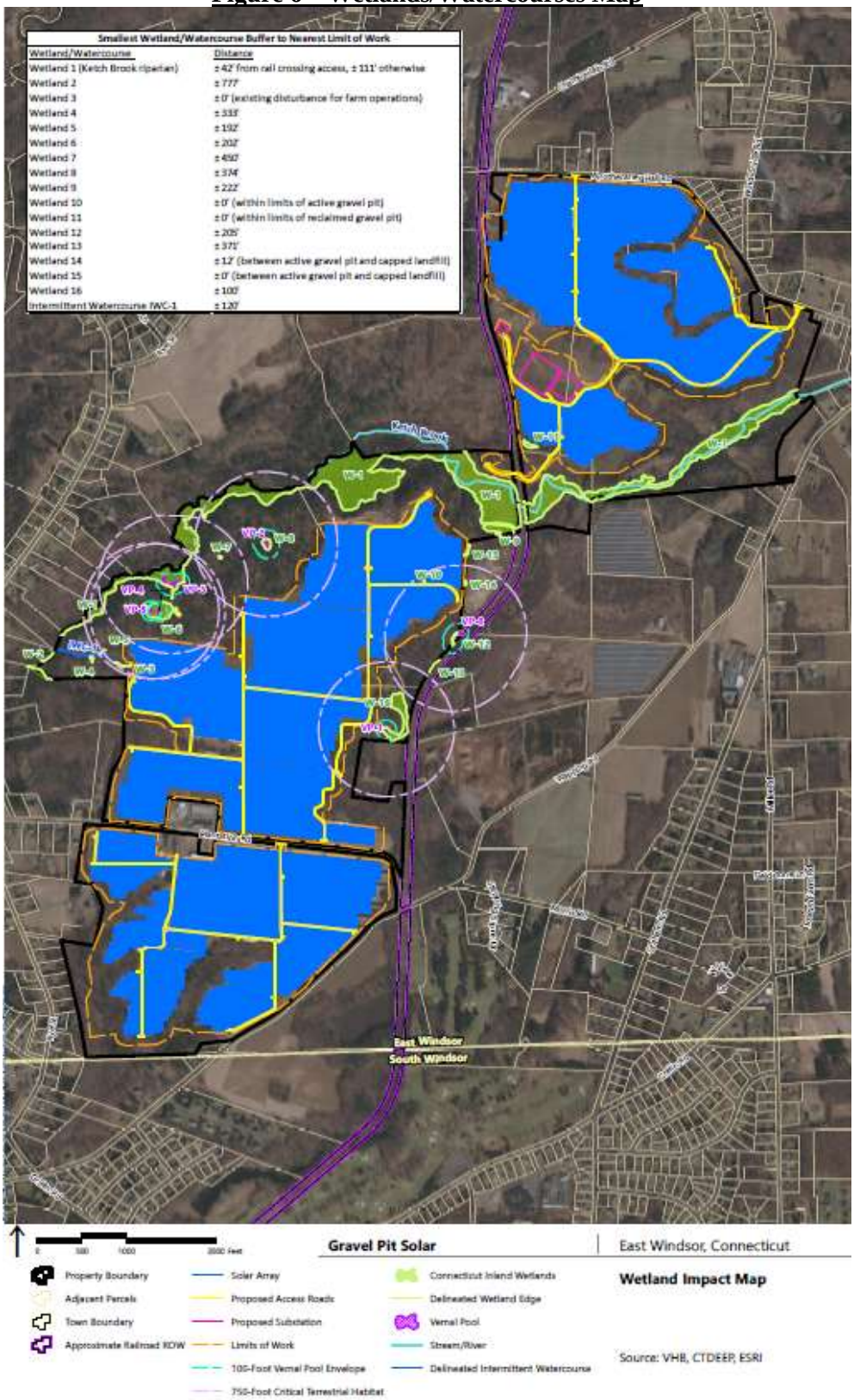
(Applicant 1, Tab G, Visibility Assessment, p. 13)

Figure 5 – Visual Mitigation Plan Module Locations



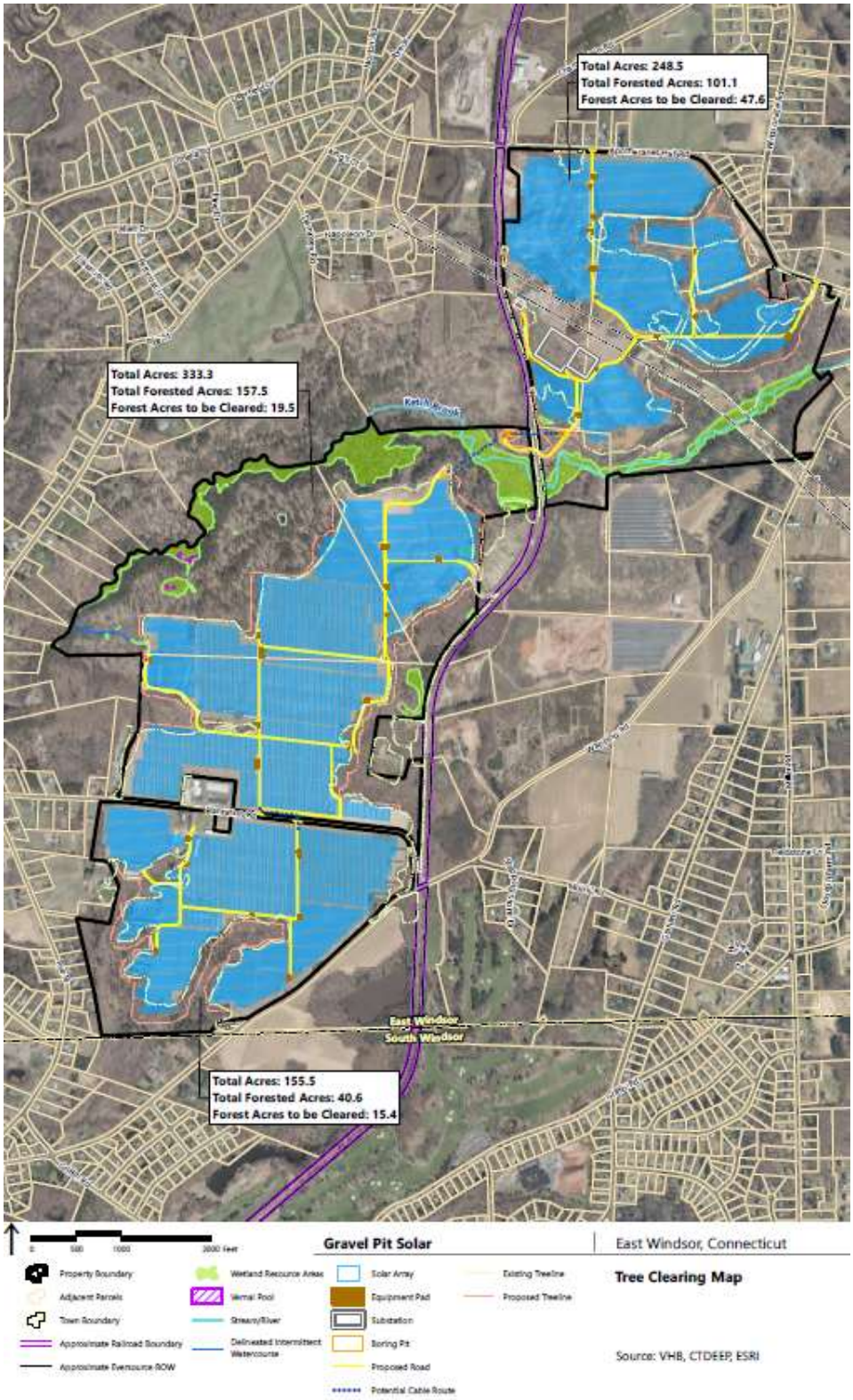
(Applicant 1, Tab G, Visibility Assessment, Appendix B)

Figure 6 – Wetlands/Watercourses Map



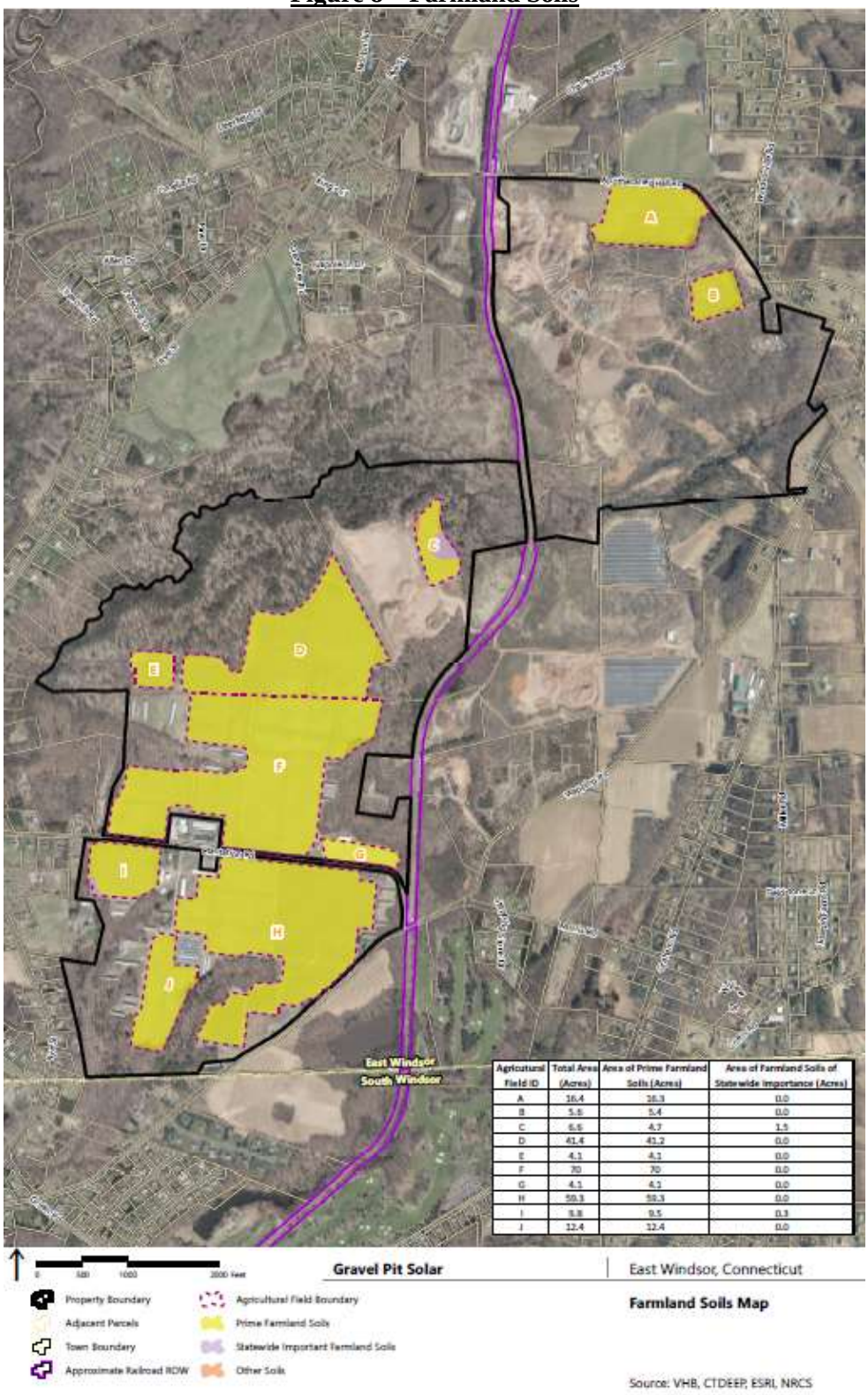
(Applicant 10, Late Field Exhibit e, Wetland Impact Map)

Figure 7 – Site Clearing



(Applicant 1, Tab A, Tree Clearing Map)

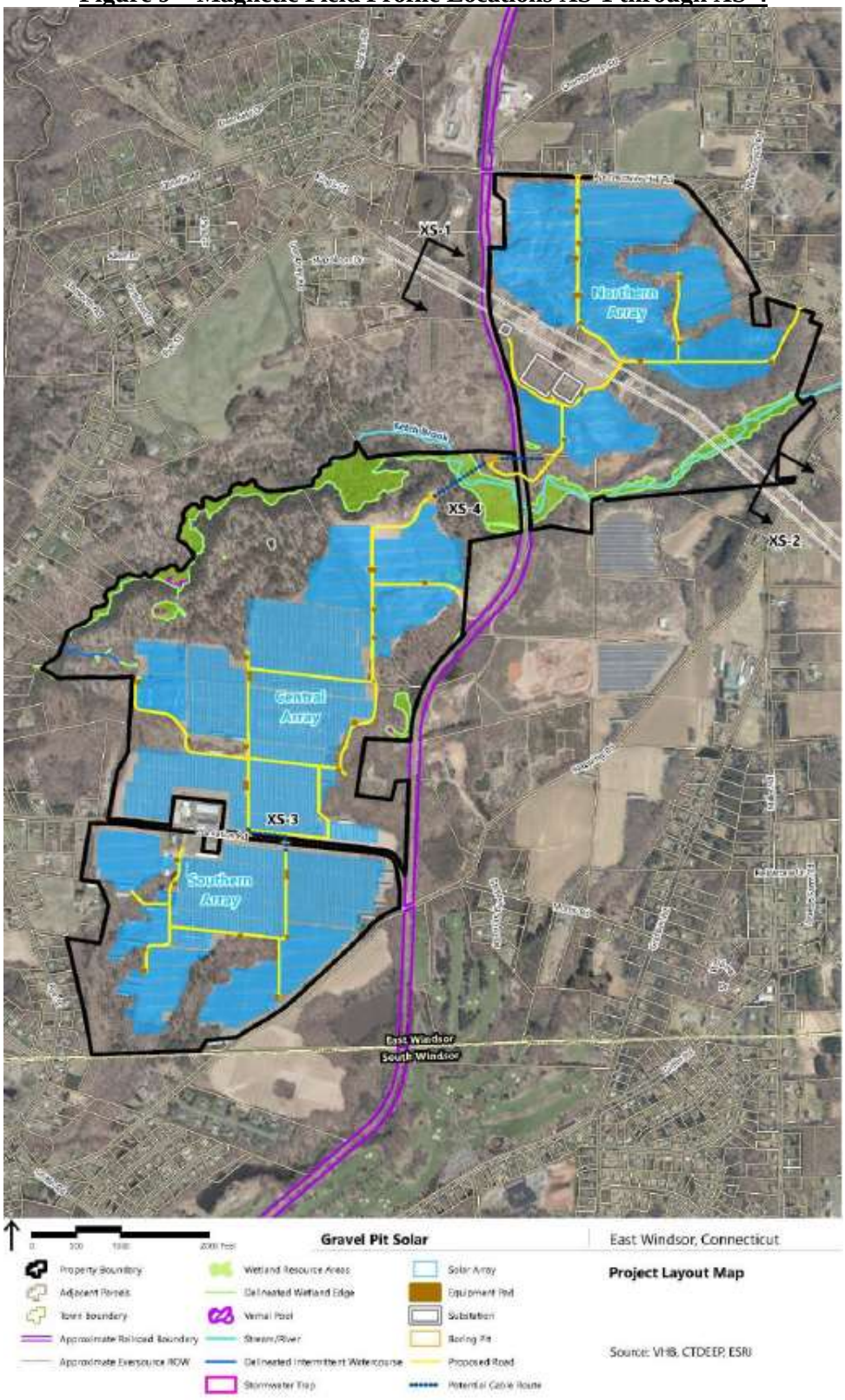
Figure 8 – Farmland Soils



Agricultural Field ID	Total Area (Acres)	Area of Prime Farmland Soils (Acres)	Area of Farmland Soils of Statewide Importance (Acres)
A	16.4	16.3	0.0
B	5.6	5.4	0.0
C	6.6	4.7	1.5
D	41.4	41.2	0.0
E	4.1	4.1	0.0
F	70	70	0.0
G	4.1	4.1	0.0
H	59.3	59.3	0.0
I	9.8	9.5	0.3
J	12.4	12.4	0.0

(Applicant 1, Tab A, Farmland Soils Map)

Figure 9 – Magnetic Field Profile Locations XS-1 through XS-4



(Applicant 2, Report on Electric and Magnetic Fields, p. 2)

Appendix B - State Agency Comments

STATE OF CONNECTICUT

COUNCIL ON ENVIRONMENTAL QUALITY

October 1, 2020

Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: DOCKET NO. 492 – Gravel Pit Solar application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 120-megawatt-AC solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection.

Dear Ms. Bachman:

The Council on Environmental Quality ("the Council") supports the development of clean, renewable energy technologies on appropriate sites in Connecticut. The Council is concerned about the scale of the statewide conversions of active, or potentially usable, farmland, which the legislature intended to be preserved when it enacted PA 17-218, for renewable energy installations. This farmland usually contains prime farmland soils, which are the soils that are "best suited to producing food, feed, forage, fiber and oilseed crops". These conversions have been most notable in the Connecticut River Valley, which is its own unique ecological area and a United States Department of Agriculture (USDA) designated resource area because of the excellent soils and microclimate[1].

Both the preservation of farmland and development of renewable energy sources are essential to the State's future. It is at the Siting Council that these priorities intersect and sometimes conflict. The Council urges the Siting Council to assess the cumulative regional economic and ecological factors when assessing the scale and location of this proposed siting. Consideration of such cumulative and regional impacts by the Siting Council is within its authority under CGS Sec. 16-50p(a).

Since June of 2020, this Council has reviewed seven proposals to utilize farmland for renewable energy projects. The total farm acreage of active or potentially usable farmland in those six Petitions and one Application is approximately 350 acres of active or potentially usable farmland. Inclusion of the all projects reviewed by this Council in the past eight months brings the total to over 540 acres of Connecticut farmland that were the target for siting of solar energy facilities. By comparison, the total acreage acquired for preservation by the State for all of 2019 was 773 acres. The continuing concentration of solar energy facilities on the tillable farmland, rather than on peripheral land, threatens the continued viability of the agricultural economy in the State.

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http://www.ct.gov/ceq

Although the Applicant is proposing an Agricultural Soil Protection Plan, in order for a solar energy installation to have no impact on the status of prime farmland soils on a site, decommissioning and restoration would have to be successful at the end of the anticipated service life of the solar panels. To the Council's knowledge, long-term soil preservation has not been attempted in Connecticut, nor has removal of the supports for the panels and the buried electrical conduits and other soil disturbances. Decommissioning and restoration is an unproven promise. At the expiration of the lease term, negotiation of a new contract to take advantage of the installed solar infrastructure is as probable as is a return to agriculture. The probability that the site will never return to farming needs to be acknowledged. It has been estimated that nearly 30 percent of the State's farmers depend on land that is leased[ii]. Loss of access to those fields can severely affect the farms and disrupt their business viability, business succession planning, and even their ability to implement nutrient management plans (where a land base is needed to apply manure at safe rates). Loss of leased fields decreases farm density, and the suppliers of services and users of products are likely to move or close. The continuing accretion of multiple individual decisions to site solar facilities on productive agricultural land has cumulative regional economic and ecological implications that go beyond the loss of prime soils. For example, there are many permanent and migratory species depend on Connecticut's farm fields for habitat.

The Council offers the following additional comments regarding visibility, wildlife, vernal pools/wetlands, and groundwater:

The application shows sensitivity to visual impacts in its plan to install landscape screening features (modules) along portions of the property line to soften views from abutting properties. The Proposal would benefit from greater specificity with regard to the location(s) where black vinyl coated fencing will be deployed to "minimize light reflection and thus visibility of the fence."

The Applicant states that the conservation strategy for several species, including eastern pearlshell and American brook lamprey, will involve curtailing "illicit ATV operation within the properties it will control with fencing and other barriers". Additional details regarding what barriers or strategies will be employed to curtail illicit ATV use along Ketch Brook need to be identified; or alternative conservation strategies for the state-listed species identified by the Department of Energy and Environmental Protection Natural Diversity Database (NDDB) should be described. Furthermore, the actual height and locations of the proposed gaps under the proposed perimeter fencing for migration of turtles should be added to the Application's site plans.

A total of six vernal pools on the proposed site are classified as Tier I, which denotes exemplary pools where "management recommendations should be applied". While the proposed wetland buffer will likely reduce impacts on the "vernal pool envelope", the Applicant did not identify the area or percentage of the "critical upland habitat", (the area between 100 feet to 750 feet from the vernal pools), The Council recommends that the Applicant: 1) identify how much of the critical terrestrial habitat would be impacted by the proposed project, and 2) specify the management practices the Applicant would employ to protect the critical upland habitat of the identified Tier I vernal pools.

In addition, the Council notes that wetland #10 would be eliminated to construct the proposed project. The Council recommends that a minimum 100-foot non-disturbance buffer be applied around wetland #10 or in the alternative, a new wetland be created on the proposed site of equal or greater area in a location that would better support wildlife habitat and migration.

The groundwater at the site is identified as GAA, suitable for drinking water. A Spill Control and Countermeasures Plan (SPCC) should be included in the application for this project.

Thank you for your consideration of these comments. Please do not hesitate to contact the Council if you have any questions.

Sincerely,

Peter Hearn,
Executive Director

[i] USDA NRCS *Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin*, at https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_050898.pdf .

[ii] UCONN webinar *Improving Access to Farmland in Connecticut*, Rachel Murray and Kip Kolesinskas 2015, at https://www.youtube.com/watch?v=nvN1WJa7mgM&feature=youtu.be

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

Phone:

October 16, 2020

Ms. Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Dear Ms. Bachman:

Subject: Docket 492
120 MW-AC Solar Electric Facility
Apothecaries Hall Road, Plantation Road, Wapping Road and Windsorville Road
Town of East Winsdor

The Department of Transportation (CTDOT) has reviewed the above-mentioned Docket and offers the following comments.

The proposed Ground Mounted Solar Photovoltaic Electric Facility is proposed on Plantation Road and Windsorville Road which are both Town owned and maintained roadways and therefore will not require an encroachment permit. They do encroach CTDOT Rail Rights of Way and will require a License Agreement and a Temporary Right of Entry from the CTDOT Office of Rails.

Should you have any questions, please contact Ms. Latoya Smith, Utility Engineer (Utilities) at Latoya.Smith@ct.gov and Julie Thomas (Rails) at Julie.Thomas@ct.gov and .

Very truly yours,

Andrzej Mysliwiec

Andrzej Mysliwiec
Transportation Supervising Engineer
Division of Facilities and Transit
Bureau of Engineering and Construction

Enclosure

Latoya Smith:ls
bcc: Mark Rolfe
Gregory M. Dorosh -Leo Fontaine-Andrzej Mysliwiec-Derek Brown-Latoya Smith
James Chupas- John DeCastro-Christopher Brochu
Edgar T. Hurle- Raquel Ocasio

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
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https://www.ct.gov/csc

Screening Checklist

Connecticut Department of Transportation

Potential Transportation Infrastructure Impacts

Connecticut Siting Council Docket # 492

Location: Apothecaries Hall Road, Plantation Road, Wapping Road and Windsorville Road, East Windsor

1. Is the proposed facility abutting –the-right of way of a State maintained highway?

   _x_____ No

   _____ Yes – Specify the location and show location on a detail site plan.

2. Is the access for construction and maintenance of the proposed facility needed directly from a State maintained highway.

   __x____ No

   _____Yes – Identify specify needs and access location.

3. Is the proposed facility within or abutting a State owned Railroad Right-of-Way?

   _____ No

   ___x____Yes-Please provide an area and site plan.

4. Is the proposed facility within a two mile radius of any lands classified as preserved scenic land in accordance with CGS Section 13a-85a, " Acquisition of land adjacent to state highways for preservation and enhancement of scenic beauty and development of rest and recreation areas", or any designated scenic road in accordance with CGS Section 13b-31c, "Designation of scenic roads"?

   ___X_____No

   _____Yes

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

November 2, 2020

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RE: 120-MW Photovoltaic Generating Facility
Gravel Pit Solar LLC
East Windsor, Connecticut
Docket No. 492

Dear Members of the Connecticut Siting Council:

Staff of this department have reviewed the above-referenced application for a Certificate of Environmental Compatibility and Public Need for a 120-MW photovoltaic generating facility in the south central portion of East Windsor. A field review of the site was conducted on September 18 and 23 and October 1, 2020. Based on these efforts, the following comments are offered to the Council for your consideration in this proceeding.

As in other recent DEEP comments concerning photovoltaic generating facilities, we note that the construction of facilities such as that proposed in this application will aid in the achievement of Connecticut's vision for a more affordable, cleaner, and more reliable energy future for the ratepayers of Connecticut. Bringing more zero carbon energy projects on line is instrumental in furthering this vision as these resources help diversify the regional fuel mix, assist the state in meeting its requirement to purchase Renewable Energy Certificates from Class I renewable sources associated with 20% of its electricity by 2020, and in implementing Governor Lamont's Executive Order No. 3 that DEEP investigate pathways to achieve a 100% zero-carbon electric sector by 2040. As noted on pages 5-6 of the application, 20 MW of the Gravel Pit Solar project capacity was selected in DEEP's Zero Carbon Emissions RFP of 2018 and another portion of the project's capacity was selected by Rhode Island in another procurement shortly thereafter. Developing grid-scale renewables is also imperative to the state's success in achieving its goal of reducing carbon emissions by 45% below 2001 levels by 2030 and by 80% below 2001 levels by 2050.

DEEP also notes that Gravel Pit Solar LLC participated in a pre-application meeting with personnel from various DEEP programs on June 23, 2020 and presented their proposal to DEEP staff as well as received feedback from the DEEP program personnel.

Project Site Description

The project site is a mixture of agricultural fields, wooded land and two active sand and gravel operations. Despite the name of this project, Gravel Pit Solar, the gravel pit properties represent 76 acres or 15.7% of the 485 acre project footprint. Using the figures from Table 10 on page 56 of the application, which are somewhat different than the figures in the narrative portion

of the application, the area of land to be altered is 364.1 acres of which 61.2 acres or 16.8% is sand and gravel quarry land. The majority of the project footprint is comprised of agricultural fields of which 209.7 acres will be altered for the project according to Table 10. Most of the balance of the project area consists of forested land. The agricultural lands are extraordinarily flat, evidencing little or no slope. The terrain within the two sand and gravel pits is extremely irregular with deep excavations and various piles of material on these properties.

As a general comment on the application applying to the forested land within the project site, neither the Tree Clearing Map in Exhibit 1 nor any other maps or text in this application served to specifically locate or describe where the forest areas slated to be altered or cleared are located. According to Table 10, 58 acres of forest land will be altered, which assumedly includes both forestland within the project footprint as well as surrounding forested areas to be cleared to prevent shading of the panels. A single map or figure coloring in the forested areas of the site to be cleared would have been helpful.

The portion of the project site south of Plantation Road consists of four tilled fields and a farmstead. As of September 23 and subject to change since, from east to west, the four fields consisted of a field planted to cover crops, a field of harvested corn, a field of standing corn, the Markowski farmstead, and another field of standing corn. Eighteen greenhouses are located behind (south of) the third of these fields, as is a small patch planted to vegetables (cabbage, okra, tomatoes and peppers). The fields are very flat and without any ponds, wetlands or watercourses. There is a well-established dirt bike/ATV trail leading from the southwest corner of this third field and accessed via a drive at 42 Plantation Road which leads through a forested area and eventually to residences to the south. The effects of the recent drought conditions are very evident in the corn and vegetables.

More agricultural fields are found north of Plantation Road. These are bounded in general terms by the Central New England rail line to the east and forests extending down to Ketch Brook on the west. Several tobacco barns are located within the fields both north and south of Plantation Road.

Noise from the gun range at the East Windsor Sportmen's Club becomes noticeable in the areas of the project site north of Plantation Road. Such noise was clearly heard during the September 18 and 23 field visits but, ironically, not during the October 1 visit which covered the northern portion of the project site which is closer to the Sportsmen's Club.

Two other observations are noted relative to the forest west of the agricultural fields north of Plantation Road. First is the very well developed ATV/dirt bike trails in these woods, particularly as you get more northerly and closer to the Herb Holden gravel pit. In some areas, these are more aptly described as well-established roads rather than trails. The other interesting feature noted was an 8" diameter metal pipe extending above ground approximately 1,800' before continuing underground. This pipe originates at a rectangular concrete pool of approximately 25' x 35' dimension and located just west of tobacco barn no. 26 and southeast of barns 32, 33 and 34, at the edge of the cultivated fields. From this concrete structure, the pipeline extends west through approximately ninety 20' sections of pipe before disappearing underground behind the home at

305 Rye Street and assumedly continuing on to either Ketch Brook or the nearby pond in the yard of this home. This pipe may have been used to pump water from Ketch Brook or the pond to the concrete pool for irrigation purposes, though the water in the pool looked anything but fresh, so it may not have been used recently.

Moving north from the fields on the north side of Plantation Road, the next portion of the project site is the sand and gravel pit operated by Herb Holden Trucking on property owned by Dennis Botticello. A berm along the northern edge of the agricultural property demarcates it from the sand and gravel pit. Two features of the sand and gravel pit are immediately striking. The first is the irregularity of its topography. Due to the level of on-going activity on the site, only the southern portion of the active excavation area was visited. Within this area were a deep sand pit, a steep hill of sand, smaller sand piles, brush piles and the berm. The haul road descended from above the pit area down to the railroad tracks, passing a small closed landfill, before running parallel to the tracks, crossing them, and ascending back up the east side to both another excavated area and a second, larger closed landfill.

The other notable feature is the extent to which dirt bike use of the pit has become institutionalized with well-defined trails and courses and half-buried upright tires marking turns in the courses. Speaking with personnel at the pit's weigh station, I was told that they used to call the police multiple times per day about the bikers but the police were never able to catch anyone so the pit owners eventually gave up. A pick-up truck and enclosed equipment trailer were parked by a tobacco barn immediately south of the Botticello property as I left it and two bikes which had passed me in the pit were being loaded onto it. I passed another group of dirt bike riders and a group of three ATV's on another trail just to the north of the pit later that day. The level and formalized nature of dirt bike use at the site begs the question as to whether this activity will go away quietly should the proposed solar farm be developed. A mere chain link fence might not be sufficient to assure a 'peaceful transition of power'.

Two existing Ameresco solar facilities are found in the eastern portion of the Herb Holden/Botticello property, one on the south side of the property entrance off Wapping Road and one just a bit north of the first. Labeled according to the signs on their gates as the Norcap South and Norcap North facilities respectively, these are most clearly shown on the Farmland Soils Map and the Tree Clearing Map of Exhibit 1 in the east central portion of either map.

The northernmost portion of the Gravel Pit Solar site consists of the Charbonneau gravel pit operated by the Butler Company, and some small agricultural fields along the south side of Apothecaries Hall Road. The Charbonneau site includes piles of wood chips, mulch, top soil, and concrete debris, the latter, I was told, to be recycled into road aggregate. Both within the working area of the Charbonneau property and much more so along the entrance road to the site are large collections of shipping containers, derelict trucks, miscellaneous equipment and even some small pre-fab structures. The topography of the Charbonneau site is irregular but less so than the Herb Holden pit. The Central New England rail line bounds the property on the west side, while an Eversource transmission line right-of-way bisects it.

Apothecaries Hall Road runs along the north side of the Charbonneau property. The north side of Apothecaries Hall Road is residential with potentially some views of the future solar facility possible from some properties. Several small agricultural fields lie along the south side of Apothecaries Hall Road.

To the west of the Charbonneau property, just across the railroad tracks from it, is the 18-acre property and shooting range of the East Windsor Sportmen's Club on the south side of Apothecaries Hall Road. The Sportmen's Club property is entirely fenced. One officer and one member of the club mentioned that unauthorized shooting activity on the property south of the Club has resulted in significant damage to the Eversource transmission lines. The Club officer showed me showed me photos taken from Eversource drones of the damage to the lines. This activity occurs outside of the boundary of the proposed solar facility and might not therefore be curtailed should the proposed facility be constructed, but it could result in damage, either accidental or otherwise, to the solar panels or other equipment.

The facility to measure and collect data on the available solar radiation for the Gravel Pit Solar project is located just south of the Eversource transmission line right-of-way on the Charbonneau property.

Aquifer Protection Area

The northern portion of the Charbonneau property falls within the aquifer protection area of the Connecticut Water Company's Hunt Wellfield. The proposed solar farm is not a regulated activity under the Aquifer Protection Area regulations or C.G.S. 22a-354a-bb and is not required to register with the Aquifer Protection Program. Representatives of Gravel Pit Solar have been in contact with the DEEP Aquifer Protection Program and have been provided with the appropriate best management practices to safeguard the aquifer.

Bulky Waste Landfills on Botticello Property

The Northern Capital Region Disposal Facility (NORCAP) is located on the Botticello property which hosts the Herb Holden sand and gravel operation. The landfill consists of two parcels, the smaller one west of the railroad and the larger one to the east. These landfills were closed in late 1999/early 2000. The western area, which is directly adjacent to the solar project footprint, was used for the disposal of bulky wastes, i.e., wood and landscaping debris. The eastern area received bulky waste, construction/demolition debris, municipal solid waste and some light industrial waste. There is on-going post-closure care including water quality monitoring at these sites.

DEEP's concern would be if any portion of the solar facility or any construction activity would impact the landform in any way, including the underlying geomembrane. If the applicant has any questions or any uncertainty about the potential for this, David McKeegan of the DEEP Waste Engineering and Enforcement Division should be contacted at David.McKeegan@ct.gov.

Construction Stormwater Management

Construction projects involving five or more acres of land disturbance require either an individual NPDES discharge permit from DEEP or they may register for coverage under the Department's General Permit for the Discharge of Stormwater and Dewatering Wastewaters from

Construction Activities (DEEP-WPED-GP-015). Representatives of Gravel Pit Solar have been in contact with the Stormwater Program concerning this project and DEEP Stormwater Program personnel have visited the site. DEEP is highly supportive of the applicant's approach to employ pre-seeding of the site and the establishment of permanent vegetative cover on the site before construction activities commence. The schedule proposed on page 15 of the application to install stormwater controls, grade and stabilize the site and establish vegetative cover in the late summer/early fall of the year before beginning to install the solar facility the following construction season will be very helpful in preventing erosion problems on the site.

The applicant should also be aware that, prior to initiating the construction of any engineered stormwater control measures, any proposed measures must be evaluated to determine if they may quality as dams as defined by the Regulations of Connecticut State Agencies Sec. 22a-409-1(10), which may require a Dam Safety Construction Permit. A determination on the need for this permit may be requested by contacting the DEEP Dam Safety Program at DEEP.DamSafety@ct.gov.

For the benefit of the applicant, two stormwater guidance documents are attached to these comments.

Natural Diversity Data Base

Consultants for Gravel Pit Solar submitted a letter to the DEEP Natural Diversity Data Base on July 19, 2020 concerning survey methods and protection strategies for the fifteen State-listed plant and animal species potentially present at the project site. Review of this information is still on-going and no Final Determination letter for this project has yet been issued. Further information from the applicant may be necessary before such determination can be issued.

Miscellaneous Petition Commentary

DEEP typically recommends that a 6" gap be left between the ground and the bottom of the perimeter security fence to accommodate the movement of smaller wildlife onto the site to avail themselves of the permanently maintained grassland habitat within the fence. With 485 acres of such habitat within the fenceline of the proposed Gravel Pit Solar facility, we repeat this recommendation for this largest-in-the-state solar farm as being especially relevant in this case.

Thank you for the opportunity to review this application and to submit these comments to the Council. Should you, other Council members or Council staff have any questions, please feel free to contact me at (860) 424-4110 or at frederick.riese@ct.gov.

Respectfully yours,

Frederick L. Riese

Frederick L. Riese
Senior Environmental Analyst

Attachments: (2)
cc: Commissioner Katie Dykes

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

**GUIDANCE REGARDING SOLAR ARRAYS
AND THE GENERAL PERMIT FOR THE
DISCHARGE OF STORMWATER AND DEWATERING WASTEWATERS FROM CONSTRUCTION ACTIVITIES**

January 6, 2020

Solar development has expanded over the last several years as Connecticut and other states have invested in this important resource to further greenhouse gas emission reductions. The large amount of impervious surface inherent in the construction of a large-scale solar arrays is unlike most other construction activities regulated under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("general permit") and entails challenges not encountered in traditional development projects. If not properly managed through appropriate design and mitigation measures, stormwater discharged during and after the construction of solar arrays can be a significant source of pollution resulting from increased runoff, erosion, and sedimentation, which can adversely impact wetlands or other natural resources. Solar installations must be properly designed to assure soil stabilization, minimize soil disturbance and soil compaction. This includes ensuring that effective controls are put in place to manage the total runoff volume and velocity that can lead to the loss of topsoil, erosion and sediment discharges from disturbed areas and stormwater outlets, and erosion along downstream channels and streambanks. The ability to address such significant environmental problems during construction and post-construction becomes more difficult as site imperviousness increases.

The environmental objectives of the general permit that solar facilities must meet have not changed. What has changed are the design assumptions and application of stormwater management techniques and engineering principles and practices to meet those requirements, as well as the Department's knowledge and experience with respect to the ability of different techniques and engineering practices to meet the underlying environmental requirements. The Department is obligated to apply its best understanding of management techniques and engineering practices and principles. At the same time, the Department strives to provide more predictability and transparency around its approaches to permitting solar facilities in order to promote environmental compliance and competitive solar development in the state.

To that end, DEEP is publishing this Guidance, available at www.ct.gov/deep/stormwater to assist the professionals engaged in designing and constructing solar array projects, both large and small, and to provide a more transparent understanding of how the Department is considering emerging issues and the manner of addressing them. The Guidance describes the Department's expectations around how such professionals may ensure that any such project is designed and constructed in a manner that takes into account site conditions such as: the amount, frequency, intensity and duration of precipitation; soil types, topography, surficial geology, hydrology and natural resources; and any changes to such conditions resulting from site activities during and after construction to minimize erosion and sedimentation and to control stormwater discharges, including peak flowrates and total stormwater runoff volume and velocity. This guidance should also help facilitate the preparation and efficient review of a Stormwater Pollution Control Plan (Plan) submitted in support of an application for coverage under the general permit.

This guidance should not be confused with, and is not intended to contain, enforceable requirements. A professional may propose to design and construct a solar array in another manner. A design professional may decide, based on the particular conditions for a project or a site that the best technique or engineering practice is to deviate from this guidance. The Department is open to considering alternative approaches. To be approved, however, any proposal must address the issues noted in this Guidance as well as demonstrate compliance with the requirements of the general

permit. This guidance is provided for informational purposes only and is not meant to modify or replace any provision of the general permit or any applicable laws or regulation. In the event of a conflict between this guidance and the general permit or any applicable law or regulation, the permit or applicable law or regulation shall govern.

The Department notes that it has separately initiated a public comment process on the proposed Construction General Permit, which includes similar provisions described in this guidance. The final adoption of a new Construction General Permit will negate the need for this Guidance. Any questions about the applicability of this Guidance may be directed to Karen Allen at Karen.Allen@ct.gov.

Design and construction guidance

(1) Roadways, gravel surfaces and transformer pads within the solar array are considered effective impervious cover for the purposes of calculating Water Quality Volume (WQV). In addition to these impervious surfaces, all solar panels in the array should also be considered effective impervious cover for the purposes of calculating the WQV if the proposed post-construction slopes at a site are equal to or greater than 15% or if the post-construction slopes at a site are less than 15% and the conditions in (a) – (e), inclusive, below have not been met:

(a) The vegetated area receiving runoff between rows of solar panels (see Figures 1 and 2, below) is equal to or greater than the average width of the row of solar panels draining to the vegetated area;

(b) Overall site conditions and solar panel configuration within the array are designed and constructed such that the runoff remains as sheet flow across the entire site;

(c) The following conditions are satisfied regarding the design of the post-construction slope of the site:

- For slopes less than or equal to 5%, appropriate vegetation shall be established as indicated in Figure 1, below; and
- for slopes greater than 5%, but less than 10%, practices including, but not limited to, the use of level spreaders, terraces or berms as described in Figure 2, below, shall be used to ensure long term sheet flow conditions; and
- for sites with slopes greater than or equal to 8%, erosion control blankets or stump grindings or erosion control mix mulch or hydroseed with tackifier should be applied within 72 hours of final grading, or when a rainfall of 0.5 inches or greater is predicted within 24 hours, whichever time period is less; and
- for slopes equal to or greater than 10% and less than 15%, the Plan includes specific engineered stormwater control measures with detailed specifications that are designed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.

(d) The solar panels should be designed and constructed in such a manner as to allow the growth of vegetation beneath and between the panels.

(e) A one-hundred (100) foot buffer should be maintained between any part of the solar array and any of the following: "wetland" as that term is defined in in Conn. Gen. Stat. § 22a-29, "wetlands" as defined in Conn. Gen. Stat. § 22a-38, or "waters" as defined in Conn. Gen. Stat. § 22a-423, which shall include vernal or intermittent waters. The buffer shall consist of undisturbed existing vegetation or native shrub plantings.

(2) The lowest vertical clearance of the solar panels above the ground should not be greater than ten (10) feet. The panels should, however, be at an adequate height to support vegetative growth and maintenance beneath and between the panels. If the lowest vertical clearance of the solar panels above the ground is greater than ten (10) feet, non-vegetative control measures will be necessary to prevent/control erosion and scour along the drip line or otherwise provide energy dissipation from water running off the panels.

(3) The Commissioner may require that a letter of credit be secured prior to undertaking construction activity, in circumstances where site conditions, scale of project or previous compliance issues present elevated risks associated with potential non-compliance. For previously permitted projects, the amount of the letter of credit has been established at $15,000.00 per acre of disturbance. The wording of such letter of credit shall be as prescribed by the Commissioner. The Permittee should maintain such letter of credit in effect until the Commissioner notifies the permittee that the Notice of Termination, filed in compliance with Section 6 of the general permit has been accepted by the Commissioner.

Design requirements for post-construction stormwater management measures.

(1) Post-construction stormwater control measures should be designed and constructed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.

(2) Orientation of panels should be considered with respect to drainage pattern, flow concentration, drainage area and velocity (i.e. rows perpendicular to the contours may result in higher runoff and flow concentration).

(3) The permittee should conduct a hydrologic analysis that:

(a) Evaluates 2, 25, 50 and 100-year storm post-construction stormwater flows; and

(b) Is based on site specific soil mapping to confirm soil types; and

(c) Is able to determine and confirm the infiltrative capacity of any stormwater management measures and, in addition, reflects a reduction of the Hydrologic Soil Group present on-site by one (1) step (e.g. soils of HSG B shall be considered HSG C) to account for the compaction of soils that results from extensive machinery traffic over the course of the construction of the array; and

(d) Is based on slope gradient, surveyed soil type (adjusted per subparagraph (c), above), infiltration rate, length of slope, occurrence of bedrock, and change in drainage patterns (see also page 23 at https://www.ct.gov/deep/lib/deep/Permits_and_Licenses/Land_Use_Permits/Inland_Water_Permits/IWRD_inst.pdf); and

(e) For an engineered stormwater management system, demonstrates no net increase in peak flows, erosive velocities or volumes, or adverse impacts to downstream properties.

Figure 1
Solar Panel Installation with Slopes ≤ 5%

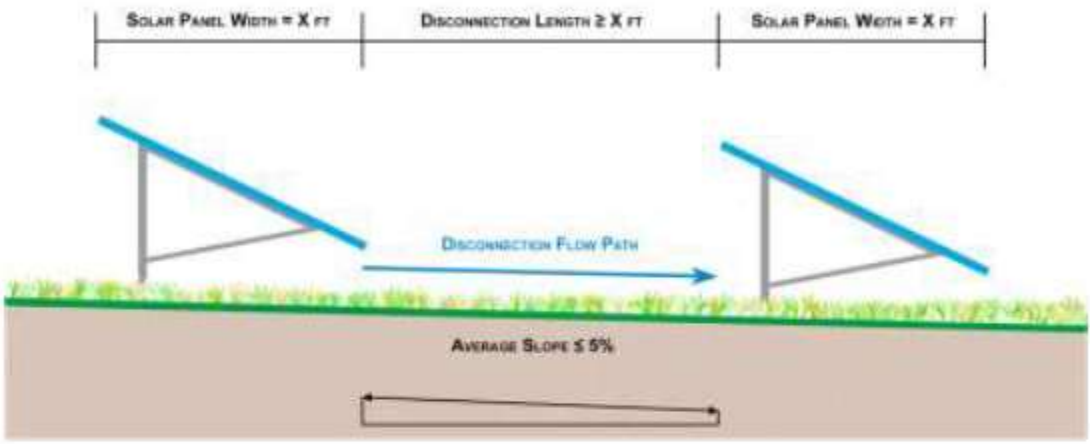
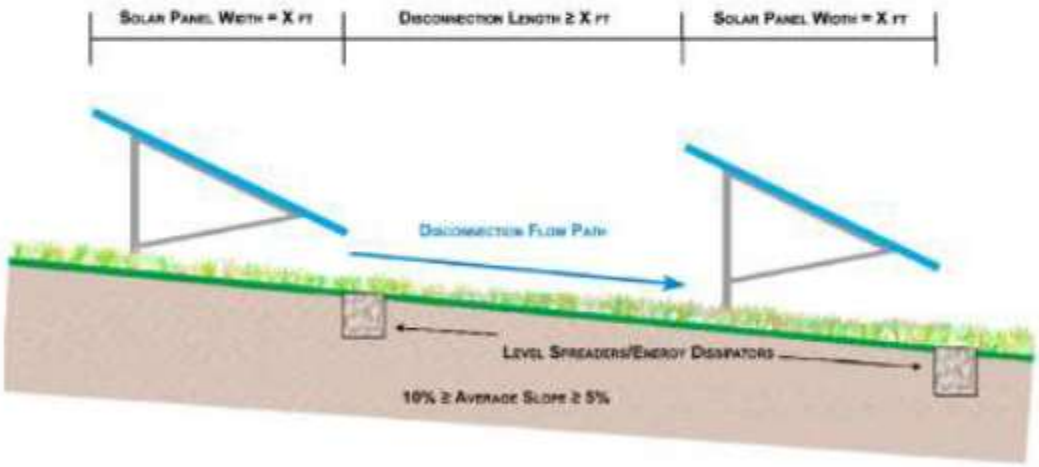


Figure 2
Solar Panel Installation with Slopes > 5% and ≤ 10%



Source: Maryland Department of the Environment: Stormwater Design Guidance – Solar Panel Installations

STATE OF CONNECTICUT
DEPARTMENT OF AGRICULTURE
Office of the Commissioner

Bryan P. Hurlburt
Commissioner

860-713-2501
www.CTGrown.gov

November 4, 2020

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Docket No. 492** - Gravel Pit Solar application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 120-megawatt-AC solar photovoltaic electric generating facility on eight parcels generally located to the east and west of the Amtrak and Connecticut Rail Line, south of Apothecaries Hall Road and north of the South Windsor town boundary in East Windsor, Connecticut and associated electrical interconnection.

Dear Executive Director Bachman:

Upon review of the above referenced docket, and the attached memo, the Connecticut Department of Agriculture is opposed to this project due to the significant amount of valuable prime farmland being consumed for non-agricultural purposes.

Specifically, we have the following comments on this proposed project:

1) The project will convert approximately 230 acres[1] of prime farmland from its existing agricultural use of growing crops such as feed corn, shade tobacco and vegetables, to a use which compromises the future viability of that farmland by placing a large-scale utility solar project on the property;

2) The farmland will be impacted by the use of heavy equipment, installation of driven metal support posts, extensive trenching for electrical conduit, surface grading, construction of access roads and equipment pads. These activities will have an adverse impact on the upper 24 inches of the soil which are critical to plant growth - inversion of soil horizons, compaction, destruction of soil structure, acidification, loss of fertility, and changes to surface and subsurface soil hydrology are likely, with negative consequences for agricultural productivity; and

3) Mitigation of the prime farmland soils, which has been the case for much smaller (2-5 megawatt) projects, is not being proposed. For example, consideration could have been given to co-use opportunities and/or other mitigation measures, including but not limited to, the following:

    a. Restoration of farmland on the site to allow for production agriculture during the life of the project;
    b. Restoration of farmland at another location within the same municipality to retain prime and important farmland soils within the Connecticut River Valley;
    c. A proposal to the purchase of conservation easements on other farmland in the community;
    d. Setting aside a percentage of the prime farmland for continued agricultural use;

[1] The information regarding the prime farmland acreage is derived from a memo titled "Connecticut Department of Agriculture Consultation Gravel Pit Solar Project East Windsor, CT," dated July 22, 2020, copy attached.

e. Incorporating the use of agrivoltaics to allow for the continued production agriculture throughout the life of the project (e.g., increasing spacing and height of the panels to allow for growing crops);
f. Creation of pollinator habitat, maintaining beehives and honey production; and
g. Incorporating the use of grazing on the site.

When the project is decommissioned, the soil productivity will have been compromised and require restoration with unknown productivity levels for future farmers. We note the comments made by the Council on Environmental Quality about decommissioning in their letter to the Siting Council dated October 1, 2020, and adopt their comments on this matter, along with their other concerns about the negative impact of this project on prime farmland.

The loss of 230 acres of actively used prime farmland soils will likely put additional farms at risk for conversion to non-agricultural use, including development. The Department takes its mission to preserve farmland for future generations as a critical one that greatly benefits the State and its residents. Permitting such large-scale projects on prime farmland would set a poor example for demonstrating the State's stewardship of it agricultural resources.

With respect to siting of these projects, the agency encourages the use of alternative locations such as highway right of ways, brownfield sites, developed sites and gravel mines, placement of solar in parking lots and on parking lot sheds, and on large structures such as malls and warehouses. These locations are much better suited to solar development, and would be a better alternative than one that results in the permanent loss of finite prime farmland soil resources that provide significant ecosystem goods and services.

The Department supports properly scaled renewable energy on farms and farmland where such projects are in concert with Connecticut's farmland protection goals and policies, but this project does not align with those goals. This project will materially adversely affect the status of such land as prime farmland, and therefore the Department opposes the issuance of a Certificate of Environmental Compatibility. Approval of this project would be counter to the state's goals of farmland protection and the promotion of agricultural economic development, both of which, are important components of sustainability and climate change adaptation and mitigation.

Thank you for the opportunity to comment on this project.

Sincerely,

Bryan P. Hurlburt
Commissioner

Enc.

Cc: Katie Dykes, Commissioner
Department of Energy and Environmental Protection w/ Enc.