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Application for a Permit
Waterfront Special Development District Commission ("Waterfront Commission")
Assessor's Map 24, Block 1, Parcels 17, 17.1 and 18
0, 7 and 105 Dexter Road
East Providence, Rhode Island

PROJECT NARRATIVE:

PREPARED BY: GZA ON BEHALF OF KEARSARGE SOLAR LLC
Date: February 6, 2020

Existing Property Conditions

The subject properties are located off Dexter Road and are listed as Map 204, Block 1, Parcels 17, 17.1 and 18 in the City of East Providence Tax Assessor database. The parcels (hereinafter collectively referred to as the "Site") are situated within the East Providence Waterfront Development District, specifically the Dexter Road sub-district of the Northern Waterfront. The three parcels abut to create a continuous land area of 9.33 acres inclusive of the area under the cross-site rail easement. No wetland areas are present on the Site. Much of the Site is relatively flat. Parcel 17 slopes to the east at approximately 0.8% and Parcels 17.1 and 18 slope to the north at approximately 0.8%. An approximately 40-foot long area with steep slopes (approximately 32.5%) exists along the boundary of Parcels 17 and 17.1.

The Site on Dexter Road was formerly utilized as a petroleum product storage facility, which was ultimately taken out of service and demolished in the 1980's. Two environmental site assessment reports generated in 1989 regarding the then-proposed construction of a coal power plant verified the presence of significant quantities of free-phase petroleum contamination beneath parcel 17. Subsequent surface soils testing across the Site has identified surface soils contamination in areas of parcel 17.1 and 18. The entirety of the Site was subject to a Decision and Order issued by the RIDEM Administrative Adjudication Division on December 11, 1996. Parcel 17, while undeveloped, holds an environmental remediation system (i.e., a soil vapor extraction system – SVE system) that was installed to address subsurface petroleum contamination. The remediation system consists of a small wooden shed, underground piping, and Soil Vapor Extraction (SVE) wells. Monitoring wells extend from parcel 17 across parcels 17.1 and 18.

The ongoing remediation of the Site is being conducted by the property owner and is approved and overseen by the Rhode Island Department of Environmental Management (RIDEM), Office of Waste Management, **RIDEM Case No. 99-009.** The Site is in compliance with RIDEM, but it will still be required to operate and maintain the remediation system into the future. Surface conditions across the property primarily consist of grass in poor conditions with limited areas of brush (36,700 Square Foot (SF)). Security fencing is installed at the southern, western and eastern (adjacent to Dexter Road) property lines.

Parcels 17.1 and 18 were formerly utilized as a portable sanitation / toilet company (Sani-Kan), which operated from the existing 16,220 SF brick building and utilized the adjacent (approximate 50,000 SF) asphalt pavement areas for container storage. The remaining property area consists of approximately 38,000 SF of brush and grass in poor condition. Security fencing is installed along the northern, western and eastern (adjacent to Dexter Road) parcel limits at the property lines.

A railroad easement and associated low speed freight track owned by Genesee & Wyoming Inc (G&W) crosses through Parcels 17.1 and 18. A 10-foot wide utility easement extends across Parcel 18, at approximately 50-feet west of the eastern property boundary. In addition, a portion of King Philip Road is included as part of Parcel 18 and extends adjacent to the parcel's northern property boundary.

Overall, the three parcels are bounded to the west by a former rail corridor, which is undeveloped property owned by the Rhode Island Department of Transportation, to the South by an fuel terminal facility owned by Sprague Operating Resources, LLC (100 Dexter Road), to the East by Dexter Road, and by an industrial facility owned by Aspen Aerogels of Rhode Island, LLC (3 Dexter Road) to the north.

Site soils have been classified as Udorthents-Urban land complex by the National Resources Conservation Service and have been classified as Hydraulic Soil Group A. Existing conditions and property boundaries are shown on the attached Existing Conditions Drawing prepared by Insite Engineering Services, LLC of Seekonk, Massachusetts, dated October 17, 2019.

Introduction to the Applicant Kearsarge Solar LLC

Kearsarge Solar LLC, a leading renewable energy project development and holding company with offices in Rhode Island and Massachusetts, was formed in 2009 by a group of energy professionals with the belief that Kearsarge could create long-term economic and environmental value by partnering with local communities while leveraging its experience and access to project finance. By focusing on meeting the growing demand for reliable and cost-effective commercial- and utility-scale renewable energy projects, Kearsarge permits, finances, develops, owns and operates the solar array systems for the life of the project.

Kearsarge has successfully developed and financed over 100 MWs (40+ projects) of which 81 MWs were Public/ Private Partnerships with Municipalities, establishing itself as one of the leading Solar Energy Development firms in the Northeast. Regarding landfills/brownfields, Kearsarge has 47 MWs of solar projects, 27 MWs operating and 20 MWs in the development or construction phase, on Landfills and Brownfields which encompass over 200 acres including two Superfund Sites in South Kingstown in partnership with University of Rhode Island, Narragansett and South Kingstown.

Proposed Use of a Solar Array Development

The proposed Site development entails the construction of an approximately 2,807 kilowatt [DC (direct current)] solar array system, which will be installed across Parcels 17, 17.1 and 18. Power will be generated by the system and conveyed to National Grid's electrical distribution system located on Dexter Road. Kearsarge Energy, working with the site owner, has obtained a Brownfield Solar Project Grant from the Rhode Island Commerce Corporation to assist in offsetting the higher costs of development associated with a brownfield site – a description of this grant is included under separate cover.

Based on the site's current and future attributes, the deployment of solar is seen as one of the highest and best uses for the Site. Solar is the only current opportunity for the site. The deployment of the solar, fencing and security measures is the basis of a current submission to RIDEM seeking approval for an ELUR across the three parcels. Furthermore, it will ensure that the owner has adequate funding to continue to pay for the short-term and long-term remediation and monitoring of the contamination of soil and groundwater and for the protection of the Seekonk River.

The proposed project and zoning information are shown on the attached Drawings (C-1 through C-7), prepared by GZA on behalf of Kearsarge Solar LLC.

The following sections briefly summarize the proposed project and associated steps required to construct the array system.

Site Preparation

Prior to the start of construction activities trees and shrubs present on the Site will be cut down and chipped in place and/or removed from the Site as necessary for the installation of the solar array system. However, trees currently present along the northern property line of Parcel 18 will be left in place but trimmed as necessary to prevent the shading of the solar array. The existing 16,218 square foot brick building located on Parcel 17.1 will be demolished with the foundation left in place (See Figure C-3). The interior of the foundation will be filled to grade with common fill as needed. Filled areas of the building foundation will be seeded at the completion of construction. In addition, the approximately 200-foot long concrete wall located on the western side of Parcel 17.1 will also be demolished. The proposed area of solar panel installation will then be cleared and grubbed of all vegetation, existing asphalt surfaces will remain. The limits of work and clearing are shown on Drawing C-3.

Landscaping

The front (30-foot) and side (20-foot) setbacks will be loamed and seeded at the completion of construction. Existing Site topsoil will be utilized in these areas if feasible. The existing chain link fence along the property lines will remain in place as part of this project. A new, 7-foot tall chain-link fence will be installed along the perimeter of the G&W rail corridor to prevent access to the Site from the railroad. Additionally, a new section of fencing will be installed to close the gap that is created in the fence line along Dexter Road by the demolition of the existing brick building. Existing fence sections along Dexter Road that are deemed to be in poor condition will be replaced or repaired as needed. Native, drought tolerant shrubs (Inkberry, Winterberry, Bayberry, Black chokeberry and Common buttonbush) will be planted in approximately 20-foot-long planting beds along the inside of the existing fence along Dexter Road. The spacing between the planting beds will be approximately 40 feet. Care will be taken to not to interfere with the existing overhead powerlines. Shrubs were selected instead of trees to prevent shading of the solar panels and to prevent future tree encroachment with existing overhead utility services in Dexter Road.

Erosion Controls

Straw Wattles or an approved equivalent erosion and sediment control device will be installed along the downgradient perimeter of the limits of disturbance to prevent work outside of the limits, and to both control and filter stormwater runoff generated during construction. The erosion control system will retain large debris in runoff and a portion of the smaller suspended solids will be filtered out and retained in the wattles. Straw Wattles will be placed in a single row, lengthwise on the contour, with ends of adjacent wattles joined tightly with no gaps. Straw Wattles will be installed in accordance with manufacturer's specifications and will be securely anchored by at least two stakes driven through the middle of the sediment control device at a maximum of 4 feet on center. If staking is not desirable or possible (e.g., when the sediment controls are installed on pavement), heavy concrete blocks or sandbags will be used (at the same frequency) to secure the sediment control device to the ground surface and stabilize them during rainfall/runoff events.

As indicated on the Drawings, equipment tracking pads will be installed at access/egress points to the Sites to mitigate the transmission of on-Site soils beyond the limits of work. The tracking pads will consist of crushed stone. If sediment is tracked offsite the sediment will be removed by sweeping, shoveling, or vacuuming by the end of the workday. At the conclusion of the construction activities or whenever heavy equipment or tools leave the Site, they will be cleaned of visible soil residuals. At a minimum, soil will be brushed from the equipment and re-used as backfill or placed in stockpiles to be managed as described herein. Vehicles are not to leave the property with visible soil residues on the

exterior. The proposed soil erosion control plan will be implemented and monitored as part of a project specific RIDEM Construction RIPDES Permit. Erosion and sediments control locations and details are shown on Drawings C-3 and C-4.

Earthwork and Grading

Minimal earthwork and Site grading are expected to occur. Site grades will generally remain unaltered. Minor excavation may be required for: 1) the construction of equipment pads; 2) any underground electrical conduit installation; and 3) underground conduit crossings associated with the railroad. Final Site layout and landscaping is shown on Drawing C-5. Disturbed areas of the Site will be loamed and seeded following the completion of construction. It is estimated that approximately 1.7 acres of the Site will be disturbed during construction via clearing and grubbing activities (See Figure C-3).

Environmental Remediation

The parcels are currently undergoing environmental remediation, which is approved and overseen by the Rhode Island Department of Environmental Management's Office of Waste Management (**RIDEM Case No. 99-009).** Thus, the following environmental remedial controls will be included in the Site development, in coordination with the Rhode Island Department of Environmental Management (RIDEM).

Testing of the surface soil on Parcel 17 has shown it meets RIDEM's Method 1 Residential Direct Exposure Criteria (RDEC). Therefore, a remedial cap is not warranted. Similar testing of surface soil on Parcels 17.1 and 18 identified some constituents in some surface soil samples at concentrations above RIDEM RDEC. Therefore, public access and direct contact with the surface soils on Parcels 17.1 and 18 will need to be restricted.

The proposed solar array will utilize the existing 6 to 8-foot-high fencing around the entire perimeter of all three parcels to restrict public access to the solar panels and equipment. On Parcels 17.1 and 18 this fencing will serve a dual purpose to prevent public contact with both the solar array and the on-site soils. An Environmental Land Use Restriction (ELUR) and a Soils Management Plan (SMP) will be filed with RIDEM and recorded with the City of East Providence for parcels 17, 17.1 and 18 to provide procedures to be followed in the future if the fencing or on-site soils are disturbed, and insure that the engineered controls are inspected and maintained on a routine basis. The ongoing environmental controls are detailed in a draft letter from GZA / Merva to RIDEM, which will request the approval of the solar array system from RIDEM. The proposed remedial solution for the site includes installation of the solar panels and the use of perimeter fencing to prevent public contact with contaminated soils.

Solar Array and Equipment

The proposed solar array system layout has been developed by Kearsarge Solar LLC. The solar array system will be installed across most of the Site. The solar panels array will not encroach upon the City's zoning and building setback buffers. The solar arrays will be rated to produce approximately 2,807kilowatts (kW) of DC power. Approximately 6,684 photovoltaic modules will be used to construct the array. Direct current will be converted to alternating current by multiple string inverters and a pad mounted transformer. Solar array layout and equipment locations are shown on Drawing C-5.

Solar Panels will cover approximately 37% of the Site area. The system layout has been aligned to a Class 1 property boundary survey, Topographic Class 2 (T-2) topographic survey, Site features, and associated drawings prepared by Insite Engineering Services, LLC of Seekonk, Massachusetts, dated January 27, 2020.

The solar panels and associated racking system will be supported using either ground screw piles, or light weight driven steel pile sections as needed based on subsurface conditions. Concrete ballast blocks will be used as footings for the solar panel racking system in areas within 10-feet of the SVE system piping to prevent the SVE system from being damaged during construction. Ground screws are small diameter hollow shank spiral thread piles with one end tapered to a point. Ground screws are driven into a competent soil layer; typical depths range from 7 to 15 feet. Driven Pile selections that could be considered for this project include wide flange, H-pile or pipe pile sections. Like ground screws, pile sections are driven from the ground surface and imbedded into a competent soil layer.

The transformer will require approximately four grounding plates and the racking system will also require grounding plates to comply with State and Federal Electrical codes. The grounding plates will be installed at a depth of 4-6 inches below ground surface (bgs). The concrete equipment pad will be 8 to 12 inches thick and will be constructed with reinforced cast in place concrete. The concrete foundation (equipment pad) for the transformer will be placed over the existing grade without excavation.

The tilt of the solar panel arrays will be approximately 20-25° inclination from level. The wiring from the back of the panels will connect and run along the racking structure above ground to the string inverters. The wiring from the inverters will then run to panelboards through an above ground conduit or cable tray system, or via direct burial, and extend to a transformer constructed on a concrete equipment pad.

The solar array is compromised mostly steel and glass that are readily recyclable without any hazardous substances.

Signage and Lighting

Signage will be attached to the perimeter chain link fencing in accordance with National Fire Protection Association and Occupational Safety and Health Administration standards. Signs will include emergency contact information and site shut down instructions, as well as discourage trespassing. No signposts will be erected as part of this project.

In addition, no lighting will be installed on the site. Lighting is not required as the solar panels cannot operate without sunlight and thus all site activities will occur during daylight hours.

Construction Period

Construction activities are expected to be completed within a three to five-month time frame. There will be no phasing of construction activities. If approval is granted by the East Providence Waterfront Commission, the initial system construction activities are anticipated to occur from April 2020 through August 2020.

Impact Assessments

Following the completion of construction, the project will not increase traffic in the surrounding area, as maintenance activities at the Site are expected to be infrequent and an operator will visit the Site monthly to inspect the system. The solar array will not produce any nuisance noise or odors during operation. The noise from the system is limited to a low-level hum from inverters and the transformer during daylight hours only (equitable to a residential refrigerator @ 5ft). The Site will not utilize city water or sewer. No lighting will be installed as part of this project. Existing curb cuts and driveways will be utilized to access the facility. The driveway located on Parcel 17 will be improved with a stone surface. The driveways will provide access to the remedial / SVE shed and the transformer pad.

The impacts of the solar facilities development on the environment and abutting properties will be minimal. Existing and new fencing will provide security for the systems, and all work will occur within the limits of the fenced areas. Overhead and underground utilities exist within Dexter Street, which will conflict with certain street plantings. Our proposed landscaping plan has accounted for overhead utilities, existing curb cuts and rail crossing and has been specified on the drawings to prevent shading of the proposed solar array. As such, the solar project will minimally impact the visual quality of the surrounding area.

The solar array panels will discharge stormwater directly to the existing surface underlying the solar panel structures. Thus, the effective impervious area created by the project is minimal. Because the solar panels will be designed and installed in this manner, stormwater runoff from the solar panels will infiltrate into the underlying ground surface. The vegetated buffers within setback areas will maintain stormwater flow patterns across the property and control stormwater runoff rates in a similar manner as the current property condition. The RIDEM, Office of Water Resources (OWR), will review the project for compliance with the RIDEM Stormwater Manual and coverage under the State's General Permit for Stormwater Discharge Associated with Construction Activity.

Interconnection to National Grid

Kearsarge has applied for an Interconnection agreement with National Grid and is at the final review step. The point of electrical interconnection between the solar array system and public utility grid will be the utility pole located near the existing Site entrance on Parcel 18 off Dexter Road. The point of interconnection is shown on Drawing C-5.

Operation and Maintenance

Following completion of construction, activities related to the solar power system will generally be limited to operation and maintenance. This includes vegetative mowing (typically 2 to 3 times per year) and routine system inspections (normally monthly) and adjustments.

Each site has a detailed Operations, Maintenance and Emergency Response manual which is customized to the facility. Site access will be limited to authorized personnel through use of the fencing and locked gating. Kearsarge will, through use of an onsite camera and data acquisition system, continuously monitor the system and the site.

Decommissioning

As is typical with Kearsarge projects, an independent engineer will provide an estimate of decommissioning and a plan and Kearsarge will establish a surety approved by the Waterfront District Commission.

PLANNING AND ZONING COMPLIANCE SUMMARY

Compliance with the 2003 East Providence Waterfront Special Development District Plan

The "vision principals" of the 2003 East Providence Waterfront Special Development District Plan ("Waterfront Plan") include "positive fiscal impacts to the City while expanding the tax base" and the generation of new jobs and employment opportunities. Over 25 years, the solar array is anticipated to produce an estimated 85,400,000-kilowatt-hours (kWhs) of energy (3.5 million kWhs annually). The energy credits have been offered to Rhode Island public entities, including a school district and a state organization, which will result in a savings of approximately $250,000 annually or $6.2 million dollars over twenty-five years. With the addition of taxes, local grid infrastructure

improvements and wages generated from the project, the total economic impact, over twenty-five years will approach eight million dollars including:

- $1,299,000 in Rhode Island wages during construction;
- $196,000 in local grid infrastructure improvements;
- $280,000 in new property taxes to the City of East Providence over 25 years; and
- $1,187,500 in operations and maintenance wages over 25 years.

The development of the solar array and associated environmental assessment and engineering work will result in the temporary creation of approximately three jobs. Construction of the solar array would result in the temporary creation of 40 skilled jobs.

In addition, the Waterfront Plan sets forth specific goals and objectives, several of which the proposed solar array facility would support and meet. They are, *inter alia*, as follows: (1) reclaim brownfields and encourage redevelopment and reuse (Goal 1, subsection 1.); (2) mitigate conditions that contribute to soil and groundwater contamination (Goal 1, subsection 5. and Goal 5, subsection 2.); encourage new businesses and activities to locate on the East Providence waterfront to form a stimulating and inviting mix of waterfront uses (Goal 3, subsection 1.); encourage opportunities in and around the waterfront for both large and small-scale development efforts (Goal 3, subsection 3.); and encourage uses for which there is an immediate and long-term development interest (Goal 3, subsection 5.)

Annually, the array would produce energy for 350 homes and, over 25 years, would remove over 137.5 Million pounds of CO2 from the local environment. Carbon sequestering would be equivalent to 3,232 acres of forest per year. (Based on the EPA's Greenhouse Gas Equivalencies Calculator).

Compliance with the City Comprehensive Plan

The proposed solar facility is aligned with the *City of East Providence 2010-2015 Comprehensive Plan Update (Comprehensive Plan)* Goal 2 to promote the conservation and efficient use of energy and renewable forms of energy. Specifically, this project meets Objective 2.1 to pursue options for the siting of alternative energy systems within the City, and Objective 2.4 to investigate the use of both micro and larger solar technology for residential, commercial and municipal use.

The Comprehensive Plan also discusses the viability of placing solar arrays on contaminated sites:

> *"The U.S. Department of Energy has developed a "Brightfields Initiative" to encourage the productive use of brownfield sites and advance the use of solar energy technologies. The term "brightfields" refers to the conversion of contaminated sites into usable land by bringing pollution-free solar energy and high-tech solar manufacturing jobs to these sites, Brightfield options include the installation of photovoltaic arrays that can result in a reduction in cleanup costs, building integrated solar energy systems as part of an area redevelopment, and solar manufacturing plants on brownfields."*[1]

[1] The *City of East Providence 2010-2015 Comprehensive Plan Update, Adopted by East Providence City Council on January 5, 2010.*

As the Site is currently included on the United States Environmental Protection Agency's (EPS) Superfund CERCLA List (**RIDEM Case No. 99-009)** this project would fulfill the "brightfields" objectives.

The East Providence Land Use Plan Element Vision Statement (Comprehensive Plan, page 15) also includes a goal to increase the City's use of renewable energy. This project will further the advancement of clean energy technologies for the greater public good. Annually, the array would produce energy for 350 homes and, over 25 years, would remove over 137.5 Million pounds of CO2 from the local environment over 25 years. Carbon sequestering would be equivalent to 3,232 acres of forest per year. (Based on the EPA's Greenhouse Gas Equivalencies Calculator).

Zoning & Conditional Use

The proposed use of a solar facility falls within the category of "Public utilities not otherwise mentioned" in Section 19-481, Schedule of use regulations, of the City of East Providence Zoning Ordinance ("Zoning Ordinance"). As such, the proposed use is a Conditional Use in the Dexter Road sub-district. Consequently, Applicant Kearsarge Solar LLC must seek "conditional use provisions" from the East Providence Waterfront Commission in accordance with the criteria set forth in the Zoning Ordinance, Section 19-479, in order to obtain the approval to install the solar array system.

The proposed site use as a solar array system complies with the criteria for the granting of conditional use provisions listed in Article IX, Section 19-479(g) of the Ordinance as follows:

a) *Protection of adjoining properties and other parcels in the waterfront district from any detrimental use on site.*

   The proposed solar array will have minimal impact to the neighboring properties. The proposed solar array creates minimal noise, no long-term increase in traffic, no water or sewer use and no vibration, smoke or odor. This use is significantly less disruptive to the neighboring properties than many other potential Light Industrial Uses which would be permitted under the Zoning Ordinance in the Dexter Road sub-district. This project will further the advancement of clean energy technologies for the greater public good.

b) *Convenience and safety of vehicular and pedestrian movement within the site in relation to adjacent streets, properties, improvements and in conformance with the express design intent.*

   As stated above, the solar array will have minimal impact on the traffic of the surrounding neighborhoods. Both pedestrian and vehicle access to the Site by Kearsarge employees will only occur on an infrequent basis (one per month on average) for maintenance. The entire system, including all active electrical components (e.g., transformers, switch gear, etc.), will be enclosed by the existing chain-link fence and will pose no hazards to the surrounding community.

c) *Adequacy of the methods of disposal for sewage, refuse and other wastes, and methods of drainage of surface water.*

   The Site will not produce sewage or waste, as the Site will remain unoccupied during operation. The solar array panels will discharge stormwater directly to the existing parcel surface underlying the solar panel structures. Thus, the effective impervious area created by the project is minimal. Because the solar panels will be designed and installed in this manner, stormwater runoff from the solar panels will infiltrate into the underlying ground surface. The vegetated buffers within setback areas will maintain stormwater flow patterns across the property and control stormwater runoff rates in a similar manner as the current property condition. The RIDEM, Office

of Water Resources (OWR), will review the project for compliance with the RIDEM Stormwater Manual and coverage under the State's General Permit for Stormwater Discharge Associated with Construction Activity.

d) *Provisions of off-street loading and unloading of vehicles incidental to the servicing of the buildings and related uses on the site.*

As stated above, following the completion of construction, monthly maintenance inspections will be the only planned visits. The existing Site access driveways and associated curb cuts are large enough to accommodate the vehicles required to service the Site (work truck or van). No additional parking areas are needed.

e) *Adequacy of all other municipal facilities and services to meet the needs of the site.*

As the Site will not produce sewage, use water, generate solid waste or be occupied, no municipal services will be required to service the needs of the proposed solar array facility.

f) *Achievement of overall design objectives of the development plan.*

The design of this solar array was developed to conform with the standards listed in Article VIII, Section 19-454 of the City Ordinance and is consistent with the light industrial uses planned for the Dexter Road Special Development District listed in the "2003 East Providence Waterfront Special Development District Plan". In addition, solar power facility can be implemented without disrupting the ongoing environmental remediation of the parcels, prevents access to the properties and meets the long-term environmental objectives associated with remediating the parcels and associated RIDEM ELUR and SMP.

For the reasons stated within this Narrative, the Applicant Kearsarge Solar LLC has also met its burden of demonstrating that "neither the proposed use nor its location on the site would have a detrimental effect on the public health, safety, welfare or morals." Zoning Ordinance, Section 19-479 (e).

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