

## City of Beverly / Kearsarge Beverly LLC Solar Project: Project Narrative

April 14, 2021

### Solar Project Overview

The City of Beverly (City) is working with Kearsarge Beverly LLC (Kearsarge) to install a solar + storage portfolio in excess of 3.5MW AC on 7 City owned properties – all energy from the projects will be credited to the City. The solar project is a critical element of the City's regional Climate Action Plan and its goal to become a net-zero community by 2050 and was awarded to Kearsarge through an RFP process in May of 2019. In keeping with the overarching goals of the SMART program, the City has worked with Kearsarge to avoid greenspace and locate the projects on "already developed" properties. The systems include 4 rooftops and canopy systems in 5 parking lots and one traditional ground mounted array. The ground mount array will replace / update the existing Greenergy Park system located behind the high school.

It is the assessment of the City Inspectional Services and Planning Department that a) the canopy and ground mount projects are by-right uses, as they will be in place to exclusively serve municipal purpose on municipal property, and b) they are subject to the reasonable dimensional requirements of the ordinance. In order to achieve City goals and be in concert with Beverly planning, the City has requested the canopy and ground mount projects undergo a Site Plan Review by the Planning Board, consistent with the requirements of the current Solar Ordinance for a large ground mount solar system.

In addition to the energy and environmental components of the projects, the systems will provide lease and tax revenue to the City without adversely impacting neighbors, being a drain on municipal services with no requirements for water/sewer, schools or police and finally, without an increase in traffic.

### Project Description

Work under this application, involves the installation of canopy systems in 5 parking lots, a ground mounted system and two battery storage systems (BESS).

A typical canopy will involve a steel I-Beam frame anchored to poured foundations. Purlins are attached to the top of the frame, and modules are fixed to the purlins. Minimum clearance under the canopy structures will be 13.5 feet to allow for municipal vehicles. The highest point on the parking canopy structures will range between 16.5 feet and 26 feet above grade, depending on the canopy size, slope (3-7 degrees) and site topography. In total, the canopies will represent approx. 1,979 kW AC in capacity.

The ground mounted system will consist of a frame attached to posts that will be screwed or driven into the ground. Purlins are attached to the frame and the modules to the purlins. The system will be installed within the existing fenced Greenergy facility. The typical design consists of rows of two modules installed in Portrait orientation. The front edge of the southerly facing PV modules will typically be 3 feet off the ground surface, with the back edge typically at 8 feet (dependent on topography). Each row will be separated by approx. 10-12 feet. In total, the ground mount will represent approx. 1,000 kW AC in capacity.

The proposed BESS systems will be self-contained, generally in 40-foot shipping containers (Conex boxes), which are then outfitted with a battery system and controls and a fire suppressant system. We expect the middle school will have 1 x container and the high school will have 2 x containers.

For the canopy, the ground mount and the battery, the systems will be connected to inverters to convert the energy from DC to AC, and then to a transformer before connecting to the utility system. Labeled switches / disconnects will be located at each site to shut down the arrays for maintenance or as required.

In addition to the provided plan sets, the following information is provided as required under the referenced sections of the Large Ground Mount Solar Ordinance (§300-135).

Section D (3) (a)

*[1-3] Site Plan / blueprints.*

- **See attached plan set**

*[4] One / three-line electrical diagram*

- **See attached single line diagrams**

*[5] Documentation of major system components*

- **See attached equipment binder**

*[6] Name, address and contact information of proposed installer.*

- **Alliance Clean Energy Inc. (ACE): 1600 Osgood St, Suite 2043, North Andover, MA 01845 (843-860-4826)**

*[7] Name address and signature of the property owners, the applicant, the developer and any other party that produced material for the special permit application.*

- **Owner: City of Beverly. 191 Cabot St, Beverly MA, 01915 (978-921-6000)**
- **Developer: Kearsarge Beverly LLC. 1380 Soldiers Field Rd, Suite 3900, Boston, 02135 (617-393-4222)**
- **Engineer: Meridian Associates Inc: 500 Cummings Center, Suite 5950, Beverly, MA 01915 (978-299-0447)**

*[8] Name, contact information and signature of any agents representing the owner or applicant.*

- **N/A**

*[9] Provision of Water, including what is needed for fire protection.*

- **No additional water provision required.**

*[10] locations of local and national historic districts.*

- **No impacted local or national historic districts.**

*[11] List of Hazardous Materials proposed to be located on the site in excess of household quantities and a plan to prevent their release into the environment.*

- **Solar arrays have no associated hazardous materials. They are mostly steel, glass and copper. Li-Ion battery systems are fully self-contained and will be installed per MA code with fire suppressant systems built in.**

*[12] Locations of permanently protected open space, priority habitat areas, and a BioMap2 Critical Natural Landscape Core Habitat mapped by the Natural Heritage and Endangered Species Program (NHESP) and "habitat of potential regional or statewide importance," also known as "important habitat" mapped by the DEP.*

- **No affected open space.**

*[5] Documentation of how all system components shall be secured to the ground in a manner that ensures their stability in severe weather conditions.*

- **See attached plan set but the panels are attached to withstand hurricane force winds per code.**

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Section D (3)

*(b) Proof of liability insurance.*

- **A letter of insurability for ACE and the most recent certificate of insurance for Kearsarge Energy is attached.**

*(c) Documentation of actual or prospective access and control of the project site.*

- **There is existing physical access to each site. Contractually an LOI is in place with the City of Beverly. Long term site control will be governed by the SPSA/Lease agreement between Kearsarge Beverly LLC and the City that has been negotiated waiting for signature.**

*(d) Operations and Maintenance Plan*

- **See attached draft O&M plan. Typically, the draft O&M and Emergency Response plans will be finalized after system construction in order to capture any changes through the construction process. Individual equipment / labeling can change slightly which would change the O&M and Emergency Response plans.**

*(e) Emergency Response Plan*

- **See attached draft Emergency Response plan.**

*(f) Stormwater management report and checklist*

- **A stormwater letter is provided for each of the canopy sites. A stormwater checklist is provided for the Ground Mount Site.**

*(g) Description of financial Surety that satisfies subsection K (3)*

- **See K (3) below**

*(h) Zoning district designation and the zoning overlay for the parcel of land comprising the project site*

- **Noted on plan sets.**

*(i) Evidence of utility notification as described in Subsection C (4)*

- **ISA agreements are in place for McPherson and 10/11Pond and in the final stage of approval for 100 Sohier and 502 Cabot.**
- **See Attachment for evidence of utility submittal.**

*(j) Landscape plan that satisfies Subsection F.*

- **See subsection F below.**

*Section E - Dimension and height requirements*

- **Setbacks** – as a by-right use, the solar systems have been shown on the plans with setback requirements per the underlying zoning districts with the exception of those lot lines that abut residential districts where the setback is shown as 50ft. We have shown a 50ft setback from the abutting lot line at 11 Pond, and a 50ft setback from all lot lines at 502 Cabot and 100 Sohier. 10 Pond and 4 McPherson are shown with no setback requirement - We are requesting relief from setback requirements at 100 Sohier Rd (the ground mount), and 11 Pond Street.
- **Appurtenant structures** – Switchgear, transformers and storage systems will conform with the underlying zoning requirements. Screening treatment of the storage systems will be agreed with the City upon selection of the preferred location (alternate locations are currently shown at both 100 Sohier and 502 Cabot).
- **Height relief** is sought for each of the Canopy Systems. Kearsarge requests approval for canopy height above grade up to 30 feet. This will allow Kearsarge to maintain sufficient clearance for City owned vehicles, while accounting for array slope and ground topography. Height of the ground mount system and all other appurtenant structures will be below the 20ft height limit.
- **Lot coverage** are not triggered by ground mounted impermeable surfaces associated with the solar arrays.

*Section F – Landscape plan and buffering*

- **Unlike typical ground mounted solar facilities, canopies do not lend themselves to effective screening by vegetation, planted berms or fences.** For this reason no planted or built screening is planned for the canopy arrays. At the ground mount site the replacement facility is not expected to create an increased visual impact when compared with the existing facility. For this reason, an additional planted vegetative buffer is not proposed for the ground mount array. Kearsarge will work with the City to determine if any screening or fencing is required for accessory equipment, upon finalizing these locations during detailed design. Kearsarge, for all sites, is requesting relief from the landscape and buffering requirements (Section F (3)) of the solar bylaw 300-135.
- **The plan sets indicate the limited tree removal required for installation of both the Ground Mount and Canopy projects.** At the ground mount, while tree removal will be required to the west of the existing array, this will not incrementally impact site lines of abutting landowners. The canopy projects will require limited tree removal where canopies span existing trees on median strips. The City will work to identify offsetting planting opportunities to the extent trees not already identified for removal are impacted by the ground mount and canopy arrays per the intent of section F(3)(a)5.

*Section H – Design and performance standards*

- **No additional permanent ambient lighting is proposed.** Installation of the canopies may require relocation / repositioning of existing carpark lighting and cameras and Kearsarge will work with the City to facilitate that.
- **Except for code required emergency contact and safety warnings there will be no signage.**
- **Kearsarge controlled utility connections will be underground where possible, depending on soil conditions, shape and topography of the site.**
- **Kearsarge proposes utilizing existing site access for all sites and within Greenergy park a short extension of the current access road is planned.**
- **There will be no hazardous materials related to the canopy or ground mount solar equipment – cadmium telluride solar panels are not being used. The Lithium Ion batteries will be fully**

contained, and their design complies with National Grid utility standards, state regulations and applicable codes.

- Noise production on site is limited to cooling fans on inverters and transformers and the battery storage systems and shall comply with all state and local regulations including local ordinance 400-11.3.
- The parking canopy structures will be visible. Associated equipment will be placed to be in keeping with existing surroundings to the extent possible. Glare is not an issue as solar panels are designed to maximize absorption and minimize reflection of light. The ground mount system will be replacing an existing installation with similar visual impact.

*Section I – Safety and environmental standards*

- Kearsarge has and will continue to work closely with all City departmental leaders. A full drawing set, equipment binder and a draft O&M and Emergency Response plan has been provided and it is anticipated that a final draft will be agreed before issuance of the building permit. The O&M / ER plans identify shut off locations and 24hr contact details for the Kearsarge O&M team.
- Canopy systems will require have minimal land impact. Some trees on median strips under the systems will need to be removed. The Ground mount involves selective tree removal but will largely be built on the footprint of the existing system. Equipment pads represent the only impervious surfaces for these projects and will be kept to a minimum.
- No impact on critical habitats.

*Section J – Monitoring, maintenance and annual reporting*

- Issues relating to monitoring, maintenance and reporting are addressed in the SPSA and Lease with the City.

*Section K – Abandonment, decommissioning, financial surety and indemnification*

- **Abandonment:** Kearsarge acknowledges the abandonment definition within Section K of Ordinance §300-135 (Large-scale ground-mounted solar energy systems) and the ability of the City to draw on the decommissioning surety to remove the system if determined to be abandoned.
- **Decommissioning:** Under its Lease with the City, Kearsarge will submit a Decommissioning and Removal Plan for approval by the City prior to commencement of operations – the Decommissioning and Removal Plan will be consistent with the requirements of Section K-1 of Ordinance §300-135.
- **Financial Surety:** Under its Lease with the City, Kearsarge is required, at the City’s option, to post a decommissioning surety, naming the City, in the amount of 100% of the estimate proposed in the Decommissioning and Removal Plan. As required, Kearsarge Beverly LLC shall provide to the City an evergreen Letter of Credit from a qualified financial institution. Such Letter of Credit shall be in effect throughout the life of the system until the project has been removed from the premises upon the termination of the land lease with the City. In the event the system is abandoned, the City of Beverly shall have authority to draw on the Letter of Credit to decommission the system.
- **Indemnification:** The lease with the City addresses all issues of indemnification.