DOCKET NO. 497– Burlington Solar One, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a 3.5-megawatt AC solar photovoltaic electric generating facility located at Lot 33, Prospect Street, Burlington, Connecticut and associated electrical interconnection.	}	Connecticut
	}	Siting
	}	Council

July 15, 2021

Findings of Fact

Introduction

1. On November 3, 2020, Burlington Solar One, LLC (BSO) submitted a petition (Petition 1437) to the Connecticut Siting Council (Council) pursuant to Connecticut General Statutes (C.G.S.) §4-176 and §16-50k, for the construction, maintenance and operation of a 3.5 megawatt (MW) alternating current (AC) solar photovoltaic electric generating facility located at Lot 33, Prospect Street, Burlington, Connecticut. (Council Administrative Notice Item No. 50 – Petition No. 1437)

2. On January 22, 2021, BSO withdrew Petition 1437 and converted it into an application for a Certificate of Environmental Compatibility and Public Need (Certificate) to address the December 1, 2020 Department of Energy and Environmental Protection (DEEP) correspondence concerning material impacts to the status of core forest associated with Public Act 17-218. (Council Administrative Notice Item No. 50 – Petition No. 1437)

3. Also on January 22, 2021, BSO (Applicant), in accordance with the provisions of C.G.S.-§16-50g et seq., applied to the Council on June 22, 2021 for a Certificate for the construction, maintenance, and operation of a 3.5-MW-AC solar photovoltaic electric generating facility located at Lot 33, Prospect Street, Burlington, Connecticut. (Applicant 1, Cover Letter and p. 4)

4. BSO is a Connecticut limited liability company with its principal place of business at 150 Trumbull Street, 4th Floor, Hartford, Connecticut. (Applicant 1, p. 9)

5. BSO is an affiliate of Verogy LLC (Verogy). Verogy is a renewable energy business with experience in solar industry, and its core business is developing, financing, constructing, managing, and operating solar projects. (Applicant 1, p. 9)

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

7. The purpose of the proposed project is to contribute to the state's efforts to promote the deployment of clean renewable energy sources. (Tr. 1, p. 33)

8. The proposed project would generate renewable electrical energy from solar power. Solar power is considered a Class I renewable energy source. (Applicant 1, pp. 4, 23; CGS § 16-1(a)(20))

9. The proposed project was selected to participate in the State's low emissions renewable energy credit (LREC) program. (Applicant 1, p. 5)

10. 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)

11. 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 January 29, 2021. (Applicant 3)

12. Pursuant to C.G.S. § 16-50*l* (b), notice of the application was provided to all abutting property owners on October 23, 2020. Certified mail receipts from all abutting property owners were received. (Applicant 1, p. 9; Council Administrative Notice Item No. 50 – Petition No. 1437, Abutter Notification and Government Entities Notification Letter dated November 6, 2020; Tr. 1 p. 51)

13. On October 23, 2020, BSO provided notice to all federal, state and local officials and agencies listed in C.G.S. § 16-50*l* (b). (Council Administrative Notice Item No. 50 – Petition No. 1437, Abutter Notification and Government Entities Notification Letter dated November 6, 2020)

Procedural Matters

14. 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. 78)

15. 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. 78)

16. 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. 78; CGS §1-200, *et seq*. (2019))

17. 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. 78)

18. 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. 78)

19. On January 28, 2021, the Council sent a letter to the State Treasurer, with a copy to the Chief Elected Official of the Town of Burlington (Town) stating that $25,000 was received from the Applicant and deposited in the Office of State Treasurer's Municipal Participation Account for use by the Town to apply for a portion of the funds if they become a party or intervenor to the proceeding, pursuant to CGS §16-50bb. (Record)

20. During a regular Council meeting on February 11, 2021, 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)

21. 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 Hartford Courant on February 18, 2021. (Record)

22. Pursuant to Governor Lamont's EO 7B and C.G.S. § 16-50m, on February 17, 2021, the Council sent a letter to the Town of Burlington (Town) to provide notification of the scheduled remote public hearing via Zoom conferencing and to invite the Town to participate. (Record)

23. 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 February 17, 2021)

24. 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. 79 and 80)

25. On March 3, 2021, in lieu of an in-person field review of the proposed site, the Council requested that the Applicant submit photographic documentation of site-specific features into the record intended to serve as a "virtual" field review of the site. On March 17, 2021, the Applicant submitted such information in response to the Council's interrogatories. (Record; Applicant 4, response 50)

26. On February 24, 2021, 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 February 17, 2021 and February 25, 2021)

27. In compliance with R.C.S.A. § 16-50j-21, the Applicant installed a four-foot by six-foot sign at the subject property on March 8, 2021. The sign was installed at the proposed access entrance off of Prospect Street. The sign presented information regarding the project and the Council's public hearing. (Applicant 6)

28. Pursuant to C.G.S. § 16-50m, the Council, after giving due notice thereof, held a remote public hearing on March 23, 2021, 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 February 17, 2021; Tr. 1, p. 1; Transcript 2 – 6:30 p.m. [Tr. 2], p. 142)

29. 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 hearings were recorded and transcribed, and such recordings and transcripts were posted on the Council's website on March 24, 2021, March 29, 2021, April 14, 2021 and April 19, 2021, 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 February 17, 2021; Tr. 1; Tr. 2; Record)

30. The Council continued the remote evidentiary hearing session via Zoom conferencing on April 13, 2021. (Council Evidentiary Hearing Continuation Memorandum dated March 24, 2021; Transcript 3 – 2:00 p.m. [Tr. 3], p. 177)

31. On April 23, 2021, the Applicant requested that the Council reopen the evidentiary record to allow for the submission of a revised response to Council interrogatory No. 38 in light of BSO's receipt of the results of Toxicity Characteristic Leaching Procedure (TCLP) testing of the solar panels. (Applicant's Request to Reopen the Evidentiary Record dated April 23, 2021)

32. On May 6, 2021, the Council granted the Applicant's request to reopen the evidentiary record to allow for the submission of the revised response to Council interrogatory No. 38. Also on May 6, 2021, the proceeding schedule was revised to extend the close of the public comment period to June 5, 2021. (Council Decision on Motion to Reopen dated May 7, 2021)

Municipal Consultation

33. The Applicant consulted with the First Selectman and zoning staff of the Town regarding the development of the project. During such consultations, it was noted that the proposed development would be consistent with the Town's sustainable initiatives and certification, which include the efforts to expand renewable energy. (Applicant 1, p. 8)

34. The Town had positive feedback related to potential solar development as compared with other potential uses for the subject property such as warehouses, shipping/distribution centers and other types of development that would be more permanent in nature. (Applicant 1, p. 8; Tr. 1, pp. 31-32)

35. The Applicant intends to use, where appropriate, local and regional labor for the construction and operation of the project and expects that approximately 21 new jobs would be created: 19 construction jobs and 2 new full-time positions. (Applicant 1, p. 23)

36. The Town would receive annual tax revenues from the project for an estimated 20 years. (Applicant 1, p. 23)

37. The Applicant established a project website (https://www.verogy.com/burlington-solar-one) where the public can learn about the project and submit project-related inquiries directly to the Applicant. (Applicant 1, p. 9)

38. By email dated January 13, 2021, the Town Zoning Enforcement Officer noted that the original project site maps appear to adhere to municipal setback requirements for the zoning designation of the host parcel. (Application 1, Attachment U)

39. The Applicant has been coordinating with members of the Burlington Land Trust, Whigville Preservation Group and other neighbors regarding development of a landscaping plan for the project. (Applicant 1, p. 9)

40. As of March 23, 2021, the Applicant had not received any additional comments or feedback from the Town. (Tr. 1 pp. 28-29)

41. 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. 54; Council Administrative Notice Item No. 48 – Petition No. 1310A, Finding of Fact #38; CGS § 22a-20a)

State Agency Comments

42. Pursuant to C.G.S. § 16-50j (g), on February 17, 2021, 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)

43. On November 5, 2020, the Council sent correspondence requesting comments on Petition 1437 from the above-listed state agencies. CEQ submitted comments on November 20, 2020, and DEEP submitted comments on December 3, 2020. (Council Administrative Notice Item No. 50 – Petition No. 1437)

44. On March 2, 2021, the Council received additional comments from CEQ on the application, which are attached hereto. (CEQ Comments received March 2, 2021)

45. On March 8, 2021, the Council received comments from DOT on the application, which are attached hereto. (DOT Comments received March 8, 2021)

46. 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. 83 – *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007)

47. The following agencies did not respond to the Council's request for comment on Petition 1437 or the application: DPH, PURA, OPM, DECD, CAA, DESPP, DCP, DOL, DAS, and SHPO. (Record)

State of Connecticut Planning and Energy Policy

48. 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. 47 – Docket No. 470B, Finding of Fact #57; CGS §16a-3d)

49. 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. 56 – 2018 CES, p. 14)

50. 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. 56 – 2018 CES)

51. 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. 22)

52. 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. 56 – 2018 CES, p. 112)

53. 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. 22)

54. 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. 70 – Climate Change Preparedness Plan)

55. 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. 22)

Competitive Energy Procurement

56. The project was awarded two Low Emissions Renewable Energy Credit (LREC) contracts through a competitive request-for-proposal (RFP) process for approximately 1.5 MW and 2 MW, respectively. The Applicant entered a 20-year purchase contract with Eversource for the LRECs. (Applicant 1, p. 5; Tr. 1, p. 34)

57. Energy produced by the project would be sold to The Connecticut Light and Power Company d/b/a Eversource Energy (Eversource) at market rates specified in the applicable utility tariff with Eversource for any self-generation facility. Alternatively, the Applicant had considered virtual net metering (VNM); however, there has not been a legislated increase in the capacity of the virtual net metering market to date, so it is currently capped. Thus, there is no availability for the project to participate in VNM at this time. (Applicant 1, p. 5; Tr. 1, p. 33-34)

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. Zero Emission Renewable Energy Credit (ZREC) contracts are limited to 1 MW, and LREC contracts are limited to 2 MW. (CGS §16-244r; Tr. 1, p. 34; Council Administrative Notice Item No. 48 – Petition No. 1310A, Finding of Fact # 61)

59. PURA approved the LREC contracts for the facility on October 29, 2019. (Applicant 4, response 4)

60. The LREC contracts are not extendable beyond their 15-year term. After expiration of the LREC contract, the Applicant anticipates that it will sell Class I RECs on the spot market. The Applicant also intends to engage in the sale of energy and capacity as additional revenue sources for the project. (Applicant 4, response 5; Tr. 1, p. 35)

Public Benefit

61. 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. 47 – Docket No. 470B, Finding of Fact #42)

62. 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. 47 – Docket No. 470B, Finding of Fact #41)

63. 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. 47 – Docket No. 470B, Finding of Fact #45)

64. 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. 47 – Docket No. 470B, Finding of Fact #46)

65. 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. 47 – Docket No. 470B, Finding of Fact #47)

66. 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. 47 – Docket No. 470B, Finding of Fact #48)

Resource Adequacy

67. 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)

68. 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

69. 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)

70. 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)

71. 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

72. The following generating resources have been identified by ISO-NE as retired.

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	Retire by June 2021
Mystic No. 7	Oil/Gas	573 MW	Retired
Total		**5,006 MW**	

(Council Administrative Notice Item No. 47 – 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; Council Administrative Notice Item No. 21 – ISO-NE 2018 Operational Fuel-Security Analysis, p. 13)

73. 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. 47 – Docket No. 470B, Finding of Fact #69)

74. 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. 47 – Docket No. 470B, Finding of Fact #71)

New England Reliability

75. 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. 47 – Docket No. 470B, Finding of Fact # 72)

76. 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. 47 – Docket No. 470B, Finding of Fact # 73)

77. 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. 47 – Docket No. 470B, Finding of Fact # 76)

78. 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. 47 – Docket No. 470B, Finding of Fact # 77)

79. ISO-NE computes and annually updates NICR for the New England Region. There is no separate NICR for Connecticut. (Council Administrative Notice Item No. 47 – Docket No. 470B, Finding of Fact # 78)

ISO-NE's FCA

80. 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. 47 – Docket No. 470B, Finding of Fact # 79)

81. 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 fifteenth FCA (FCA #15), resources that cleared in February 2021 are committed to the June 1, 2024 through May 31, 2025 CCP. (Council Administrative Notice Item No. 47 – Docket No. 470B, Finding of Fact # 80; Council Administrative Notice Item No. 42 – ISO-NE FCA #15 Press Release dated February 11, 2021)

Solar Facility Benefit

Applicant's FCA Participation

82. The Applicant did not participate in ISO-NE's FCA#15 that was conducted during February 2021. However, the Applicant intends to participate in future FCAs such as the next available FCA. (Applicant 4, response 7)

83. 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. 48 – Petition No. 1310A, Finding of Fact # 57)

84. Securing a CSO is sufficient but not necessary to demonstrate a resource's necessity for electric reliability. (Council Administrative Notice Item No. 47 – Docket No. 470B, Finding of Fact #85)

Competitive Markets Benefit

85. The project was awarded LREC contracts in a competitive auction for LRECs/ZRECs which was administered by the state's electric distribution companies. The purpose of the auction is to permit the development of low emission and zero emission generation technologies in Connecticut at the most cost-effective price. In light of Governor Lamont's Executive Order No. 3 to decarbonize the state's electric generation fleet and the project being selected in a competitive LREC/ZRE auction, the project is necessary for the development of a competitive market for electricity. (Applicant 4, response 21b)

Forecast Capacity Benefit

86. Given the small size of the project and its proposed connection to the distribution system as opposed to the transmission system, the project would not directly factor into the respective calculation for forecasted generation capacity in ISO-NE territory. Notwithstanding, the project would reduce demand for power on the distribution circuit to which it interconnects. (Applicant 4, response 21c)

Domestic Energy Supply Benefit

87. The proposed project would represent a clean, local source of renewable energy that will help meet the state's energy requirements domestically. Thus, it would reduce Connecticut's reliance on imported energy sources. (Applicant 4, response 21d)

88. 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

89. The proposed project would help to diversify the state's energy supply mix by adding another renewable energy resource into the state's portfolio of energy sources in light of renewable energy being currently out supplied by natural gas and nuclear resources. (Applicant 4, response 21e)

90. 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)

91. 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)

92. 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

93. The proposed project would increase the reliability of overall electric grid by reducing demand for power on the distribution circuit that it is interconnected to. This would reduce the demand for centrally-located generation facility, and this should serve to alleviate stress on the grid. (Applicant 4, response 21f)

Project Alternatives

94. The Applicant considered the following factors in its site selection process:

a) Sufficient parcel size/acreage.
b) Proximity to existing electrical distribution with adequate capacity to support the project;
c) Ability to reach an agreement with landowner on lease terms that are economic for the project;
d) Land use and potential future land uses;
e) Site contours; and
f) Wetland resources.

(Tr. 1, p. 29-31)

95. The Applicant considered at least 12 alternative sites in the Litchfield and Hartford County areas, including, but not limited to, the Town of Burlington and the City of Bristol. These alternative sites were ultimately rejected due to issues such as lack of viability from an electrical interconnection perspective; topography; land use characteristics such as farmland; and ability to secure economic lease terms with the landowners. (Tr. 1, p. 29-31)

Site

96. 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))

97. Pursuant to a lease agreement with the property owner, Prospect Street, LLC, the Applicant proposes to construct the solar facility on a 11.58- acre site located within an approximately 62.98-acre parcel at Lot 33, Prospect Street in Burlington. (Applicant 1, p. 6)

98. The 62.98-acre host parcel is bordered to the south by Prospect Street and to the north and east by forested areas, residential areas and Wildcat Brook. Agricultural fields are located to the west of the parcel. (Applicant 1, pp. 6-7, 10)

99. The host parcel is located in the Town's Industrial Zone. (Applicant 1, p. 10)

100. Historically, land use at the site consisted of farmland, including hayfields and pastureland. However, between 1951 and 1970, and continuing presently, sand and gravel mining operations have occurred at the site. The former extent of the gravel mine extended east and north from the existing mine footprint on the site, and those areas have since reforested. The southeast corner of the proposed project area would be located within formerly mined areas. (Applicant 1, p. 10)

101. 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. 83 - *Corcoran v. Connecticut Siting Council*, 284 Conn. 455 (2007))

102. The distances from the solar facility fence to the nearest property lines and off-site residences for both the originally proposed project and the revised project are listed in the table below.

	30 Main Street (Herbert Property)	**34 Main Street (Herbert Property)**	**44 Main Street (Pavlik Property)**	**48 Main Street (Smaldone Property)**	**Stone Road (Herbert Property)**	**56 Stone Road (Czerczak Property)**	**62 Stone Road (Gaski Property)**	**72 Stone Road (Diaz Property)**	**29 Wildcat Road (Carder Property)**
Distance to Property Line - Originally Proposed Project	130 feet	75 feet	48 feet	52 feet	60 feet	42 feet	35 feet	35 feet	300 feet
Distance to Property Line – Revised Project	93 feet	97 feet	110 feet	151 feet	175 feet	192 feet	35 feet	35 feet	300 feet
Distance to Residence – Originally Proposed Project	860 feet	N/A (vacant)	690 feet	765 feet	N/A (vacant)	130 feet	600 feet	680 feet	460 feet
Distance to Residence – Revised Project	823 feet	N/A (vacant)	752 feet	864 feet	N/A (vacant)	281 feet	600 feet	680 feet	460 feet

(Applicant 5, response 13)

Project Description

Solar Array

103. For the originally proposed project, the Applicant would install 10,010 fixed bifacial Risen solar panels rated at approximately 400 Watts direct current (DC) each and 2,652 fixed bifacial Trina solar panels at 380 Watts DC each would be installed on the site. See Figure 2 titled "Originally Proposed Project." (Applicant 1, p. 14 and Attachment B – Solar Panel Specification Sheets)

104. The revised project includes a shift of the solar facility to the south to address comments and concerns from neighbors. It would also increase setbacks from abutting properties to the west and north of the project. See Figure 4 titled "Comparison of Originally Proposed Project and Revised Project." (Applicant 5, response 2)

105. The revised project would still consist of a mix of 380 Watt and 400 Watt solar panels, but the total quantity of solar panels would be reduced by approximately 468. See Figure 3 titled "Revised Project." (Tr. 3, p. 187)

106. The panels would be oriented facing south and set at a 25-degree angle, extending to an approximate height of 10 feet above grade and approximately 3 feet above grade at the bottom edge. (Applicant 1, p. 56 and Attachment A; Applicant 4, response 23)

107. The solar panels would be installed on a racking system secured to the ground via screw posts installed approximately 8 to 10 feet into the ground. (Applicant 1, p. 14; Applicant 4, responses 47 and 56)

108. Solar array rows (panel edge to panel edge) would be spaced 12 feet apart. Once installed, the horizontal width of the panel row would measure approximately 12.3 feet (from bottom edge to top edge of 25 degree angle). (Applicant 4, response 27; Applicant 1, p. 56)

109. The solar facility would be surrounded by an eight foot tall fence with privacy slats. (Applicant 1, p. 14; Applicant 4, response 2)

110. The Applicant has minimized the land area required to meet its capacity goals. (Tr. 1, p. 40)

111. The total AC power output (or nameplate rating) of the project would be approximately 3.5 MW at the point of interconnection, taking into account losses. See section titled "Electrical Interconnection" below. (Applicant 4, response 14)

112. The Applicant's LREC contracts for the facility do not have penalties if the project sells less RECs than the Maximum Annual Quantity (MAQ). If the project generates more RECs than the MAQ in a given year, Eversource will not buy these surplus RECs under the contract terms but they can be sold on the spot market. (Applicant 4, response 6; Tr. 1, p. 34)

Site Access

113. Access to the site would be via an approximately 1,400 foot long existing access road extending north from Prospect Street that traverses the site's sand and gravel pit to the south of the project area. The existing access road is comprised of approximately 80 percent asphalt millings and 20 percent gravel. No upgrades to the road would be required to facilitate the construction and maintenance of the solar facility. (Applicant 1, p. 14; Applicant 4, response 26)

Electrical Interconnection

114. A 23-kV electrical interconnection would run underground from the project transformers to an existing 23-kV Eversource electrical distribution line located along Prospect Street. The underground interconnection route would generally follow the existing access drive. (Applicant 1, pp. 14-15)

115. Approximately nine new poles near Prospect Street of roughly 40 to 45 feet tall would be required for the interconnection. Five would be installed by Eversource to support Eversource-owned equipment, and four would be installed by the Applicant to accommodate its equipment. (Tr. 1, pp. 41, 105-106; Tr. 3, pp. 190-191)

116. The point of change of ownership would be the last two poles owned by Eversource. Eversource would own/control the existing electrical distribution up to the two primary metering poles. Two primary metering poles are required by Eversource to accommodate two separate interconnections in support of the two LREC contracts. (Tr. 1, p. 106; Tr. 3, pp. 190-191)

117. The existing 23-kV distribution line along Prospect Street is three-phase and would not require upgrades to facilitate the interconnection of the proposed solar facility. (Applicant 4, response 30)

118. On February 10, 2020, the Applicant received contingent approval from Eversource indicating that Eversource had completed its review and determined that the proposed generation would not have an impact on the distribution system. (Applicant 4, response 12)

119. The proposed electrical interconnection is not required to be reviewed by ISO-NE. (Applicant 4, response 28)

Project Construction

120. The proposed construction sequence would include, but not be limited to, the following:

Phase 1 – Clearing and Site Erosion Controls

a) Survey flag limits of clearing;
b) Clear trees and brush;
c) Only stump and grub areas for perimeter erosion control measures and east and west stormwater quality basins;
d) Install erosion and sedimentation controls; and
e) Install stormwater quality basins.

Phase 2 – West Array

a) Stump and grub the remainder of the site;
b) Perform grading for west array;
c) Install racking posts;
d) Install solar panels and complete electrical installation; and
e) Hydro-seed with wildflower mix.

Phase 3 – East Array

a) Stump and grub the remainder of the site;
b) Perform grading for west array;
c) Install racking posts;
d) Install solar panels and complete electrical installation; and
e) Hydro-seed with wildflower mix.

Phase 4 – Perimeter Limits of Disturbance

f) Complete restoration of all perimeter areas with wildflower mix;
g) Complete landscaping;
h) Install fencing;
i) Install equipment pad and underground utilities to pole location on Prospect Street; and
j) Maintain all erosion and sedimentation controls until turf and all up-slope areas are established.

(Applicant 1, pp. 18-19)

121. The Applicant would comply with the requirements of the DEEP Stormwater Permit with respect to site stabilization seeding/growing season details. (Tr. 1, pp. 129-130)

122. A total of approximately 16 acres of trees would be cleared to allow for construction and operation of the originally proposed project. The revised project would reduce the total tree clearing to about 14 acres. (Applicant 1, p. 17; Tr. 1, p. 118)

123. The project was designed to result in minimal alteration to existing on-site slopes. The desired slope within the solar array areas is approximately 8 percent. (Applicant 4, response 53b)

124. No cut or fill is anticipated to be required for project access because no new access construction is proposed. Approximately 12,000 cubic yards (cy) of cut and 7,000 cy of fill would be required for solar field grading based on the originally proposed project. Excess cut material would be distributed within the site's existing earth work/removal operations area. (Applicant 4, response 53f and 53g)

125. Projected cut and fill numbers for the revised project would remain comparable to the originally proposed project; however, about 1,000 cy would be used on-site to create berms. (Tr. 3, pp. 190-191)

126. If approved, construction would commence in September 2021 and would be completed for commissioning in approximately December 2021. (Tr. 1, pp. 107-108)

127. Typical construction work hours would be Monday through Friday, 7:00 a.m. to 4:00 p.m. Saturday work might be necessary, but is not anticipated at this time. (Tr. 1, p. 108)

Facility Operation

128. The estimated capacity factor (on an AC MWh/AC MWh basis) would be approximately 21.9 percent for the first year of operation. (Applicant 7, Late Filed Exhibit E)

129. The proposed project would be expected to produce approximately 6,714,000 kilowatt-hours (kWh) or 6,714 MWh of AC electrical energy in the first year of operation. (Applicant 7, Late Filed Exhibit E)

130. The maximum efficiency of the Trina 400 Watt solar panels is 20.2 percent, and the maximum efficiency of the Risen 380 Watt solar panel is 19.4 percent. (Applicant 4, response 15)

131. As the solar panels age, power output would decline by roughly 0.5 percent per year. (Applicant 4, response 16)

132. A battery storage system is not proposed for this project at this time. In the event that battery storage is deployed at the site in the future, the Applicant anticipates that it would be installed on the customer side of the inverters. It would not affect the existing interconnection approval with Eversource, and it is not expected to impact the LREC contract. (Applicant 4, response 17)

Operations and Maintenance

133. The Applicant 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, pp. 19-20 and Attachment B – O&M Plan)

134. Grounds maintenance requirements are listed below.

Task	Frequency
On-site ground inspection	Monthly
On-site visual inspection of array and equipment	Once per year or per manufacturer requirements
Mechanical and electrical inspection	Once per year or per manufacturer requirements
Panel cleaning	As needed
Mowing and trimming	Two to three times annually or more as required to maintain a safe site
Snow removal (from access roads and equipment pads only)	As needed
Perimeter fence inspection	Once per year
Stormwater management area inspection	Once per year or per stormwater management plan

(Applicant 1, p. 21 and Attachment B – O&M Plan, Section 6.4)

135. The Applicant does not plan to remove snow from the solar panels. (Applicant 1, Attachment B – O&M Plan, Section 6.3.3)

136. The Applicant's O&M service provider would provide 24/7 remote monitoring for alarm and performance data of the system. (Applicant 1, Attachment B – O&M Plan, Section 5)

Project Decommissioning

137. The project's solar panels and inverters have a lifespan of approximately 35 years. (Applicant 1, p. 14)

138. The Applicant provided a decommission plan including infrastructure removal plans and site restoration plans consistent with provisions of the lease agreement with the property owner that address removal of the solar facility and other fixtures. (Applicant 4, Attachment A; Applicant 4, Response 8)

139. The Applicant obtained TCLP test results from the manufacturers of the Trina and Risen solar panels. Per the test results, these solar panels would not be characterized as hazardous waste at the time of disposal. (Applicant 4, Revised Response 38 dated April 23, 2021)

Public Safety

140. 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 1, p. 24)

141. The Applicant is prepared to provide assistance and/or training in the event that such assistance or training is requested by local emergency responders. (Applicant 4, response 34a)

142. The Applicant would coordinate with the Town police and fire departments regarding access to the facility and emergency shut-off switches. Each of the entrance gates to the facility would have a universal key lock (e.g. Knox lock) for emergency responders. (Applicant 1, p. 24)

143. On December 16, 2020, DEEP indicated that, based on the water volume storage, height of berms and water discharge locations at grade level, no further dam safety requirements are necessary for the proposed project. (Applicant 1, response 52, Attachment H)

Aviation Safety

144. The nearest federally-obligated airport is Robertson Field Airport, located approximately 4.6 miles southeast of the proposed solar facility. (Applicant 4, response 32)

145. By letters dated July 22, 2020, the Federal Aviation Administration (FAA) issued Determinations of No Hazard to Air Navigation (No Hazard Determinations) for the proposed project based on the Applicant's filings for 7 select points on the project footprint. The No Hazard Determinations expire on January 22, 2022 unless construction commences or it is extended/revised by the FAA. (Applicant 1, Attachment R – No Hazard Determinations)

146. A glare analysis is not required for the proposed project. Also, no marking or lighting is required for aviation safety. (Applicant 4, response 32; Applicant 1, Attachment R – No Hazard Determinations)

Noise

147. The proposed facility would be considered a Class C (industrial) noise emitter under DEEP Noise Control Standards. The DEEP Noise Limit for a Class C source emitting to a Class A receiver is 61 dBA during the daytime and 51 dBA during the nighttime. (Applicant 1, p. 55; RCSA §22a-69-3.5)

148. The loudest proposed equipment for the project would be a 2,000 kilovolt-ampere transformer that would generate a maximum sound level of 68 dBA at one a distance of one foot. By the Inverse Square Law, with the nearest property line approximately 476 feet* to the west, the projected noise level at the nearest property line would not be expected to exceed 14.5 dBA.

*This distance remains the same for the originally proposed project and the revised project.

(Applicant 1, p. 55; Tr. 3, p. 193-194)

149. The sources of noise for the proposed project would only operate in the daytime. (Applicant 1, p. 55)

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

Environmental Effects

Air Quality

151. The proposed project would meet DEEP air quality standards. (Applicant 1, p. 5)

152. During construction, there is potential for temporary, mobile source emissions associated with vehicles and construction equipment; however, air quality impacts would be de minimis. Notwithstanding, the Applicant would utilize protective measures including, but not limited to, prohibiting excessive idling times of equipment; properly maintaining all vehicles and equipment; ensure that all on-site and off-road equipment complies with the latest U.S. Environmental Protection Agency (EPA) standards for diesel emissions; and watering/spraying construction equipment to minimize dust and particulate releases. (Applicant 1, p. 54)

153. During operation, the proposed project would not produce air emissions e.g. regulated air pollutants or GHGs. (Applicant 1, p. 54)

154. An equivalently-sized natural gas fueled electric generating facility would produce about 214,562 metric tons of carbon dioxide equivalent (MT CO_2eq) over 20 years of operation. The proposed solar facility would have a net carbon emissions of approximately 30,934 MT CO_2eq or about 85.6 percent less than a natural gas-fueled facility over 20 years of operation. (Applicant 4, response 43)

Water Quality

155. The proposed project would meet DEEP water quality standards. It would not consume water during its operation. (Applicant 1, pp. 5, 23)

156. The proposed project would be located within the Federal Emergency Management Agency-designated unshaded Zone X, an area of minimal flooding located outside both the 100-year and 500-year flood zones. (Applicant 1, pp. 51-52)

157. The project would not be located within a DEEP-designated Aquifer Protection Area. (Applicant 1, p. 52)

158. The Applicant does not anticipate ground water (e.g. well) impacts would result from construction of the project. Any vibrations that may result from installing the racking system for the facility would not be expected to cause sediment releases, and no disruption to well water flow and/or quality is anticipated. (Applicant 4, response 35)

159. The Applicant would not store fuels on site other than fuel associated with standard construction equipment and vehicles to be used on the subject property. The Applicant has a Petroleum Materials Storage and Spill Prevention Plan that includes, but is not limited to, a requirement that any refueling of construction vehicles occur on an impervious pad onsite that would be located at least 100 feet from any wetlands/watercourses. (Applicant 4, response 36)

160. The Applicant would utilize a biodegradable transformer insulating oil. (Applicant 4, Attachment 6)

161. The solar panels would be cleaned if they experience sufficient soiling such that it adversely affects the output. Cleaning would be performed with water and a soft-bristled broom if necessary. No chemicals would be used for panel cleaning. (Applicant 1, Attachment B, Operations and Maintenance Plan, Section 6.3.2)

Stormwater

162. 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)

163. 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))

164. 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)

165. The Council may impose a condition that requires subsequent compliance with DEEP standards and regulations. (Council Administrative Notice No. 81)

166. 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, pp. 50-51)

167. The Applicant's proposed stormwater system is designed to manage the water quality volume through detention and the slow release of water in a manner that would not increase peak flow rates. (Applicant 1, p. 52)

168. On December 16, 2020, the Applicant met with DEEP Stormwater Division to discuss the project's compliance with the final draft of Appendix I. Subsequent to that meeting and prior to submitting its application for a DEEP Stormwater Permit, the Applicant provided a separate detail sheet for each basin including results from two test pits per basin. (Applicant 4, response 52)

Wetlands and Watercourses

169. 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.)

170. 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)

171. 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)

172. 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*.)

173. A total of three wetlands and two watercourses are identified within the project's study area. (Applicant 1, p. 47)

174. The buffers for wetlands and watercourses based on the originally proposed project versus the revised project are listed below.

Wetland/Watercourse	**Distance from Project Limits of Disturbance for Originally Proposed Project**	**Distance from Project Limits of Disturbance for Revised Project**
Whigville Brook	1,021 feet	~750 feet
Wildcat Brook	192 feet	~192 feet
Wetland 1	230 feet	~230 feet
Wetland 2	666 feet	~395 feet
Wetland 3	111 feet	~111 feet

(Applicant 1, p. 50; Applicant 7, Late Filed Exhibit A, Original Plan Vs. New Plan Drawing)

175. There would be no direct wetland impacts. The Applicant would utilize erosion and sedimentation control measures per the 2002 E&S Guidelines to avoid adverse effects to these resources. (Applicant 1, p. 50)

Vernal Pools

176. Vernal pool surveys were conducted between late March through early June 2019. One pool area in Wetland 1 was observed, but it was determined that it does not function as a vernal pool. Thus, no vernal pools occur near or in the project area. (Applicant 1, p. 51 and Attachment L – Vernal Pool Monitoring Report, pp. 1-3)

Visibility

177. The solar panels are designed to absorb incoming solar radiation and minimize reflectivity such as that only about two percent of the incidental light would be reflected off the panels. (Applicant 1, p. 56)

178. The nearest scenic road is Route 69, a state-designed scenic roadway located approximately 0.7 mile to the west of the site. The project is not expected to be visible from Route 69. (Applicant 1, p. 48)

179. The nearest publicly accessible recreational resource is the Nassahegon Forest Trail located approximately 0.63 mile northwest of the proposed solar facility. The Sessions Wildlife Management Area is located approximately 0.70 mile to the southwest of the proposed facility. The proposed facility is not expected to be visible from either of these locations. (Applicant 1, pp. 54-55 and Attachment Q – Viewshed Analysis Map)

180. Generally, views of the project would be limited due to the relatively low height of the facility, i.e. the solar panels reaching a height of approximately ten feet. (Applicant 1, p. 56)

181. The shift of the project to the south and increased setbacks associated with the revised project would keep a larger forested buffer intact than originally planned. This wooded buffer would help to obfuscate potential views of the project from neighboring properties to the north and west. (Applicant 5, response 2; Applicant 7, Late Filed Exhibit A)

182. The Applicant has developed a landscaping plan that includes the planting of native evergreen species such as White Pine or Norway Spruce trees outside of the fence area. The landscaping plan also contains earthen berms ranging from approximately four to six feet in height in select locations along the northern and western sides of the facility near abutting properties. (Applicant 5, response 2; Application 7, Late Filed Exhibit B – Landscaping Plan)

183. The Applicant reached out to Eversource to discuss plans to mitigate visual impacts associated with Eversource's interconnection design. The Applicant and Eversource are evaluating pad-mounted equipment as an alternative to pole-mounted equipment and possibly relocating some of the equipment farther away from the road. (Applicant 5, response 30; Tr. 3, pp. 191-193)

Historic and Archaeological Resources

184. A Phase IA Cultural Resources Assessment Survey Report (Phase 1A Report) dated February 2020 was prepared by Heritage Consultants, LLC (Heritage) for the proposed project. One previously identified archeological site, Bristol Copper Mine (known as Site 17-1), and Hart's Corner, a district identified on the National Register of Historic Places (NRHP), were both identified within 1 mile of the project area. Both resources are located to the southeast of the project parcel, and construction of the facility would not affect either of them. (Applicant 1, Attachment N – Phase IA Report, pp. 1, 16-17)

185. The Phase IA Report concluded that most of the project area retains a moderate/high potential to contain intact cultural deposits below the plow zone. A Phase IB cultural resources reconnaissance survey of the approximately 12.2 acre of project area with a moderate/high potential for cultural deposits was recommended. (Applicant 1, Attachment N – Phase IA Report, pp. 21-22)

186. A Phase IB Archaeological and Architectural Survey Report (Phase 1B Report) dated March 2020 was prepared by Heritage. In the Phase IB Report, Heritage notes that it performed 133 of 118* planned shovel tests excavated in the 12.2 acre area. One archaeological site known as Locus 1 or Site 20-3** was identified in the field. The Phase IB Report notes that Site 20-3 is not considered significant per NRHP criteria, and no additional archaeological examination of the proposed site is recommended.

*Heritage performed 113 percent of the originally planned quantity of shovel tests.
**Locus 1 was subsequently renamed as Site 20-3 by SHPO.

(Applicant 1, Attachment O – Phase IB Report, p. i)

187. The Phase IA Report and the Phase IB Report were reviewed by SHPO. By letter dated April 8, 2020, SHPO concurs that Bristol Copper Mine and Hart's Corner would not be impacted by the project, and Site 20-3 is not eligible for listing on NRHP. Thus, SHPO determined that no historic properties would be affected by the project, and no additional archaeological investigations are warranted. (Applicant 1, Attachment P – SHPO Letter dated April 8, 2020)

Wildlife

188. On January 12, 2020, a DEEP Natural Diversity Database (NDDB) Preliminary Assessment was provided to the Applicant. This assessment identified the known extant populations of 14 state-listed plant and animal species that occur within or near the boundaries of the proposed site. (Applicant 1, Attachment F, Preliminary NDDB Assessment dated January 12, 2020, p. 1)

189. The 14 state-listed species referenced in the NDDB preliminary assessments include: ground beetle (two different subspecies); pitcher plant moth; crimson-ringed whiteface; eastern pearlshell; mud sedge; hare's tail; pod grass; northern yellow-eyed grass; American bittern; whip-poor-will; slimy sculpin; eastern hognose snake; and eastern box turtle. (Applicant 1, Attachment F, Preliminary NDDB Assessment dated January 12, 2020, p. 1)

190. On September 28, 2020, the Applicant submitted to DEEP NDDB its Natural Resource Assessment Report (NRAR) addressing the state-listed species and significant natural habitats identified by DEEP. The NRAR included a botanical assessment; an invertebrate habitat assessment; a whip-poor-will survey; and an amphibian and reptile survey. Per the NRAR, the only state-listed species observed at the proposed site is the eastern box turtle (EBT), a Species of Special Concern. (Applicant 1, Attachment F, Final NDDB Assessment dated January 7, 2021, p. 1)

191. By letter dated January 7, 2021, DEEP issued its final NDDB determination. DEEP concurs with the NRAR and recommends implementation of protective measures for the EBT. DEEP also requests that the Applicant consult with a DEEP Fisheries biologist regarding the slimy sculpin, a state-listed Species of Special Concern, due to Wildcat Brook and Whigville Brook located in the vicinity of the project. Subsequently, the Applicant reached out to DEEP Fisheries Division but as of April 13, 2021 had not yet received a response. (Applicant 1, Attachment F, Final NDDB Assessment dated January 7, 2021, pp. 1 and 2; Applicant 5, response 45; Tr. 3, p. 196)

Invertebrates

192. The NDDB-identified ground beetles, *Agonum darlingtonia* and *Agonum mutatum*, are both state-listed Species of Special Concern. The pitcher plant moth and the crimson-ringed whiteface are state-listed Threatened Species. The eastern pearlshell is a state-listed Species of Special Concern. A field survey for habitat suitable for these state-listed invertebrates was performed on February 8, 2020. Given the lack of sphagnum peat bog habitat and the nature of the existing ecosystems as viewed during the survey, mitigation measures are not required for the NDDB-listed invertebrate species. (Applicant 1, Attachment H – Invertebrate Assessment, pp. 1-4; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

Plants

193. The mud sedge, hare's tail and northern yellow-eyed grass are state-listed Threatened Species. Pod grass is a state-listed Endangered Species. Field surveys for habitat suitable for these four state-listed plant species were performed on February 23, 2020; February 24, 2020; and March 18, 2020. These plant species occur only in poor and medium fens on deep poorly decomposed organic deposits or "peat bogs." Such habitat was not found to exist within the project area. (Applicant 1, Attachment G – Botanical Assessment, pp. 1-4)

Birds

194. American bittern is a state-listed Endangered Species. This species inhabits long hydroperiod wetlands, specifically freshwater marshes with tall emergent vegetation, particularly cattail and bulrushes. No such habitat is present at the site. (Application 1, Attachment D – NRAR, p. 13; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

195. The whip-poor-will is a state-listed Species of Special Concern. Field surveys were performed on June 8, 2021; June 13, 2021; and June 17, 2021 utilizing silent listening and callbacks. The whip-poor-will was not recorded on the site during any of the three visits. (Applicant 1, Attachment K – Whip-poor-will Survey Report, p. 1; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

Fish

196. The slimy sculpin is a state-listed Species of Special Concern. Due to the significant setback distance from the project area to the perennial streams, a fisheries survey was not conducted. (Application 1, Attachment D – NRAR, pp. 11-12; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

Reptiles

197. The eastern hognose snake (EHS) and the EBT are both state-listed Species of Special Concern. Amphibian and reptile surveys were conducted on May 15, 2020; May 20, 2020; June 1, 2020; June 3, 2020; and June 17, 2020 to determine if the EHS and/or the EBT are present at the site. (Application 1, Attachment D – NRAR, p. 9; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

198. The EHS was not observed during the surveys, but due to its highly cryptic nature, it is still considered to be potentially present. The EBT was confirmed as present at the site. (Application 1, Attachment D – NRAR, p. 20; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

199. The Applicant has prepared an EBT Protection Plan that would minimize the likelihood of mortality for both the EBT and the EHS. (Application 1, Attachment D – NRAR, p. 20; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

Mammals

200. The northern long-eared bat (NLEB), a federally-listed Threatened Species and state-listed Endangered Species, is known to occur in the vicinity of the proposed site. There are no known maternity roost trees in Connecticut. The nearest NLEB hibernacula habitat resource is located in the Town of Morris, approximately 18 miles west of the site. (Applicant 1, p. 40; Council Administrative Notice Item No. 58 – 2015 DEEP Endangered, Threatened and Special Concern Species)

Geology

201. A geotechnical investigation including borings, analysis and laboratory testing was performed at the site. Subsurface conditions at the site were found to include subsoil, fine sand and silt, medium sand, and gravel with cobbles and boulders. It was determined that the best method of post installations would be to pre-drill 100 percent of the holes and utilize ground screws in lieu of driven posts. (Applicant 4, response 56)

Agriculture

202. 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. 48 – Petition No. 1310A, Finding of Fact #345)

203. 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. 70 – Climate Change Preparedness Plan)

204. 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. 70 – Climate Change Preparedness Plan)

205. 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.)

206. 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. Neither the site parcel, nor any portion thereof, is part of the Public Act 490 Program. (Council Administrative Notice Item No. 48 – Petition No. 1310A, Finding of Fact #351; Applicant 4, response 9)

207. 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))

208. 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. 48 – Petition 1310A, Finding of Fact #353)

209. On June 15, 2020, DOAg submitted correspondence on Petition 1437 indicating the proposed facility would not have a material impact on the status of prime farmland in accordance with the applicable provisions of Public Act 17-218. (Council Administrative Notice Item No. 50 – Petition No. 1437)

210. The project (as originally proposed or revised) would not be located on mapped Prime Farmland Soils. The subject property contains approximately 8 acres of tillable and hayed land; however, this is outside of the leased area for the proposed solar array. Thus, consistent with the DOAg correspondence submitted for Petition 1437, the project is not expected to materially impact the status of prime farmland. (Applicant 1, p. 37 and Attachment C – DOAg Letter dated June 15, 2020; Applicant 4, response 10; Tr. 3, p. 189)

Pollinator Habitat

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

212. Two native seed mixes, Showy Wildflower Mix and Warm Season Grass, would be established between the limits of disturbance and the perimeter fence (i.e. immediately outside the perimeter fence area). It would serve to increase habitat value for pollinator insects. (Applicant 1, p. 32)

Forest and Parks

213. The Nassahegon State Forest is located approximately 0.85 mile north-northeast of the proposed facility. The proposed facility is not expected to be visible from this location. (Applicant 1, pp. 54-55 and Attachment Q – Viewshed Analysis Map)

214. On December 1, 2020 (in Petition 1437), DEEP issued a written determination that development of the project would have a material impact on the status of core forest. As part of its Forestland Habitat Impact Assessment Guidelines, the project would result in the loss of approximately 6.98 acres of core forest and a conversion of an additional 7.41 acres to edge forest. DEEP notes that the buffers proposed for the project may be sufficient to protect the water quality of wetlands and watercourses. However, the presence of the EBT is indicative of high-quality core forest habitat; thus, in order to preserve mobility and connectivity for the EBT and other species, current research recommends preservation of 300-foot buffers along wetland movement corridors as a best management practice to maintain forest connectivity. (Council Administrative Notice Item No. 50 – Petition No. 1437, DEEP C.G.S. §16-50k Material Impact to Core Forest Letter dated December 1, 2020)

215. In its correspondence, DEEP expressed concern that narrowing the riparian buffer around Wildcat Brook could effectively isolate the contiguous forest to the north from the forested areas to the south (that include the project area). Thus, a 300-foot riparian buffer forest around Wildcat Brook is recommended by DEEP to maintain forest connectivity. (Tr. 1, pp. 57-58; Council Administrative Notice Item No. 50 – Petition No. 1437, DEEP C.G.S. §16-50k Material Impact to Core Forest Letter dated December 1, 2020)

216. The Applicant notes that while the DEEP Forestland Habitat Impact Mapping and University of Connecticut's Center for Land Use Education and Research Forest Fragmentation Analysis (CLEAR FFA) shows portion of the project within an area mapped as core forest, their accuracy at a site-specific scale is limited due to the satellite-derived land use data. Accordingly, the Applicant conducted a site-specific analysis of contiguous forest and core forest using Esri's ArcMap Software and review of most current aerial photography from Spring 2019. (Application 1, Attachment D – NRAR, pp. 18-19)

217. Based on the Applicant's review and analysis, the site's forest is part of a southerly extension of a larger forest block extending to the north. This southern extension consists primarily of edge forest flanking Wildcat Brook, situated between residential development along Stone Road and Wildcat Road. Because of the existing high level of forest fragmentation present within the southern end of this forest block, the total existing core forest is 22.66 acres. Approximately 6.98 acres of the tree clearing area (for either the originally proposed project or revised project) is considered core forest. (Application 1, Attachment D – NRAR, pp. 18-19)

218. The revised project would reduce the amount of clearing in forest from approximately 16 acres to approximately 14 acres. Core forest impacts would remain the same under either configuration. Thus, there would be a net reduction of forest impact associated with the revised project as compared to the originally proposed project. (Tr. 3, p. 190)

219. To improve the quality of the habitat, the Applicant would utilize two seed mixes developed by New England Wetland Plants to enhance habitat value particularly for the EBT, EHS as well as forest edge birds and pollinator insects. (Application 1, Attachment D – NRAR, pp. 18-19; Tr. 1, p. 118)

220. The Applicant notes that riparian forests and core forests are not required habitat for EBT, although EBTs utilize such types of forest. Based on the site forest types and species types, the Applicant believes that the 192-foot buffer* for Wildcat Brook is adequate.

*Such buffer would remain the same for both the originally proposed project and the revised project.

(Applicant 1, p. 50; Applicant 7, Late Filed Exhibit A, Original Plan Vs. New Plan Drawing; Tr. 3, pp. 252-253)

221. The riparian corridor along Wildcat Brook north of the site that connects to Nassahegon State Forest consists of edge forest and not core forest. The entire Wildcat Brook riparian corridor would maintain its connectivity with the state forest. (Applicant 1, Appendix D, Figure 7; Tr. 1, pp. 88-90)

222. The project site is located in the southern terminus of a larger forest block. Development of the Project would not fragment the existing core forest into smaller blocks but rather, it would reduce its western extent. (Applicant 1, Appendix D, Figures 6 & 7; Tr. 1, p. 90)

Electric and Magnetic Fields

223. 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. 43 – Council's Best Management Practices for the Construction of Electric Transmission Lines in Connecticut)

224. 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. 43)

225. 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. 43)

226. 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. 43)

227. 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 1, Attachment S, Report on Electric and Magnetic Fields, p. 4)

228. During operation of the facility, EMF would be derived from the DC solar panels; the DC cables connecting the solar arrays to the inverters; the inverters that convert DC power to AC power; the proposed underground 23-kV interconnection; and the existing Eversource 23-kV distribution line along Prospect Street. (Applicant 1, Attachment S, EMF Report, p. iii)

229. The solar panels and DC cables would produce static (or 0 Hz) magnetic fields, but would not be expected to produce any disturbance to the existing levels of static magnetic fields that are produced by natural sources, i.e. the earth's geomagnetic field. The existing levels of the earth's static geomagnetic field are about 8,000 times lower than the standard for exposure of the general public to static magnetic fields recommended by ICNIRP. (Applicant 1, Attachment S, EMF Report, p. iii)

230. The inverters would produce AC magnetic fields at frequencies greater than 60 Hz close to the inverters on site, but this would be localized and not an important contribution to AC magnetic fields offsite. (Applicant 1, Attachment S, EMF Report, p. iii)

231. At maximum project output, the current carried by the underground interconnection (that would connect to existing distribution) would be a weak source of MF. It would not be a source of EF because of shielding by the coverings on the underground cables, duct bank and earth covering. (Applicant 1, Attachment S, EMF Report, p. 7)

232. At the maximum output of the project, the additional current injected into the existing 23-kV distribution line along Prospect Street would be less than 90 Amperes, which would not be expected to increase the MF levels outside of the range of distribution lines and would be far below the MF limits specified by ICNIRP post-construction. (Applicant 1, Attachment S, EMF Report, p. iv)

233. All EMF levels, both pre-construction and post-construction, would be below the ICNIRP and ICES recommended exposure limits. (Applicant 1, Attachment S, EMF Report, p. 8)

234. While Council's EMF Best Management Practices for the Construction of Electric Transmission Lines in Connecticut (Council EMF BMPs) apply to transmission lines rather than solar arrays or distribution lines, the project would be consistent with the Council EMF BMPs for no cost/low cost design due to the following factors:

a) The project's solar arrays and related equipment would have negligible off-site EMF; and
b) No new distribution lines would be constructed, i.e. the existing 23-kV distribution line on Prospect Street would not be rebuilt or reconductored as a result of the project;

(Applicant 1, Attachment S, Report on Electric and Magnetic Fields, p. 8)

Costs

235. 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. 47 – Docket No. 470B, Finding of Fact # 75)

236. The total estimated cost of the proposed project as listed is $4.53M. The use of bifacial solar panels does not materially affect this total. Proposed revisions to the project are not expected to affect the total project cost. (Tr. 1, pp. 37-38; Tr. 3, pp. 188-189)

Neighborhood Concerns

237. 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))

238. Pursuant to CGS § 16-50m, the Council, after giving due notice thereof, held a public comment session via Zoom conferencing on Tuesday, March 23, 2021 at 6:30 p.m. (Council's Hearing Notice dated February 17, 2021; Tr. 2)

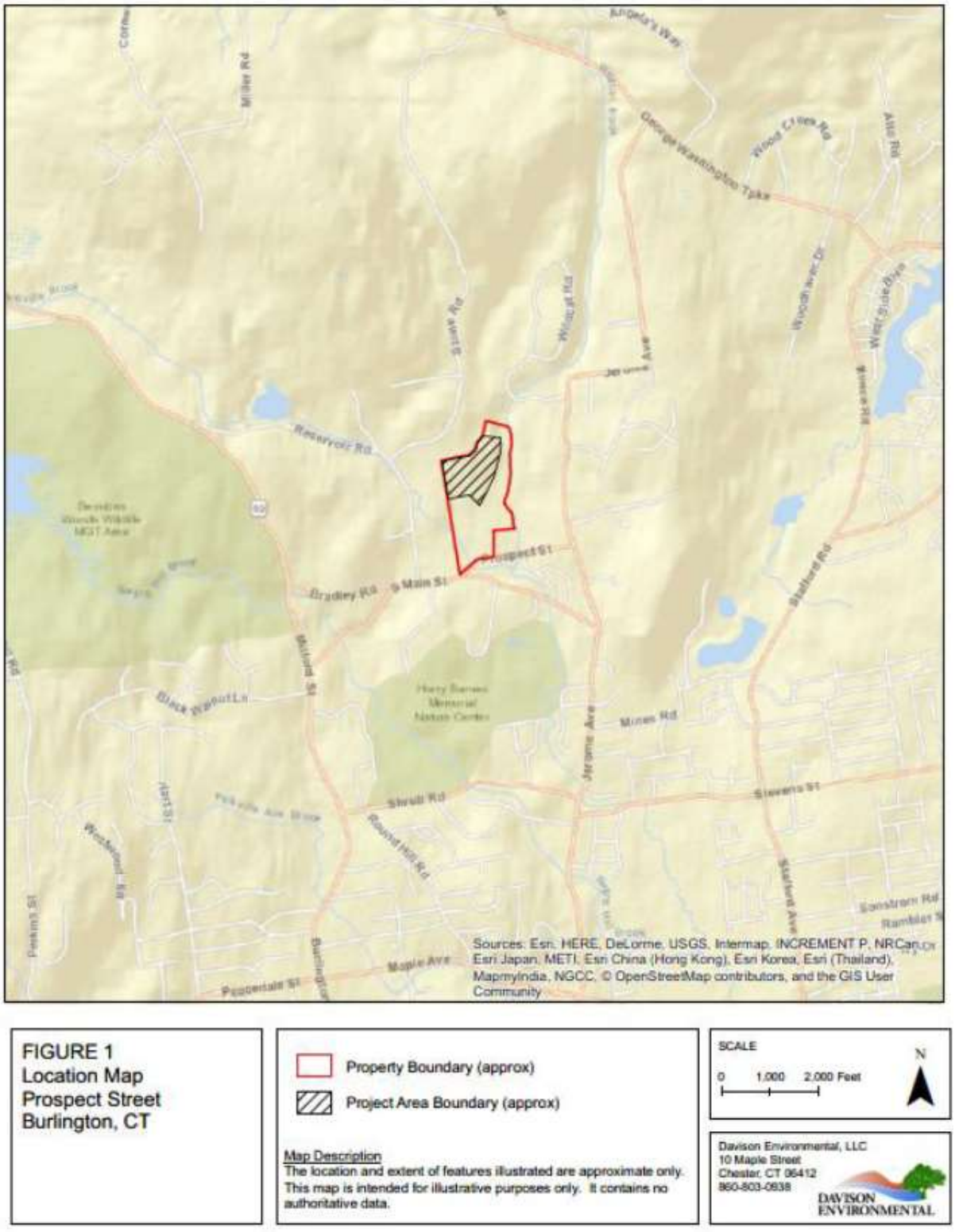
239. Ten members of the public provided oral statements during the Council's public comment session with concerns including, but not limited to, the facility size; buffer distances from abutting properties; berms and landscaping and increased fence height for visual screening; and the aesthetic/visual impact of the electrical interconnection poles configuration. (Tr. 2, pp. 152-174)

240. The Council received four written limited appearance statements regarding the proposed facility with concerns including, but not limited to, buffers/setbacks and need for visual screening. (Record)

241. The Applicant had originally proposed a 7-foot fence to surround the solar facility, but has revised the design to include an eight-foot tall fence with privacy slats on all sides in response to discussions with neighboring property owners. (Applicant 1, p. 14; Applicant 4, response 2; Tr. 1, p. 40)

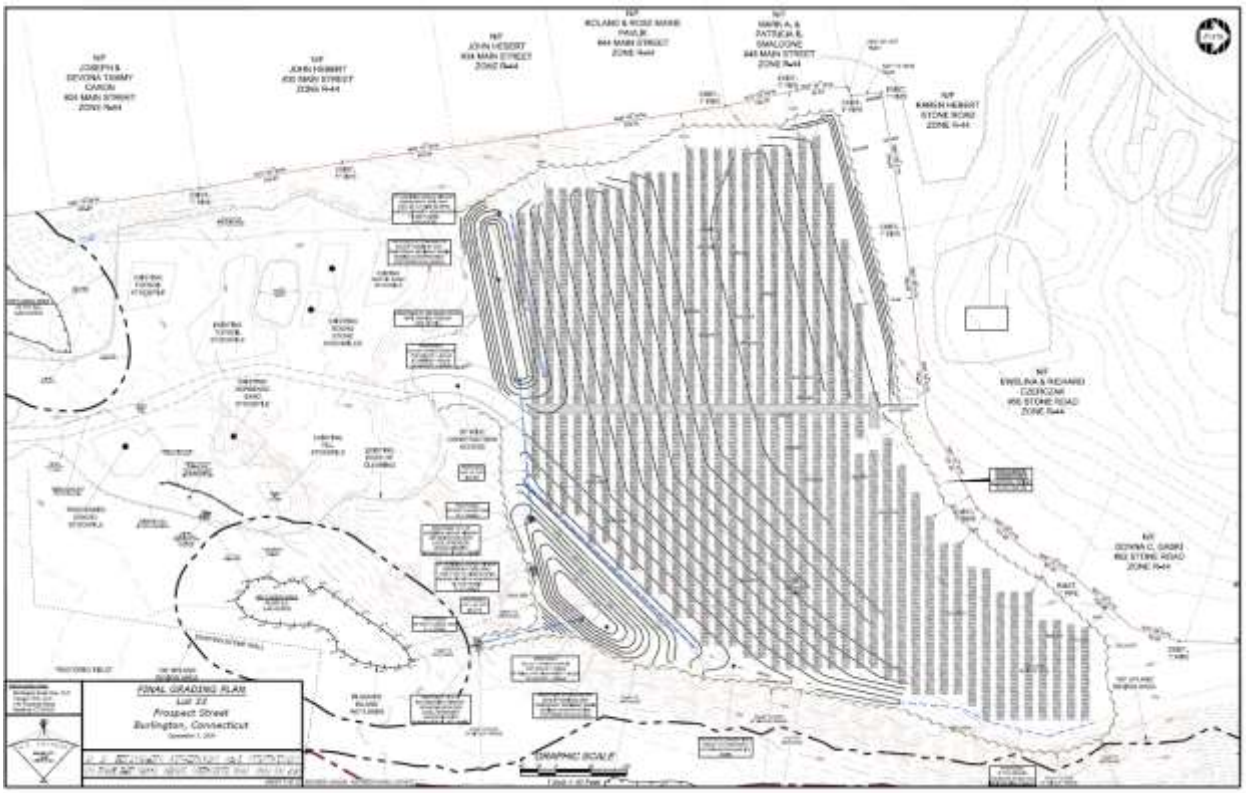
242. In response to neighborhood concerns, the Applicant revised its plans to shift the solar arrays farther to the south increasing setbacks from the northern and western property lines to allow greater forested buffers to remain. (Applicant 4, response 2; Tr. 2, p. 151)

Figure 1 – Site Location



(Applicant 1, p. 7)

Figure 2 – Originally Proposed Project

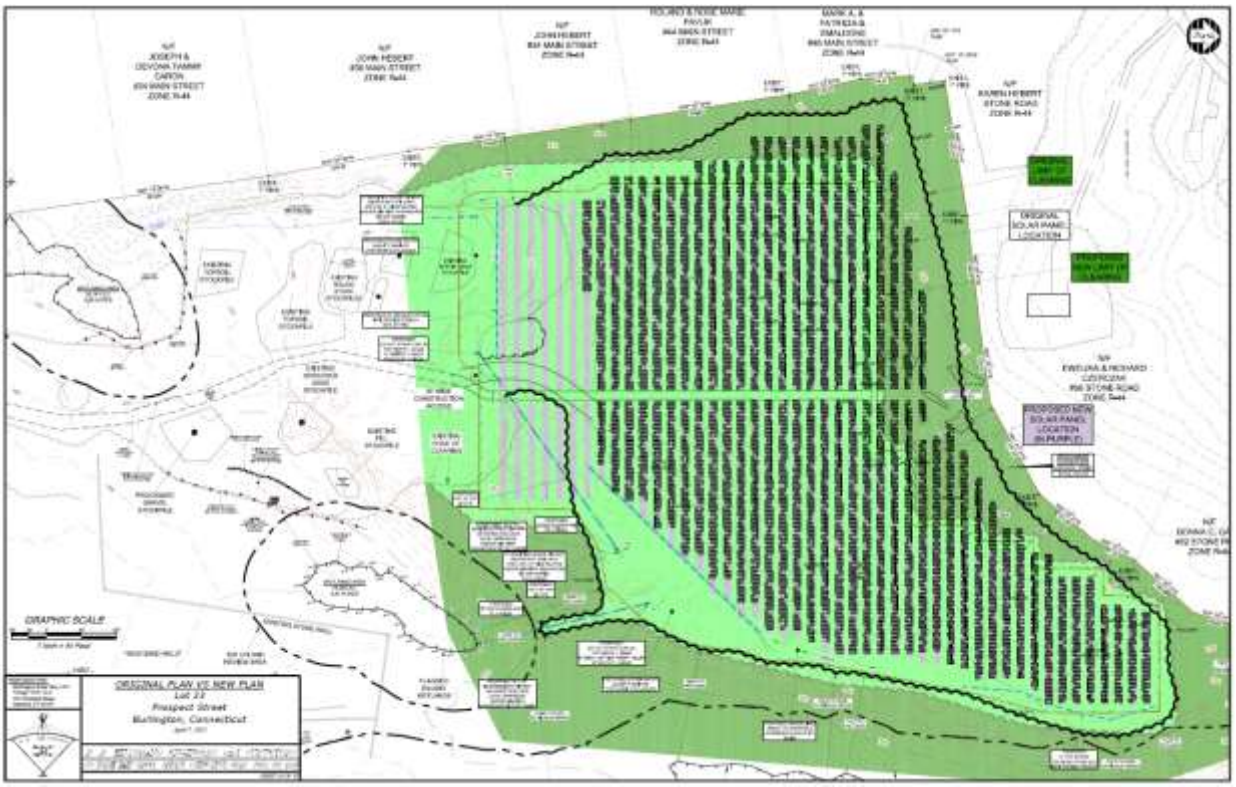


(Applicant 1, Attachment A)

Figure 3 – Revised Project

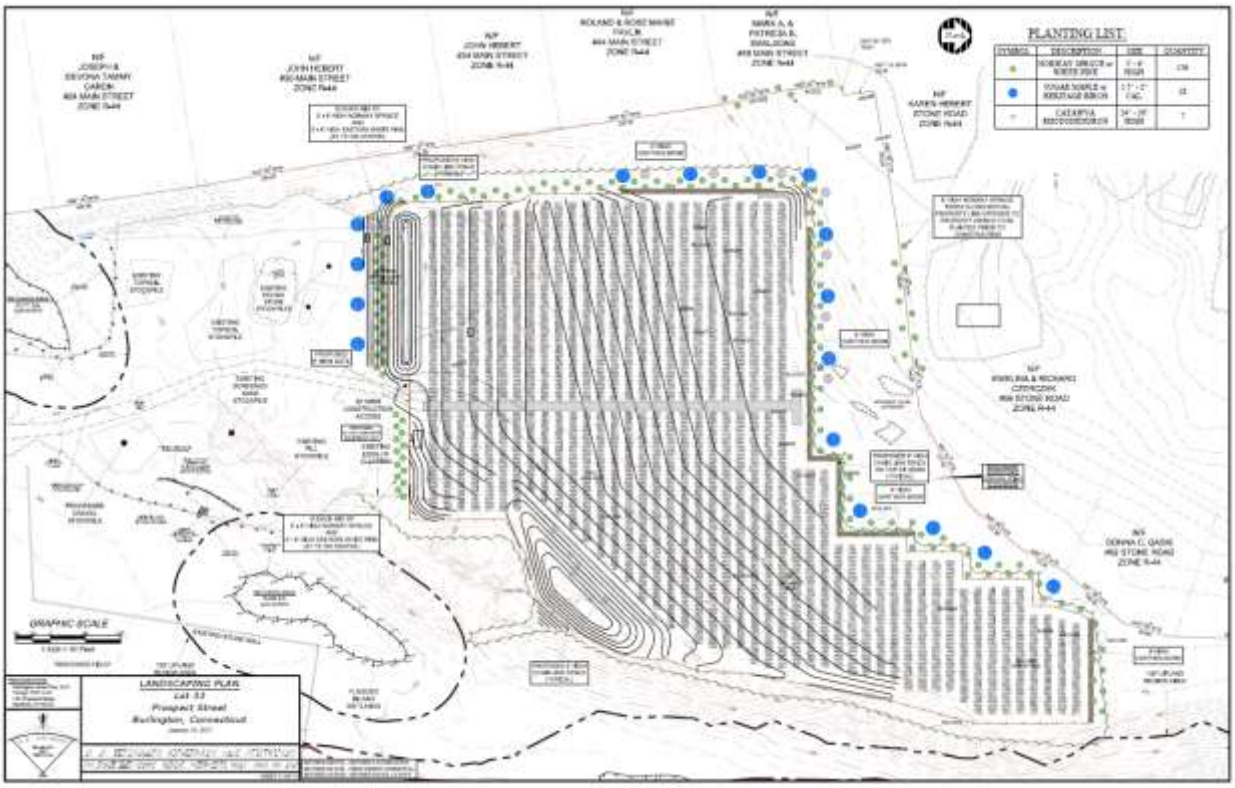
(Applicant 7, Late Filed Exhibit A)

Figure 4 – Comparison of Originally Proposed Project and Revised Project



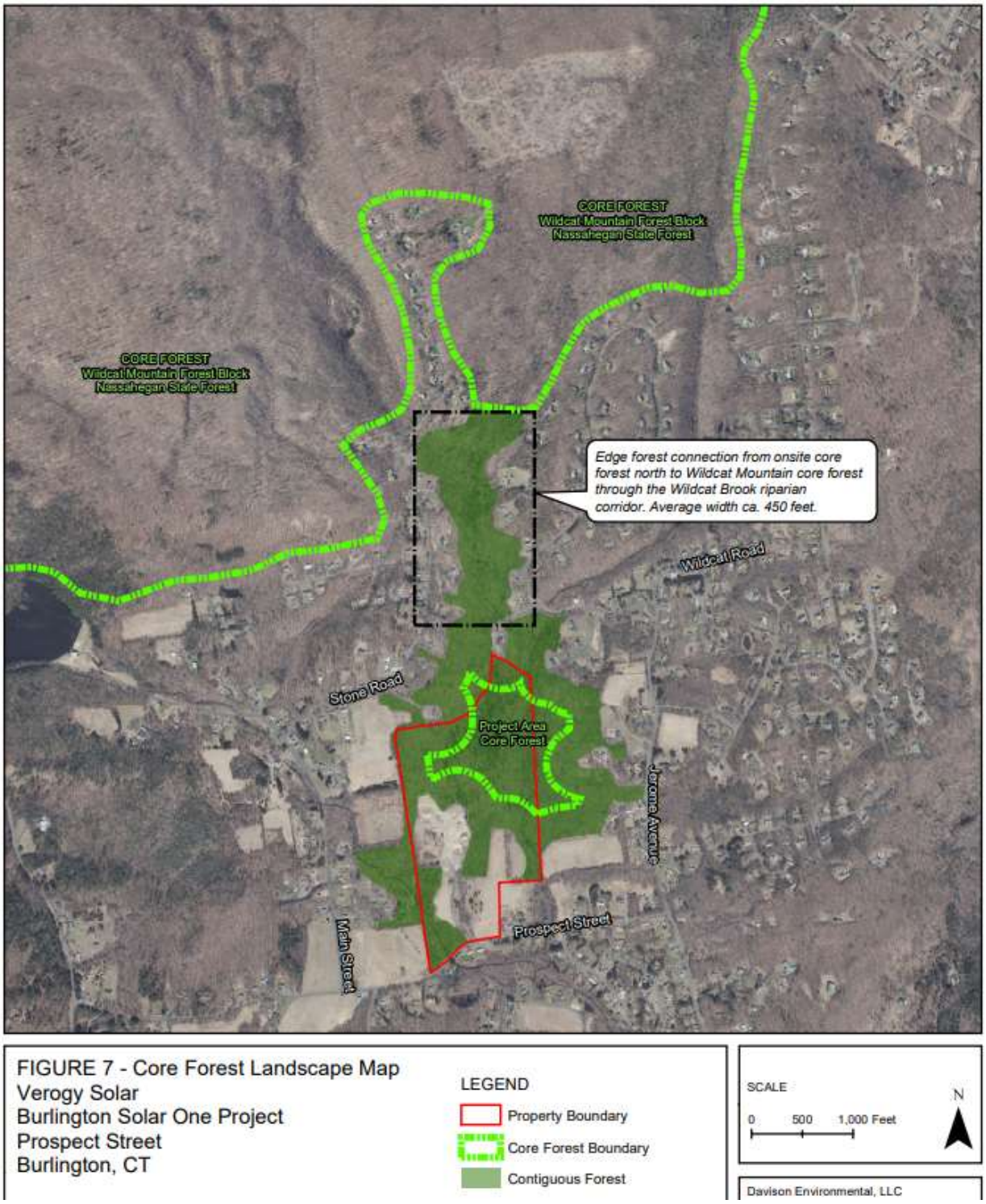
(Applicant 7, Late Filed Exhibit A)

Figure 5 – Landscaping Plan



(Applicant 7, Late Filed Exhibit B)

Figure 6 – Core Forest Map



(Application 1, Attachment D – NRAR, Figure 7)

Appendix B - State Agency Comments

STATE OF CONNECTICUT

COUNCIL ON ENVIRONMENTAL QUALITY

February 24, 2021

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

DOCKET NO. 497 – Burlington Solar One, LLC (Applicant) proposed 3.5-megawatt-AC solar photovoltaic electric generating facility to be located at Lot 33, Prospect Street, Burlington, 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 initially submitted comments on November 20, 2020 regarding this project, when it was submitted as Petition 1437. The Council offers the following additional comments with regard to Docket 497.

1. Eastern Box Turtle

The Council supports the Applicant's efforts to preserve and protect the eastern box turtle (EBT), which is a State Special Concern species afforded protection under the Connecticut Endangered Species Act and listed as a Greatest Conservation Need species in Connecticut. Because the EBT was found in or near the proposed limits of disturbance, the Council is concerned about the applicability of some of the provisions of the "Box Turtle Protection Plan" (Plan) that was presented in Petition 1437 and again in Docket 497. Key provisions of the Plan might not be applicable or effective since construction would likely start after May 31, 2021. Therefore, the Council recommends that the Applicant should 1) review and revise the proposed Plan, as necessary, 2) seek confirmation from the Natural Diversity Database that any proposed changes to the Plan would protect the EBT, and 3) commit to no ground disturbance in areas that might be used by EBT during their hibernation period.

The Applicant's Plan also notes that all existing mining and stockpiling activity within the proposed EBT "Relocation Zone" should temporarily cease while EBT relocation is underway. The Council calls for confirmation that the Applicant actually has control over the gravel mining activities that are outside of the proposed limits of disturbance. If not, are there assurances from the owner/operator of the gravel mining operation that there would be a cessation of the gravel operations to allow for the EBT relocation?

79 Elm Street, Hartford, CT 06106
Phone: (860) 424-4000 Fax: (860) 424-4070
http://www.ct.gov/ceq

2. Core Forest

The proposed construction would require the removal of trees in an area that is approximately 16 acres, resulting in the loss of approximately seven acres of core forest. The Council does not support the destruction of core forest. The Connecticut Department of Energy and Environmental Protection (DEEP) provided a letter on December 1, 2020 (attached) in the Petition 1437 proceeding. In it, DEEP found that the proposed clearing of 16.6 acres of forest for site development would material affect the host block of core forest on the project site.

The Applicant's cover letter of January 22, 2021 for this Docket stated "Burlington Solar One decided that the Application process would be more appropriate in light of correspondence received by the Connecticut Department of Energy and Environmental Protection pursuant to PA 17-218." While the Applicant is legally exercising an option to achieve a favorable regulatory outcome by withdrawing Petition 1437 and filing an application for a Certificate, the impacts on the environment, and especially core forest impacts, remain largely the same. The legislative intent of Public Act 17-218 is to protect agricultural land and core forest. In light of DEEP's letter, noted above, indicating that the proposed project would materially affect core forest and the connectivity of important habitat, the Council recommends that the Applicant revise the proposed project or evaluate other options for the development of a renewable energy facility on land that would have limited impacts on important environmental resources.

3. Wetlands Habitat

In its letter of December 1, DEEP referenced its Guidance Regarding Solar Arrays and the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, and stated that the "buffers proposed in this petition may be sufficient to protect the water quality of the site's wetlands and watercourses, but current research calls for the preservation of 300' buffers as a best management practice to protect connectivity in the forest along wetland movement corridors. The current proposal does not provide for this level of protection for two of the three identified wetlands at the project site. We therefore deem that the habitat impacts to this core forest block that would arise from the solar development as proposed would materially affect this host block of core forest." The Council recommends that the Applicant increase the buffer distance around the existing wetlands for a riparian corridor to 300 feet to protect connectivity in the forest along wetland movement corridors, as recommended by DEEP.

4. Groundwater

The application states that the groundwater underlying the proposed site is classified by DEEP as "GAA" and "GAAs". The Council recommends that the Applicant develop and utilize a Spill Prevention, Control and Countermeasure Plan during construction and operation of the proposed facility to reduce the likelihood and impact of any spills on the proposed site.

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

Attachments (1) Letter from the Connecticut Department of Energy and Environmental Protection dated December 1, 2020

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

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

Phone:

March 10, 2021

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

Dear Ms. Bachman:

Subject: Docket 497
3.5 MW Solar-based Electric Generating Facility
33 Prospect Street
Town of Burlington

The Department of Transportation has reviewed the above-mentioned Petition and has no comments.

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

Very truly yours,

Andrzej Mysliwiec

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

Latoya Smith:ls
bcc: Scott A. Hill
Gregory M. Dorosh -Leo Fontaine-Andrzej Mysliwiec-Derek Brown-Latoya Smith
James Chupas- John DeCastro-Christopher Brochu
Kevin Carifa- Raquel Ocasio