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December 30, 2024

Melanie A. Bachman, Esq.
Executive Director
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10 Franklin Square
New Britain, CT 06051

Re: Petition of Tunnel BESS LLC for a Declaratory Ruling Pursuant to Connecticut General Statutes §§ 4-176 and 16-50k for the Proposed Construction, Maintenance and Operation of a 16.02-megawatt Battery Energy Storage System to be Located at FirstLight Tunnel Generating Station, 72 Roosevelt Avenue Extension, Preston, Connecticut

Dear Attorney Bachman:

On behalf of Tunnel BESS LLC and pursuant to Conn. Gen. Stat. §§ 4-176 and 16-50k(a), we hereby submit to the Connecticut Siting Council a Petition for Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need is necessary for the construction, maintenance and operation of a 16.02-megawatt Battery Energy Storage System to be located at FirstLight's existing Tunnel Generating Station at 72 Roosevelt Avenue Extension, Preston, Connecticut. Enclosed is the original and fifteen copies of the Petition and the Exhibits, along with a check for $625.00 payable to the Connecticut Siting Council for the required filing fee.

Please contact me if you have any questions regarding this filing.

Very truly yours,

Janie L. McDermott

JLMC/vab
Enclosures

{W3595650}

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

	)	PETITION NO. ____
Petition of Tunnel BESS LLC for a Declaratory	)	
Ruling Pursuant to Connecticut General Statutes	)	
§4-176 and §16-50k, for the Proposed Construction,	)	
Maintenance and Operation of a 16.02-megawatt	)	
(MW) Battery Energy Storage System to be Located	)	
At FirstLight Tunnel Generating Station, 72 Roosevelt	)	
Avenue Extension, Preston, Connecticut	)	
	)	December 30, 2024

PETITION OF TUNNEL BESS, LLC FOR A DECLARATORY RULING

Petition Outline

Exhibits

Exhibit 1 - Locus and Aerial Maps

Exhibit 2 - Site Plans

Exhibit 3 - Equipment Information

Exhibit 4 - Fire Safety Information

Exhibit 5 - Forestry Inventory and Soils Mapping

Exhibit 6 - Connecticut DEEP Natural Diversity Data Base Review

Exhibit 7 - USFWS Species List

Exhibit 8 - Wetland and Watercourses Report

Exhibit 9 - Stormwater Watershed Plans

Exhibit 10 - FEMA Mapping

Exhibit 11 - Aquifer Protection and Water Quality Maps

Exhibit 12 - SHPO Project Review and Findings

Exhibit 13 – Adjacent Land Owners and Use Plan

Exhibit 14 – Sound Level Modeling Report

Exhibit 15 - FAA Notice Criteria Tool

Exhibit 16 - Site Operations and Maintenance Plan

Exhibit 17 - Notice of Intent, Certificate of Service, and Certificates of Mailing

Exhibit 18 – Municipal Outreach Log

I. INTRODUCTION

Pursuant to Connecticut General Statutes ("CGS") §§ 4-176 and 16-50k(a) and Regulations of Connecticut State Agencies ("RCSA") §16-50j-38 et seq., Tunnel BESS LLC (the "Petitioner), a wholly-owned subsidiary of FirstLight Power Inc. ("FirstLight"), a Delaware corporation, hereby petitions the Connecticut Siting Council ("Council") for a Declaratory Ruling that no Certificate of Environmental Compatibility and Public Need ("Certificate") is required for the construction, maintenance, and operation of a 16.02-megawatt ("MW") battery energy storage system ("BESS") comprised of battery units, inverters, transformers and interconnection equipment (collectively, the "Facility" or "Project"). The Project will be co-located adjacent to FirstLight's existing Tunnel Generating Station, a hydroelectric facility located at 72 Roosevelt Avenue Extension in Preston, Connecticut ("Site"). (See Exhibit 1, Project Location Map.) The Project will be a customer-side distributed resource facility under 65 MW that complies with the air and water quality standards of the State of Connecticut Department of Energy and Environmental Protection ("DEEP"). As discussed more fully in this Petition, the Petitioner submits that a Certificate is not required because the construction, maintenance and operation of the Project would not have a substantial adverse environmental effect in the immediate vicinity of the Site or in the State of Connecticut.

II. PETITIONER INFORMATION

The Petitioner is a Delaware limited liability company with an office address of 100 District Avenue, Suite 102, in Burlington, Massachusetts. The Tunnel BESS LLC project company was organized in 2022 as a wholly-owned subsidiary of FirstLight for the purposes of developing, constructing, and operating the 16.02-MW BESS described herein. FirstLight has partnered with New Leaf Energy to develop the Project, which would serve as the replacement for the aging kerosene-fueled "Tunnel Jet" system currently existing at the Site. New Leaf Energy was formed in July 2022 from the development business of Borrego Solar Systems, Inc., a leading national developer of solar and energy storage facilities. Borrego Solar Systems, Inc. has been a leader in the New England solar and energy storage programs,

having developed and built over 150 MW of community solar projects under the Massachusetts SREC and SMART programs. New Leaf Energy (operating as Borrego Solar Systems, Inc.) has developed 1.1 gigawatts ("GW") of solar projects nationwide and currently has a nationwide development pipeline of approximately 6 GW of solar, as well as 25 GWh of energy storage. New Leaf Energy typically provides comprehensive development, procurement and financial services in support of projects such as this Project. All correspondence and/or communications regarding this Petition should be addressed to:

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III. PROJECT BENEFITS & PURPOSE

Connecticut has among the nation's most ambitious climate change mitigation goals, evidenced by the passage of Public Act No. 22-5 ("PA 22-5"), mandating zero emissions from electricity supply by 2040. This Act is supported by the Integrated Resources Plan released in 2021, which analyzed pathways to reach zero carbon electric supply by 2040. In addition, in 2021, the Connecticut General Assembly enacted Public Act No. 21-53, which calls for 1000 MW of energy storage to be deployed in Connecticut by 2030.

Connecticut's energy policy and planning are focused on (1) decarbonizing the electric sector while (2) maintaining reliability and (3) protecting affordability for ratepayers. This Project provides benefits for all three of these pillars:

- **Decarbonization**:
    - The Project proposes to repower an existing kerosene generator system with battery storage, which would fully eliminate the carbon emissions previously generated onsite. The operation of the Project would entail charging during hours when prices and emissions are low, and discharging when prices and emissions are high, leading to emissions specifically attributable to the Project that are lower than the purely peaking fossil fuel resource it is replacing. This differential would increase as more renewable resources are brought online over time.
    - More broadly, as Connecticut progresses toward its goal of zero carbon electric supply by 2040, on-demand fossil fuel generators are increasingly being replaced by intermittent renewable generation. Energy storage is a crucial component of the energy system as the proportion of supply provided by intermittent renewables increases; it ensures that power is available when the sun is not shining and the wind is not blowing. A battery energy storage system like this Project will help to accelerate the decarbonization goals of the State of Connecticut.
- **Reliability**:
    - Energy storage combined with renewable generation can provide zero carbon firm capacity, even when the renewable resources are weather-dependent. Battery energy storage will become more important as the proportion of intermittent resources on the grid increases. However, this technology is already important today as the New England power grid, which has a heavy reliance on fossil fuel and natural gas generators, faces supply constraints in times of high demand for residential and industrial uses. Gas pipeline

capacity supplying New England is constrained; on cold winter days, gas-powered electric generation is in competition with heating uses for that limited import capacity. Imports of additional liquefied natural gas are required, at higher cost to ratepayers. During these high-demand winter events, smoothing the peaks of electricity demand by dispatching energy storage reduces competition for limited natural gas resources because it reduces the runtime of gas-powered peaker plants. Every incremental energy storage resource added to the grid reduces competition between the electric and heating sectors, contributing to greater reliability and lower ratepayer cost.

- Lithium-ion battery storage facilities such as this Project can provide various other services to the grid that support overall reliability, such as disaster recovery, voltage regulation, and quick response to generation demand, all of which result in decreases in volatility and increases in the reliability of the electric grid.

- **Affordability**:
  - Without this Project and other energy storage mechanisms, a decarbonized grid would require an overbuild of intermittent renewable resources so that sufficient power is available during times when those resources are not generating at peak capacity. Energy storage is a cost-effective strategy for avoiding overbuild and subsequent curtailment of renewable resources, while ensuring that electricity demand can be met at all times. The storage of electricity for periods of high demand is cheaper than the construction of generation that is not needed.
  - This Project is designed to charge while energy prices are very low, based on excess generation from renewable resources with zero marginal fuel cost. This allows energy storage systems like this Project to resell that power when demand increases, but at prices lower than fossil generators. Unlike this Project, fossil fuel generators have a marginal fuel cost which is not only higher than the charging cost for battery storage, but also subject to

global sources of price volatility such as those seen today as a result of the war in Ukraine.

- In addition to the buildout of new zero-carbon generators, decarbonization of Connecticut's electric supply will also require major investments in transmission and distribution infrastructure, given that renewable generators are typically not located in the same places as their fossil fuel predecessors. The Project is unique in that it would take advantage of existing transmission and distribution infrastructure, thereby avoiding any cost that might otherwise be absorbed by ratepayers in order to enable this resource to provide services to the grid.

IV. SITE AND PROJECT DESCRIPTION

A. PROJECT HISTORY

FirstLight and its predecessor companies have operated hydroelectric generating facilities at the Site since 1919. The Site was originally built as a conventional pond and release system and was modified in 2000 to provide run of river generation, qualifying the asset as a Class 1 Renewable Generator. For more than 20 years, the Tunnel Hydro facility has also provided upstream and downstream catadromous and anadromous fish passage via a fish lift.

In the late 1960s, a kerosene jet turbine, "Tunnel Jet", was installed at the Tunnel Generating Station along with a fuel storage tank. The Tunnel Jet facility was commissioned in 1969 and provided peak demand power when called upon by ISO-New England for over 50 years.

In 2022, FirstLight announced its intent to retire the Tunnel Jet facility. Tunnel Jet was FirstLight's last carbon-based generator; its retirement demonstrated FirstLight's commitment to accelerate the decarbonization of the New England electrical grid. For decades, FirstLight's renewable assets have delivered clean, safe, reliable electricity to local communities throughout New England. To meet the demand for clean energy as states transition away from fossil fuels, FirstLight has advanced its mission and swiftly expanded its portfolio to include solar, battery storage and investments in offshore wind, in addition

to its legacy pumped-hydro and hydroelectric assets.

FirstLight's goal, similar to that of the State of Connecticut, is to drive decarbonization of the electric system. Therefore, FirstLight has determined the best path forward is to decommission Tunnel Jet and replace it with the "Tunnel BESS" Project described in this Petition. This would continue to provide equivalent services to the local grid, but with a reduced impact on the local and regional environment. This Project and its Site were selected by FirstLight after careful consideration of a range of potential locations throughout Connecticut because of its technical benefits and limited environmental, visual, and community impacts.

The current Connecticut energy market has no energy storage systems co-located with Class 1 hydro renewable assets. The proposed "repowering" of the Tunnel Jet facility as a BESS provides the unique opportunity to co-locate BESS with a Class 1 hydro asset while simultaneously helping to meet the statutory mandate of net zero electric sector emissions in Connecticut by 2040 (PA 22-5).

B. SITE SELECTION

The site selection for the Project was based on a detailed evaluation of the following key criteria:

- Site suitability (physical footprint capacity and surrounding topography);
- Site availability (current ownership or ability to lease or purchase land);
- Proximity to critical infrastructure (suitable electrical grid access); and
- Limitation of adverse environmental effects (ability to replace existing carbon emitting infrastructure with a BESS).

Once the initial evaluation was completed, a preferred site was selected by FirstLight and the Petitioner for development and preliminary due diligence work.

The Site is an approximately 5.7-acre parcel located at 72 Roosevelt Avenue Extension in the Town of Preston (Tax Parcel: 5-0/ROO1/72). (See Exhibit 1, Aerial Map.)

This parcel and the existing Tunnel Generating Station (which includes the hydro and jet generator facilities) are owned by FirstLight CT Hydro, LLC, a subsidiary of FirstLight. FirstLight reviewed the

options of re-powering or reducing the emissions of the existing Tunnel Jet kerosene generator system. The use of this Site for a battery energy storage system would represent a significant benefit to the Town of Preston and the State by initiating the removal of thermal, sound, and gas emissions and replacing a portion of the electrical capacity with a quiet, non-carbon-emitting BESS. This Project represents a low impact industrial re-development of the land that would have far fewer potential environmental impacts in comparison to its current use.

The Project team retained the following Connecticut-based consultants to assist in the evaluation and design of the Project: (1) North by Northeast Survey and Mapping Consultants (Surveying); (2) SLR Consulting (Wetland Delineation); (3) Epsilon Associates (Sound Level Modeling); (4) Heritage Consultants (Historical and Cultural Resources); and (5) Ferrucci & Walicki, LLC (Forestry).

These Project consultants conducted preliminary due diligence investigations, which included surveying, wetland and natural habitat assessments, cultural and archaeological studies, and noise impact assessment. Project representatives have been in contact with municipal officials in the Town of Preston, as well as staff at the DEEP and the State Historic Preservation Office ("SHPO") regarding the Site and the Project.

C. SITE DESCRIPTION

The Site is zoned I (Planned Industrial). A majority of the Site is currently utilized as a kerosene-fueled electric generating station ("Tunnel Jet"). The Tunnel hydroelectric generating station ("Tunnel Hydro") is also located on the Site and will not be impacted by the Project. The Site hosts an access road to the aforementioned electric generating facilities. (See Exhibits 1 and 2.)

The Site is located between the Quinebaug River bank and the adjacent substation and transmission corridor owned and occupied by The Connecticut Light and Power Company dba Eversource Energy ("Eversource"). The Site itself and access to the Site are surrounded by Planned Industrial zoned land, low-density residential use, and adjacent farm lands. In totality, the "Project Area", representing the limits of disturbance, would encompass approximately a 1.9-acre footprint of the total 5.7-acre Site. The Project

would require the re-development of 0.61 acre of the current Tunnel Jet and the removal of approximately 1.29 acres of existing forest. The Site is located on a floodplain ridge crest adjacent to the Tunnel Hydro. (See the Site aerial imagery in Exhibit 1.)

D. PROJECT DESCRIPTION

The Project would consist of the "repowering" of the existing Tunnel Jet kerosene-fueled electric generating facility to a BESS. Upon the decommissioning of the existing Tunnel Jet facility (planned to begin in early 2025), the redevelopment of the existing Tunnel Jet's footprint would allow for the new BESS Project to interconnect at the Tunnel Jet's existing Point of Interconnection ("POI").

The BESS would be comprised of the following major components: a battery storage system; a power conversion system ("PCS"); a control and protection system; step-up transformers; switchgears; a disconnect switch; heating, ventilation and air conditioning ("HVAC") chillers; and other standard system components.

The basic configuration and dimensions of the BESS, with the major components identified, is provided in the "Layout and Materials Plan" in Exhibit 2, and location and aerial maps of the area of the BESS Site are provided as Exhibit 1.

The Project would be located at 72 Roosevelt Avenue Extension in the Town of Preston (Tax Parcel: 5-0/ROO1/72). The Site is an approximately 5.7-acre parcel of land that is located directly adjacent to Eversource's Tunnel Substation.

The Project would be situated behind the existing shoreline vegetated buffer along the Quinebaug River's edge so as not to be visible from the road or area residences. The nearest residential home would be over 875 feet away, north of the Project. (See Exhibit 1, Aerial Map.) The Project would interconnect to an existing 23-kV transmission line that has been carefully evaluated for its ability to successfully accommodate a 16.02-MW BESS without significant network electrical infrastructure upgrades. The redevelopment of the existing Tunnel Jet facility site would limit the need for clearing vegetation, cutting, filling, and excavation, while simultaneously eliminating the noise, carbon, and heat emissions associated

with the existing facility. In addition, the Project would be located a substantial distance from local residences so as to be able to accommodate a BESS while providing a sizable and beneficial buffer area. The Site is within the visual backdrop of recently upgraded transmission and substation structures at the Eversource Tunnel Substation. The Project would be situated below the peak forest canopy height on the property so as to avoid visual or aesthetic impacts. The Project additionally would benefit from existing utility access, eliminating the need for longer "gen-tie" lines and further reducing environmental impacts associated with land clearing, maintenance roads, visual impacts, and cost associated with gen-tie work.

The Project's battery storage system would have a net operating capacity at the POI of 16.02 megawatt alternating current ("MWac") with an expected discharge period of four hours, thereby providing approximately 68.4 megawatt hours ("MWh") of beneficial supply and ancillary services. The Project would utilize a state-of-the-art modular energy storage unit design consisting of lithium-ion battery technology. The modular design reduces impacts, enhances efficiency and advances Project safety. The Petitioner currently anticipates employing a Hithium energy storage system with six (6) SMA SCS 3960 UP-US inverters, six (6) 2850 KVA transformers, one (1) 650 KVA auxiliary transformer, one (1) 350 KVA auxiliary transformer and collector switchgear. To provide the target storage capacity, a total of 24 Hithium energy storage enclosures would also be installed. These enclosures have a depth of 8'0", a length of 19'10", and a height of 9'6". Due to natural degradation of battery efficiencies, additional enclosures would be installed during the course of the 20-year lifespan of the Project. The maximum number of units to be installed at any given time would be 33 enclosures. (See Exhibit 2.)

The Petitioner's current plan is to use Hithium energy storage enclosures. If equipment selection decisions are revised during final design, any new equipment choices would follow the general descriptions contained herein regarding electrical capacity and would comply with industry or UL standards. The Project would also comply with all applicable provisions of the Connecticut Comprehensive Fire Safety Code and the Connecticut Electrical Code. Additionally, any equipment considered as part of the Project would not result in any additional increase in noise levels from what is filed in this Petition.

E. BATTERY TECHNOLOGY

Lithium-ion battery technology is the most appropriate energy storage technology based on cost, availability and technological maturity to help meet both electric demand and environmental needs in Connecticut. Lithium-ion has quickly become the preferred or standard technology for MW-scale utility energy storage systems. The United States has over one GW of installed energy storage systems, most of which are lithium-ion technology. The material costs for lithium-ion technology have steadily decreased while the available manufacturing capacity has increased over the last ten years. Lithium-ion can also store more energy in a smaller amount of space than other technologies, thereby helping to reduce impacts. Lithium-ion batteries are also typically more efficient with a lower self-discharge rate. Furthermore, lithium-ion battery systems are available in modular designs, which makes it efficient to maintain the rated capacity of the storage system over its lifetime by simply adding or replacing batteries as needed. This would allow the Project to meet its planned operational period of 20 years, after which the Project would be decommissioned.

F. INTERCONNECTION

The Project would be interconnected to Eversource's distribution network via the existing Tunnel Jet's POI at Eversource's Tunnel Substation. The Tunnel Substation is located adjacent to the Project at 72 Roosevelt Avenue Extension, Preston, Connecticut.

The Project would interconnect through the same bay as the soon-to-be decommissioned Tunnel Jet gas turbine peaker plant. The protections at the substation would be reviewed and updated by Eversource. The interconnection equipment would consist of a customer-owned main site disconnect and recloser. A redundant utility-owned relay and disconnect may also be required.

The interconnection facility design and construction would be performed in accordance with Eversource and United Illuminating ("UI") Guidelines for Generator Interconnection and State of Connecticut, ISO-New England ("ISO-NE"), and Federal Energy Regulatory Commission ("FERC")

requirements as applicable. As part of the interconnection process, the Petitioner has filed an Interconnection Application and held a utility-sponsored Scoping Meeting with Eversource and Eversource has completed a Feasibility Study ("FS"). Eversource is currently conducting a System Impact Study ("SIS") with an estimated completion in December 2024.

The status of the Project's interconnection request can be found in the publicly available "CT DER Queue" through Project Number "INT-79028". A FS for the Project has been completed and a SIS was commenced in the summer of 2023. Because the Project is a "re-powering" of an existing generator, the Petitioner anticipates the results of the SIS will show no thermal, voltage, or short-circuit violations. The Petitioner therefore anticipates very minimal, if any, infrastructure upgrades will be identified by the SIS. Upon completion of the SIS, an Interconnection Services Agreement would be issued by Eversource. As noted, the Project will connect to the existing Eversource Tunnel Substation adjacent to the Project. The Petitioner would be responsible for the permitting and construction of the Project in full coordination with Eversource and in compliance with all Eversource design standards.

The Petitioner participated in the ISO-NE Forward Capacity Auction 18 ("FCA 18") and received a Capacity Supply Obligation ("CSO") of 16.02 MW for Capacity Commitment Period ("CCP") 2027-2028.

V. ENVIRONMENTAL EFFECTS AND MITIGATION

A. EXISTING LAND USE

The 1.9-acre Project Area is currently split between two uses - forested and developed. The developed area is associated with the currently located but not currently operating Tunnel Jet located on the Site. The Project would require a larger footprint than the presently developed area; therefore, a portion of the forested area would also be included in the total Project Area. Current land use adjacent to the Project is commercial/industrial land owned by Eversource. The remaining area to the north of the Project is

forested and abuts the Quinebaug River. The Project is located northwest of an electric substation owned by Eversource. The adjacent parcels south of the Project are utilized for residential and agricultural purposes. The Project, as proposed, would not directly abut, or cause any impacts to, any current agricultural or residential land uses.

B. VEGETATION REMOVAL

As described above, the Site is partially located on an existing developed location hosting an electrical generation facility. These currently developed areas would be used to the greatest extent possible so as to reduce the need for vegetation removal. The proposed BESS Project would require a larger footprint than the existing Tunnel Jet. An area of approximately 1.29 acres would require tree clearing to allow for the conversion of this Site to a BESS. To quantify the trees that would need to be cleared for this Project, a forestry inventory was performed by forestry and land management consultant Ferrucci & Walicki, LLC. Based on this field investigation, it was determined that the Project is expected to result in the harvest of approximately 128 trees of sawtimber and pole timber size (See Exhibit 5).

Additionally, as shown on page 9 of Exhibit 5, timber harvesting and clearing would not exceed 300 feet from the existing forested edge and, therefore, would not impact areas identified as Core Forest.

C. RARE, THREATENED AND ENDANGERED SPECIES AND CRITICAL HABITAT

The Petitioner filed a Request for Natural Diversity DataBase (NDDB) State Listed Species Review on July 9, 2024. The review was completed by Connecticut DEEP on July 22, 2024 and listed two species in the vicinity of the Project: The Bald eagle (*Haliaeetus leucocephalus*), which is a State Threatened species; and Blueback herring (*Alosa aestivalis*), a species of State Special Concern. (See Exhibit 6.) Proposed Project construction does not entail any in-water work and, therefore, no impact to the Blueback herring is anticipated. To determine proximity of the Site to Bald eagle nests or potential impacts to Bald eagles, a DEEP Wildlife biologist was contacted. It was confirmed that the closest Bald eagle nest is approximately 1,000 feet away from the Project Site, greater than the 660 feet recommended in Exhibit 6. The biologist indicated that there should be no impact to Bald eagles based on current development plans

and nesting locations. (See Exhibit 6, Biologist Email Correspondence)

Federally-listed species were also reviewed. An Official Species List was provided by the U.S. Fish and Wildlife Service ("USFWS") in August, 2023. (See Exhibit 7.) The species list included the Northern Long-eared Bat (*Myotis septentrionalis*) ("NLEB"), identified as a Threatened species; and the Monarch Butterfly (*Danaus plexippus*), with a current Candidate status. No known hibernacula or maternity roost trees exist on the Site, and all tree clearing would be performed consistent with the USFWS final rule, which would avoid an incidental take of the NLEB. A Determination Key ("Dkey") has been created by USFWS to allow for verification or concurrence for Project activities. This Dkey is an online tool that allows for a streamlined review of activities and provides automatic verification of certain activities that are allowed by the NLEB Final Rule, which prohibits incidental take of the NLEB. A determination has been received via the Dkey for this Project which indicates that no take of the NLEB is expected from the Project. (See Exhibit 7.)

D. WETLANDS AND WATERCOURSES

A wetland delineation and verification was performed by SLR International Corporation ("SLR") on November 17, 2021. The determination included the presence or absence of wetlands and/or watercourses and delineated any boundaries of wetlands or watercourses. (See Exhibit 8.) The wetland resources on the Site are limited to the ordinary high water ("OHW") line along the southern bank of the Quinebaug River, and wetland areas to the west of the Site. No work is proposed inside wetland or watercourse resource areas. A small (0.4 acre) portion of the Project Site would extend into the 100-foot wetland regulated area zone. No wetland impacts are proposed or anticipated.

E. VERNAL POOLS

No vernal pools or evidence of potential vernal pools were identified on the Site as part of the wetland delineation and verification site visit performed by SLR. Therefore, no impacts to vernal pools would occur due to the Project.

F. STORMWATER

As part of the Site development, stormwater calculations were performed in accordance with DEEP standards (2004 Connecticut Stormwater Quality Manual). (See Exhibit 9 for Project Watershed plans.) Additionally, a Soil Erosion and Sediment Control plan, in accordance with Connecticut Guidelines (2002 Connecticut Guidelines for Soil Erosion and Sediment Control) has been created and included in the Project Site plans. (See Exhibit 2, sheet C-4.0, Grading and Erosion Control Plan.) Under Connecticut law, any construction project that disturbs one acre or more is required to obtain a General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("Construction Stormwater General Permit") from DEEP. The total area of disturbance for the Project is estimated to be 1.9 acres; therefore, a Construction Stormwater General Permit would be applied for and received prior to the start of construction.

G. FLOOD ZONES

FEMA flood hazard mapping has been reviewed for the Project Site, which shows a regulatory floodway associated with the Quinebaug River, as well as Special Flood Hazard Area Zone AE with a Base Flood Elevation (BFE) determined. This BFE has been determined to vary between 35.5 feet and 36 feet above mean sea level. This flood elevation has been correlated with the surveyed elevations of the Site and mapped on the Project Site plans. This analysis shows that no Project work would be performed within the 100-year flood zone (Zone AE). (See Exhibit 10 for the FEMA Flood Hazard Layer FIRMette.)

H. AQUIFER PROTECTION AREAS

The Site was reviewed for proximity to Aquifer Protection Areas. According to the Connecticut Aquifer Protection Areas mapper provided by DEEP, the closest Aquifer Protection Area is approximately 4.2 miles northwest of the Project Site. (See Exhibit 11.)

I. GROUNDWATER

The Project would utilize the same location as the existing Tunnel Jet kerosene-fired turbine generator. On July 19, 2023, FirstLight discovered a leaking flange in the fuel distribution line connected

to the turbine engine. The release was contained, and DEEP was notified on July 20, 2023. DEEP assigned the incident case No. 202301918. FirstLight, following DEEP requirements and guidelines, has been investigating this matter and an Interim Remedial Action report was submitted to DEEP on March 25, 2024. In May of 2024, three monitoring wells were installed to delineate possible groundwater contamination. FirstLight has made DEEP aware of the release and mitigation efforts and will continue to coordinate with DEEP to ensure all appropriate remediation actions are performed. Construction of the Project will not detrimentally affect these remediation efforts and will conform to any requirements or conditions included in the final remedial action plan approved by DEEP. The Petitioner will provide additional details, including a copy of the final remedial action plan, upon request of the Siting Council. Further, the Petitioner will coordinate with DEEP on an ongoing basis during the construction of this Project as needed.

No groundwater would be consumed as part of the Project, nor would any groundwater be discharged from the Site. Groundwater underlying the Site is designated as "GA" by DEEP Water Quality Classifications Map. (See Exhibit 11.) All groundwater not specifically classified is considered Class GA. The Project would meet DEEP's water quality standards and, as such, no impact to groundwater is anticipated.

J. SCENIC, RECREATIONAL AND CULTURAL RESOURCES

The visual and scenic value of the Tunnel site, which includes the Tunnel Hydro and Tunnel Jet, are enjoyed primarily from the natural shoreline of the Quinebaug River and from the adjacent residential areas. Paddlers, fishermen, and hikers are the primary users, and access is provided via the River way. The Project would not alter these scenic natural resource values.

Recreational resources as described above are associated with the co-located Tunnel Hydro facilities and include a canoe portage and natural lands open to the public free of charge. This Project would result in limited forest harvesting, but would not impact the public recreational opportunities in the adjacent waterway to fish, boat, and enjoy the Quinebaug River.

There are no properties listed on the National Register of Historic Places recorded within or in the

vicinity of the Area of Potential Effects ("APE"). (See Exhibit 12.) A notable cultural resource on the Site is the Tunnel Hydro Facility and associated dam, an engineering feat of the early Industrial Age. Constructed in 1919, this early hydroelectric facility and the associated dam provide a look back in time when the rivers of this region were impounded to provide electricity to the adjacent textile and furniture industries in the City of Norwich and throughout the Shetucket, Quinebaug, and Thames River Basins.

A Project Notification Form was submitted to the State Historic Preservation Office ("SHPO") to screen for archaeological and historic resources in or around the APE. Several previously recorded archaeological sites have been reported in the general vicinity of the APE. Based on these other sites, and the environmental characteristics of the Site, SHPO determined that a professional archaeological assessment survey be conducted. (See Exhibit 12.) FirstLight engaged Heritage Consultants, LLC to perform this assessment, with field work performed between January and February 2023.

The results of this Phase II survey were provided to SHPO in the spring of 2023. Upon review, SHPO determined that a Phase III site investigation would be required prior to construction. FirstLight and New Leaf Energy are continuing to work with SHPO and intend to comply with all requirements of the final SHPO determination. (For more information, see Exhibit 12.)

K. VISUAL EFFECTS

The nearest residential properties are located over 875 feet to the north of the Project, as shown in Exhibit 13. North of the proposed Project, a vegetated naturally occurring forest would remain along the steep riverbank and the Project would remain well below the height of the tree canopy, ensuring no visual changes to the vista enjoyed by the adjacent neighbors or the recreational public.

L. SOUND

A sound level modeling report for the Project was prepared by Epsilon Associates, Inc. (See Exhibit 14.) Computer modeling was used to predict worst-case future L_{EQ} sound levels from the Project. Sound producing equipment proposed for the facility includes the battery storage units and inverters. The noise producing component for both types of equipment are the on-board HVAC units. The worst-case

scenario in which every HVAC unit is running at maximum capacity was analyzed. The predicted Project-only L_{EQ} sound level at the Project property line is 48 dBA, which occurs south of the Project. This is below the most restrictive Connecticut noise control regulation limits for industrial sources of 51 dBA.

M. AIR QUALITY

The Petitioner has reviewed the current emissions of the Tunnel Jet facility and determined that it has a desire to support the decarbonization of the electric grid by replacing it with a zero emissions Tunnel BESS Project described in this Petition. The Project as proposed would provide a partial replacement of the on-site generation capability of Tunnel Jet and reduce operational emissions to zero. In this way, the Project improves air quality for the region and the State of Connecticut, while helping to accelerate the goals of a future carbon-free electrical grid. As with all construction projects, this Project may cause minimal, short-term, and local air emissions due to construction equipment and potential dust generated by vehicle travel and earthworks. As part of the Site construction's best management practices for contractors, a section would be included in the sediment and erosion control plan to minimize dust with water, as needed, during the limited period in early construction phases when ground-disturbing activities are occurring. The current access roads on site are already paved and any new access roads needed during construction would be managed consistent with the guidelines and methodologies defined in the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control" (DEP Bulletin 34). The preferred methods that are expected to be utilized include mulching, sprinkling, straw bales, silt fences, erosion control blankets, waddles, and/or other techniques to reduce the potential for wind-born sediment. The Project Site is naturally protected from the prevailing westerly wind by the surrounding forest canopy.

The Petitioner would minimize construction-related vehicle exhaust emissions by utilizing efficient construction equipment and employing construction phasing sequences during construction to reduce the duration of work time needed on open soils. All construction equipment would be maintained in proper working condition and efforts would be made through the phasing sequences to minimize the amount of idling time of construction equipment.

N. SOILS

During preliminary site investigation and design, a soils investigation was performed on the Site as part of the forestry inventory completed by Ferrucci & Walicki. (See Exhibit 5, pages 7 & 8.) This investigation found that the soils on the Site are not mapped as wetland soils, as was further evidenced by the wetland delineation. (See Exhibit 8.) Additionally, no Prime Farmland Soils are present on the Site. A portion of the Project parcel is mapped as Statewide Important Farmland Soils. Approximately 1.3 acres of this area is included in the Project's area of disturbance. No portion of the Site is currently used for agricultural purposes; therefore, the Project would have no direct impact to agricultural activities.

Earthmoving activities that would result in changes to the soil cover type are proposed as part of the Project; however, no export or import of soil is proposed. Topsoil would be removed from the area within the perimeter fence, earthwork would be undertaken to bring grade to the required elevation, and then finished with crushed stone to provide a stable access surface for battery delivery, installation, and maintenance. All soil handling would be performed in accordance with DEEP standards and requirements related to the fuel leak remediation activities discussed in the Groundwater section above.

O. FAA DETERMINATION

The Site was reviewed using the Federal Aviation Administration ("FAA") Notice Criteria Tool to determine any hazard to air navigation. The FAA Notice Criteria Tool indicated that the Project Site does not exceed the Notice Criteria. (See Exhibit 15.) Additionally, no particulates would be exhausted from the Site, which could cause a hazard to air traffic or necessitate a plume analysis. As discussed above, efforts would be made to suppress any airborne soils during construction.

VI. PROJECT CONSTRUCTION AND MAINTENANCE

A. CONSTRUCTION SEQUENCING

The Project construction and Site work is expected to begin in Q2 2026 and last approximately 12

months; it is expected to be completed and online by July 2027. All construction would be performed in a manner that matches the Site-specific conditions and phases as defined on the "Erosion and Sediment Control Plan". (See Exhibit 2.) Prior to any work commencing, the limits of disturbance would be staked in the field and ringed by a temporary three foot tall high-visibility construction fence. The goal of this defining barrier is to minimize the impact to the natural areas to be protected during construction by ensuring no work is done outside the permitted limit of disturbance. The Project is expected to be constructed in phases to reduce potential adverse impacts, while maximizing and improving efficiency of the construction equipment being sequenced in and out of the Project Site. Prior to commencing construction on this Project, the existing Tunnel Jet facility will be fully decommissioned and removed from the Site. The first stage of Project Site work would be a Phase III archaeological investigation, as detailed in Section V.J., above. This archaeological investigation would be timed to directly precede construction of the BESS and is expected to take approximately six months. During this time, excavations would be performed by qualified archaeologists in accordance with SHPO standards. Select tree clearing and stump removal may take place at this stage, under the direction of the qualified archaeologist. Upon completion of archaeology work to the satisfaction of SHPO, Project construction would commence. The stages of the Project would include, but not be limited to: staking the limit of disturbance; marking the trees to be harvested; installing temporary construction site signage and muster points; harvesting the trees and removing the merchantable timber off site for use; grubbing the Site of roots and stockpiling topsoil in a designated area surrounded by erosion controls; installing erosion controls at the onset of significant ground-disturbing activity; Site grading to meet designed specifications; installation of all underground conduits, stormwater and other utilities; pouring concrete pads; top dressing of the Site in the final footprint inside of the perimeter fence; installation of the perimeter security fencing; and installation of the batteries and electrical infrastructure. Final Site work would consist of enclosing the remainder of the security fencing if any was omitted for deliveries; installation of public safety signage; and seeding of any areas not previously stabilized or areas requiring an additional application of seed. Upon completion of construction,

several months of testing and commissioning would commence before the Site is ready to begin commercial operation.

The Petitioner has selected a modular technology not only for its public safety and fire suppression values (discussed in detail below), but also because it aids in the construction sequencing, since the equipment is manufactured or prefabricated off-site and requires minimal electrical work once in place. This results in a reduced duration of construction activities required at the Project Site and limits the interval within which soils, wildlife habitat, scenic and recreational impacts are occurring on the Site.

B. CONSTRUCTION SCHEDULE AND WORK HOURS

The Petitioner expects that construction would be conducted using a five-day per week schedule, generally between the hours of 7:00 a.m. and 7:00 p.m. Though not anticipated at this time, occasional work may be performed on Saturdays or Sundays, or during evening weekday hours (daylight permitting) to minimize the overall duration of any related temporary construction impacts. There will be some periods where there would not be substantial construction actively at the Site. When the Site is not actively under construction or attended, the Site would be stabilized and inspected after significant storm events by FirstLight personnel until such time that the next construction phase progresses.

C. TRAFFIC

Traffic associated with construction of the Project would include vehicle trips for (i) Site work and deliveries of stone and concrete, structural steel, building and electrical equipment, and (ii) craft workers traveling to the Site for construction-related activities. Primary Site work and delivery trips would be related to tree clearing (logging trucks), concrete work (concrete trucks), and battery delivery (flatbed trucks). In addition to these deliveries, an average of five to ten craft workers would be on Site each day, typically arriving in personal vehicles. At peak construction, there may be up to 20 workers on Site. These vehicles would be parked well within the Project area, distant and screened from public ways.

Vehicular traffic entering and exiting the Site would utilize an existing driveway on Roosevelt Ave. Extension. Most deliveries and workers are anticipated to come from the north or west of the Site. Deliveries

from the north will utilize US-395 and Old Jewett City Road. Deliveries from the west are anticipated to exit US-395 onto CT-82 and utilize the larger thoroughfares through Norwich such as CT-2 and CT-12, as well as the 8th Street Bridge to access Roosevelt Ave. Extension. These routes avoid traveling down narrow residential areas or through downtown Norwich. The Project team would coordinate with local officials as needed to ensure safe and orderly traffic flows during construction. Post-construction, the Site would only require periodic maintenance, typically five or six visits annually, consisting of one to two vehicles per visit.

D. CONSTRUCTION SAFETY

The Petitioner is committed not only to the wellbeing of the environment, but also to the health and safety of the employees, contractors, and the diverse communities in which we all live and work. Both FirstLight and New Leaf Energy have extensive experience working in the industrial electrical generation business on large-scale projects throughout New England and have retained and maintained a substantial track record of worker and workplace safety. Thus, an important element of the Petitioner's impact mitigation plan is to ensure that construction-related activities are performed in a safe, responsible, and low impact manner. The Petitioner would use respected, professional partner companies to construct and oversee construction activities.

E. LONG-TERM MAINTENANCE

The Project Site has been designed so as to minimize future maintenance costs and incorporate long-term stormwater, site stabilization, and surface materials that will provide for minimal herbicide use to control vegetation. Native species suited to the soils onsite would be used to minimize the needs for fertilizers and irrigation once established. In addition, the Site materials such as galvanized fencing, plastic buried conduit, concrete foundations, and other utilities and surfaces have all been selected to provide for a long service life and/or can easily be recycled after their useful life. (See Exhibit 16.)

F. PUBLIC HEALTH AND SAFETY

FirstLight owns and operates the largest hydroelectric and pumped storage facilities in Connecticut

and maintains an excellent safety track record. This background of knowledge and experience would be employed to ensure the BESS facility is designed, managed, operated, and maintained with the same level of excellence and diligence as FirstLight's existing portfolio of generation assets. The Project would be designed, constructed and maintained in a manner to ensure the public's safety as well as its compliance with all applicable building codes and regulations.

Security and Operational Safety

Safety measures at the Site would include a perimeter fence and an access-controlled security gate. The facility would be monitored onsite by FirstLight[1] personnel, as well as remotely monitored with sensors from FirstLight's commercial and operational groups, which are staffed 24 hours per day every day of the year. Appropriate lighting would allow for Site safety, visibility and security. Onsite lighting would be focused so as to mitigate light pollution, and shaded to ensure illumination does not impact nearby residences. Only FirstLight's authorized personnel or approved contractors would have access to the Project during its construction, operation, and maintenance. All FirstLight employees are highly trained in the operation of generating facilities, and contractors would receive the required training prior to performing work.

Appropriate signage would be installed during construction and maintained post-construction to inform the public and others of the dangers and presence of high-voltage equipment inside the fenced area. FirstLight allows limited public access to the Site for recreational opportunities and the expanded Project footprint would not affect the public's access in any way. Signs would be posted to identify FirstLight's areas of public access for recreational opportunities, as well as appropriate hazard signage related to the Hydro and BESS facilities.

Protection Systems and Monitoring

The Project design would incorporate fire alarms and fire protection systems that comply with

[1] FirstLight Power Services LLC will be the "Operator" of the BESS. FirstLight Power Services LLC is a wholly owned subsidiary of FirstLight.

National Fire Protection Association ("NFPA") 855: Standard for the Installation of Stationary Energy. In accordance with industry best practices, the BESS would employ a range of fire prevention and detection measures that monitor and react to abnormal battery operating conditions. The safety design of the energy storage modules employs a layered approach, with a focus on limiting or containing any hazards early and effectively in the case of certain events. The first layer in this redundant system is the Battery Management System ("BMS"). The BMS would continuously monitor and respond appropriately to abnormal operation as to each battery cell's voltage, current and temperature. In the event of an exceedance of normal operating parameters of any of these conditions, the BMS would also transmit an alarm to personnel at FirstLight's commercial and operational group who would make real-time operational and emergency responses similar to their current responsibilities overseeing, operating and controlling dam safety and mitigating flooding impacts Statewide. Additionally, the BESS would have on-site automated control systems in place to shut down the facility if appropriate without the intervention of FirstLight remote communications or on site staff. In such automated shut down instances, the BESS would remain shut down until the cause of the alarm is determined and the system is reset locally by on-site FirstLight personnel. A smoke and gas detection system would also be integrated into the facility's automated fire alarm system. This fire detection and monitoring system would provide early detection measures to detect fire conditions and would also be connected to FirstLight's commercial and operational group. (See Exhibit 4 for additional information on the Project's fire monitoring, detection and response system.)

In addition to fire monitoring, detection and response systems, the Project would also have comprehensive fire suppression systems designed to meet or exceed NFPA requirements. The BESS fire suppression system would consist of a thermally activated aerosol gas fire suppression system. The gas fire suppression system canister is located inside the battery enclosure and can quickly suppress a fire. The energy storage units in the equipment proposed for this Project are built using a modular approach. This "modularity" reduces the chance of propagation or spread of fire from one module to the next, since each battery unit has its own monitoring system, HVAC system, safety-rated enclosure, and fire suppression

system. In this way, the risk of fire propagation between units is reduced. The modular method approach greatly improves the public health and safety of deploying a battery system of this size. Additionally, each module's safety-rated enclosure has been designed to enable controlled direct venting in the event of a fire within a particular battery enclosure. This approach increases public safety while simultaneously protecting the remaining energy storage equipment from being damaged by the fire. Training on the Project's fire detection, monitoring response and suppression systems would be closely coordinated with area municipal fire departments, as is the case with all of FirstLight's assets in Connecticut.

Fire Response

Defensive firefighting tactics are the best response to a fire in a BESS. A defensive firefighting tactic means a self-consumption approach, which allows the BESS to burn itself out safely and fully. This approach allows for flammable off-gassing to be consumed during a fire event to reduce the chances of deflagration (explosion) occurring within the enclosure. Water is utilized defensively to protect and cool nearby BESS units or other equipment or structures. Adequate spacing of equipment and structures in the site layout facilitates the defensive approach by making it significantly less likely that any fire event would affect more than a single piece of equipment. Additionally, the BESS would be sited in a location that provides adequate separation distances from any sensitive exposures such as residential structures.

FirstLight would leverage its experience with operating assets and communicating with municipal emergency responders during emergency events to ensure the risk of fire is mitigated to the best of its ability. The fire systems described above would provide for a comprehensive and substantial range of measures to ensure the safe and reliable operation of the Project.

Deflagration and Off-Gas Management

Each BESS enclosure incorporates a ventilation system comprised of a combustible gas detector, fan control box, air inlet electrical shutter, and exhaust fan. In the event that combustible gas is detected and reaches a predetermined threshold, an alarm would be sent to the management system, and the venting system would be activated to begin venting gasses out of the enclosure. Studies of the composition of

battery fires have shown that the toxic gas emissions from a battery fire resemble typical plastic fires, such as would be expected in a typical residential house fire. A BESS fire does not pose any unique concerns relating to air toxicity.

Firefighting Effluent and Spill Management

Direct water suppression is not encouraged for BESS fires. While direct water suppression can be used as a defensive tactic in areas surrounding the battery system, it is not likely to be an efficient or necessary means of mitigating a thermal event within the battery container itself. However, in the event that direct suppression on the battery system is used, effluent from BESS fires is similar to other, more traditional sources of fire events. Toxicity tests on effluent from fire suppression water on Battery Electric Vehicles indicate that effluent is similar to extinguishing material from internal combustion engine vehicles. Battery Electric Vehicles utilize similar battery chemistry and can be used to understand the effects of BESS fire events. If firefighting effluent is generated at the Project, it would be captured by the surrounding gravel surface areas, as well as the stormwater system. No effluent would flow directly to the Quinebaug or Shetucket River. Areas impacted by firefighting effluent during a fire event would have soil samples collected and analyzed for constituents associated with battery fires. Remediation would follow CT DEEP guidance and may include soil removal or monitoring well installation, depending on the size of the release. The best way to protect soils and groundwater from potential contamination is to refrain from employing a direct water suppression tactic. If the system is allowed to burn in place without copious amounts of water being applied, the resulting refuse can be more safely and completely removed from the Site and disposed of in the appropriate manner.

The potential for leaks with lithium-ion batteries is extremely low. To mitigate spill potential, as well as other hazards, the battery units would be continuously monitored. If any abnormality is present, an alarm would be sent to FirstLight's commercial and operational group that is staffed 24 hours per day, seven days a week. Additional sources of spill potential include electrical transformers. These transformers utilize a biodegradable oil for cooling. As an added measure of protection, all transformers would

incorporate secondary spill containment measures as required by the U.S. Environmental Protection Agency ("EPA"). This system utilizes a membrane surrounding the transformer equipment pads that would capture any fluid in the event of a transformer leak, eliminating the potential for fluid reaching the groundwater. Alternatively, continuous monitoring similar to the battery enclosure monitoring may be employed as a more active form of secondary containment, as permitted by the EPA. (See Exhibit 3 for equipment data sheets for dielectric fluid used in these units.)

Electric and Magnetic Fields (EMF)

Like all electrical equipment, the Project would produce electric and magnetic fields ("EMF") during operation. The strength of an EMF is influenced by voltage, with higher voltage equipment producing stronger EMFs. The EMFs produced by the Project would dissipate rapidly with distance from the system and are relatively weak as compared with the adjacent existing electrical transmission infrastructure. As a result, post-construction EMF levels would be similar to pre-construction levels at the nearest residential property line.

G. DECOMMISSIONING

Decommissioning would occur at the end of the Project's life cycle, which is typically after 20 years, and would be completed through a third-party vendor to ensure proper recycling of batteries. The Petitioner's vendors' typical scope includes a pre-decommissioning inspection at the job site prior to decommissioning, decommissioning checklist & supervision, labor to remove battery racks, and placement of packaged battery assemblies onto a cargo shipping container (using DOT-approved battery packaging).

The third-party vendor would ensure that local, state and federal waste-handling requirements are met. Additionally, the vendor would determine if the batteries can be reused or recycled, reduce the charges in the batteries, disconnect the system, and make decisions on how to remove, transport and package the batteries and remove and transport the containers that house them. The third-party vendor would also determine how to reuse the other equipment on-site, such as the power conversion system and other scrap metal.

Other activities associated with removing a battery storage system from service include removal of all other electrical equipment such as transformers; breaking up concrete pads and footings; and removing electrical wiring, fencing, and electrical equipment. Underground conduit, culverts, and concrete would be removed to a depth of three feet and the Site would be regraded to match the surrounding topography.

A decommissioning plan and estimate will be prepared that details the anticipated materials handling and procedures that would be required to decommission the Project. Decommissioning costs shall be the responsibility of the owner at the time of decommissioning. However, in order to provide financial assurance to the Town of Preston and the landowner, a surety bond would be taken out prior to construction. The amount of the bond would be determined by an independent third party.

VII. MUNICIPAL CONSULTATION AND COMMUNITY OUTREACH

FirstLight and New Leaf Energy pride themselves on being good neighbors and members of the community. The first notice of this Project was made via a public press release in October of 2022. This press release provided the community with an early notice of FirstLight's plan to replace the aging Tunnel Jet kerosene-fired turbine with a BESS. Additionally, FirstLight and New Leaf announced a collaboration with Operation Fuel, an emergency energy assistance program, to provide $60,000 in seed funding to a renewable energy industry training program for local workers.

In early 2024, the Petitioner's representatives reached out to Preston First Selectwoman, Sandra Allyn-Gauthier, to request a meeting to present information about the Project. At her direction, on March 28, 2024, FirstLight and New Leaf Energy representatives met with Town of Preston officials to present the Project and gain feedback and comments. During this meeting, a presentation on the details of the Project was provided, as well as the Project plans. Information was also provided on the Connecticut Siting process, and feedback was encouraged. Preston Fire Chief, Keith Wusik, and Preston Building Official, Doug Colter, attended this meeting.

Following the meeting with Preston officials, a meeting with the Norwich Fire Department was

scheduled. This meeting took place virtually on April 10, 2024. In attendance were Norwich Fire Chief, Tracy Montoya, and Norwich Director of Training and Safety, Jason Erban. (See Exhibit 18 for a log of communications.)

Prior to submission of this Petition to the Connecticut Siting Council, notices of the Petition were mailed via certified United States Mail to all property owners within 250 feet of the Project boundary, and to all other persons and appropriate municipal officials and governmental agencies to whom such notice is required pursuant to RCSA §16-50j-40(a). (See Exhibit 17.) In addition to notification of the intent to file a petition for the Project with the Connecticut Siting Council, information on the details of the Project were provided. Representatives of FirstLight and New Leaf Energy will continue to be available to answer any questions abutters may have and notify them when construction commences.

VIII. CONCLUSION

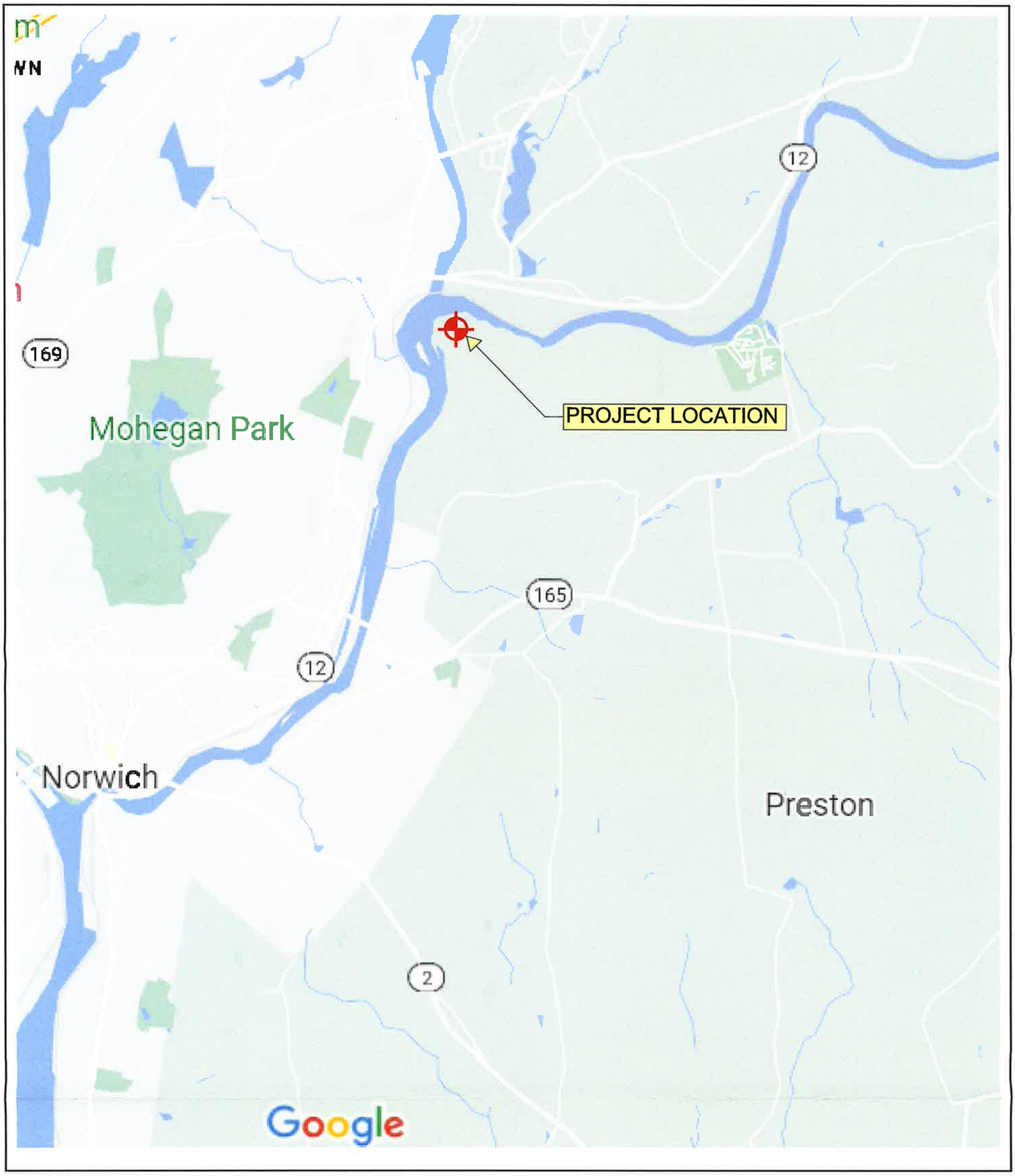
This Project would thoughtfully advance the State of Connecticut's zero carbon energy goals and environmental policies and would deliver a range of public benefits. Chief among them would be the improved ability of the energy grid to accommodate and efficiently use renewable sources of energy. The Project would simultaneously accelerate the removal of a permitted carbon-emitting generating asset from the energy market and leverage existing electrical and physical infrastructure to "repower" the existing Tunnel Jet electric generating asset as a carbon-free BESS. The Project would have substantial environmental benefits and limited environmental impacts, for which mitigations are in place through planning and design. Finally, FirstLight has been a member of the Connecticut community for over 100 years and will continue to work cooperatively with its neighbors and Municipal officials.

FirstLight respectfully requests that the Council issue a declaratory ruling that the proposed Project will comply with Connecticut DEEP air and water quality standards, will not have a substantial adverse environmental effect and, therefore, that a Certificate of Environmental Compatibility and Public Need is not required for the construction, operation, and maintenance of the Project.

EXHIBIT 1

Exhibit 1

Locus and Aerial Maps

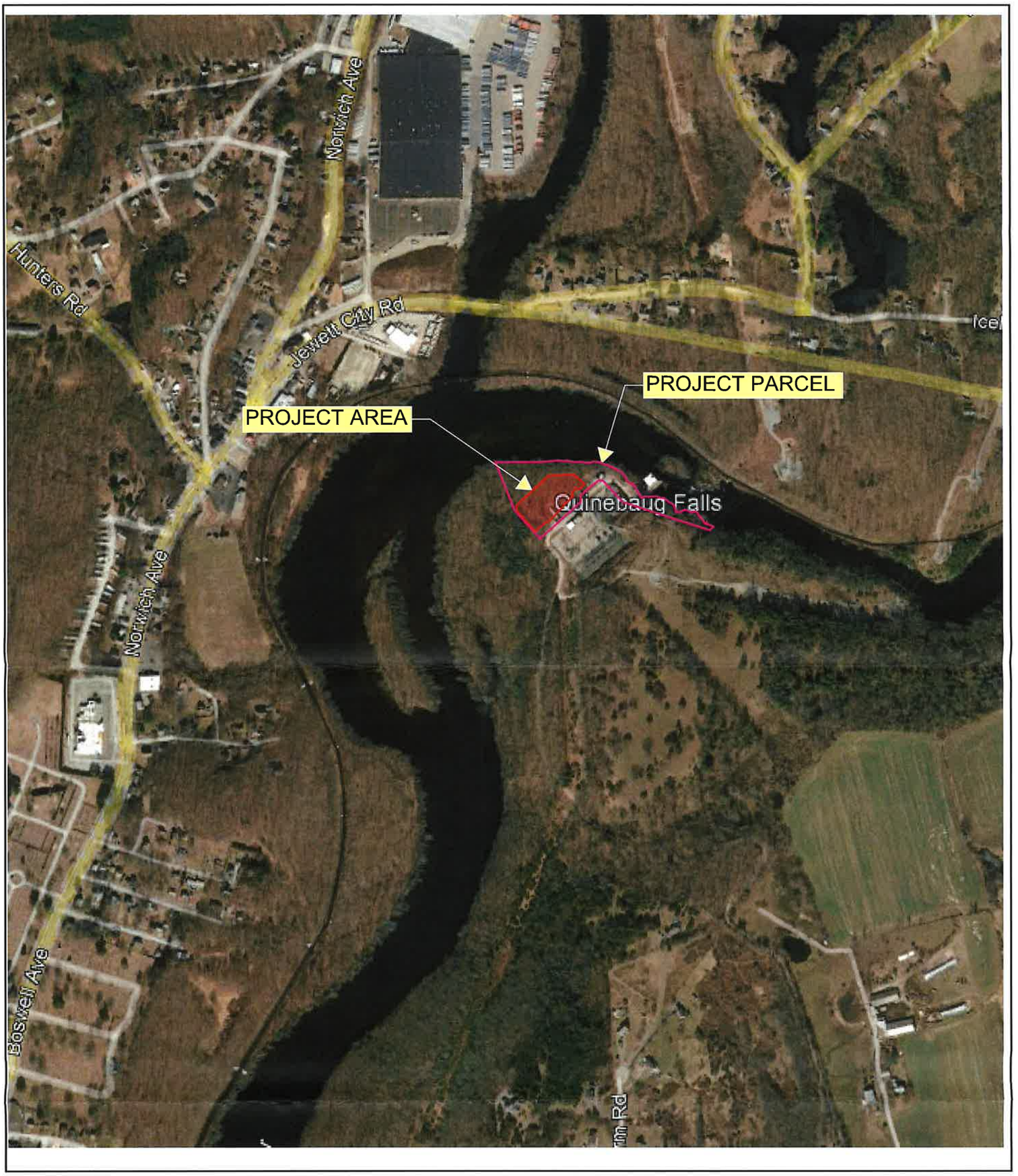


Date: 11-29-2022

FIGURE 1
Location Map
72 Roosevelt Ave Ext
Preston, CT

Data Source: Google Earth

new leaf energy
New Leaf Energy, Inc.
55 Technology Drive
Suite #102
Lowell, MA 01851



Date: 11-29-2022

FIGURE 2
Aerial Map
72 Roosevelt Ave Ext
Preston, CT

Data Source: Google Earth

new leaf energy
New Leaf Energy, Inc.
55 Technology Drive
Suite #102
Lowell, MA 01851

EXHIBIT 2

Exhibit 2

Site Plans

SITE USE PERMIT SET

72 ROOSEVELT AVE EXTENSION, PRESTON, CT 06365
16020.00 KWAC / 4 HOUR ENERGY STORAGE SYSTEM

GENERAL NOTES

1. AS CONTAINED HEREIN, "CONTRACTOR" IS ASSUMED TO BE THE EPC PROVIDER HIRED BY THE SYSTEM/PROJECT OWNER.
2. WHEN THERE IS A CONFLICT BETWEEN THESE GENERAL NOTES AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
3. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING: LOCAL BUILDING CODE, LOCAL ELECTRICAL CODE, ANY OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK AND THOSE CODES AND STANDARDS LISTED IN THESE DRAWINGS.
4. THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A CONSTRUCTION LEVEL DESIGN AND ASSOCIATED DRAWINGS AND DETAILS.
5. COORDINATE THESE DRAWINGS WITH SPECIFICATIONS AND MANUFACTURER INSTALLATION AND OPERATION MANUALS.
6. UNLESS OTHERWISE NOTED, THE DESIGN REPRESENTED ON THESE PLANS IS BASED ON THE INFORMATION AND CRITERIA LISTED IN THE "BASIS OF DESIGN" SECTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY SUCH INFORMATION IN PREPARATION OF THE CONSTRUCTION DESIGN.
7. THE EXISTING CONDITIONS REPRESENTED ON THESE PLANS ARE BASED ON PUBLICLY AVAILABLE INFORMATION AND THE SITE DISCOVERY SUMMARIZED IN THESE DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF SUCH INFORMATION AND SUPPLEMENT WITH ANY ADDITIONAL REQUIRED INFORMATION.
8. UNLESS INDICATED AS EXISTING (E), ALL PROPOSED MATERIALS AND EQUIPMENT SHALL BE CONSIDERED TO BE NEW.
9. ALL EQUIPMENT AND COMPONENTS SHALL BE MOUNTED IN COMPLIANCE WITH THE MANUFACTURER'S REQUIREMENTS, CONSTRUCTION DETAILS, AND/OR PRUDENT INDUSTRY STANDARDS.
10. TO THE EXTENT THAT TRESS AND OTHER FEATURES AFFECT THE SYSTEM'S PRODUCTION, SUCH PRODUCTION MODELING IS BASED ON THE EXISTING APPROXIMATE HEIGHTS AND LOCATIONS RELATIVE TO THE SYSTEM AND MAY BE IMPACTED AS TREES GROW AND OTHER FEATURES CHANGE.

PROJECT SCOPE

THIS PROJECT CONSISTS OF THE INSTALLATION OF BATTERY ENERGY STORAGE EQUIPMENT, PER THE SYSTEM DESCRIPTION BELOW. THE ENERGY STORAGE MODULES WILL BE INSTALLED IN PURPOSE BUILT ENCLOSURES WITH INTEGRATED FIRE SUPPRESSION AND COOLING SYSTEMS. THE ENERGY STORAGE MODULES WILL BE WIRED IN SERIES AND PARALLEL TO ACCOMMODATE THE POWER REQUIREMENTS OF THE POWER CONVERSION SYSTEM OR DC-DC CONVERTER (DEPENDENT ON PROJECT REQUIREMENTS). THE COMBINED POWER WILL BE CONNECTED TO CERTIFIED POWER CONVERSION SYSTEMS THAT CONVERT AC/DC AND DC/AC FOR CHARGE/DISCHARGE CAPABILITIES. DC-DC CONVERTERS WILL BE USED IN DC COUPLED PROJECTS WITH ONLY CERTIFIED INVERTERS (DC/AC) DISCHARGING ENERGY TO THE GRID.

ENERGY STORAGE SYSTEM DESCRIPTION

SYSTEM POWER CAPACITY	16020 KWAC
SYSTEM ENERGY CAPACITY	4 HOURS AT RATED POWER CAPACITY
POWER CONVERSION SYSTEM / INVERTER	(6) SMA SUNNY CENTRAL STORAGE 3950 UP-US

LOCATION MAP

AERIAL VIEW

DRAWING LIST

SHEET NUMBER	SHEET TITLE
T-1	TITLE PAGE
CIVIL	
C-1.0	EXISTING CONDITIONS PLAN
C-2.0	TREE CLEARING PLAN
C-3.0	LAYOUT AND MATERIALS PLAN
C-4.0	GRADING AND EROSION CONTROL PLAN
C-5.0	CIVIL DETAILS
C-5.1	CIVIL DETAILS

APPLICABLE CODES AND STANDARDS

2017 NATIONAL ELECTRICAL CODE WITH CONNECTICUT AMENDMENTS
2018 CONNECTICUT STATE BUILDING CODE
UL-1741 – INVERTERS, COMBINER BOXES
UL-1642 – STANDARD FOR LITHIUM BATTERIES
UL-1973 – STANDARD FOR BATTERIES FOR USE IN LIGHT ELECTRIC RAIL (LER) APPLICATIONS AND STATIONARY APPLICATION
UL-9540 – STANDARD FOR ENERGY STORAGE SYSTEM AND EQUIPMENT
2020 STANDARD FOR THE INSTALLATION OF STATIONARY ENERGY STORAGE SYSTEMS NFPA 855

PROJECT DIRECTORY

SYSTEM / PROJECT OWNER
FIRSTLIGHT POWER, INC.
100 DISTRICT AVENUE, SUITE 102
BURLINGTON, MA 01803

LAND OWNER / HOST
FIRSTLIGHT POWER, INC.
100 DISTRICT AVENUE, SUITE 102
BURLINGTON, MA 01803

AUTHORITY HAVING JURISDICTION
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE
NEW BRITAIN, CT 06051

UTILITY
EVERSOURCE CT

CIVIL ENGINEER
FIRM: NEW LEAF ENERGY, INC
CONTACT: BRANDON SMITH, P.E.
PHONE: 978-221-3093

DESIGN ENGINEER
FIRM: NEW LEAF ENERGY, INC
CONTACT: AARON MILLER
PHONE: 856-803-6495

ELECTRICAL ENGINEER
FIRM: NEW LEAF ENERGY, INC
CONTACT: AHARON WRIGHT, P.E.
PHONE: 978-221-3081

GENERAL ABBREVIATIONS

(E)	EXISTING
AHJ	AUTHORITY HAVING JURISDICTION
AL	ALUMINUM
APPROX	APPROXIMATE
ARY	ARRAY
BLDG	BUILDING
BSS	BORREGO SOLAR SYSTEM
CL	CENTERLINE
DAS	DATA ACQUISITION SYSTEM
DIA	DIAMETER
DO	DITTO
EW	EAST-WEST
FBO	FURNISHED BY OTHERS
FF	FORWARD FACING
GALV	GALVANIZED
HDG	HOT DIP GALVANIZED
HVAC	HEATING VENTILATION AND AIR CONDITIONING
ID	INSIDE DIAMETER
MFR	MANUFACTURER
MOD	SOLAR MODULE
NS	NORTH-SOUTH
NTS	NOT TO SCALE
OAE	OR APPROVED EQUAL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
PV	PHOTOVOLTAIC
PVC	POLY VINYL CHLORIDE
SCH	SCHEDULE
SS	STAINLESS STEEL
SSS	SOLAR SUPPORT STRUCTURE
STC	STANDARD TEST CONDITIONS
TBD	TO BE DETERMINED
TP	TAMPER PROOF
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
WP	WEATHER PROOF

REV 1.0

BASIS OF DESIGN

BOUNDARY & TOPOGRAPHIC SURVEY:
NORTH BY NORTHEAST
183 ROBIN ROAD
GLASTONBURY, CT

WETLAND STREAM AND DELINEATION REPORT:
SLR INTERNATIONAL CORPORATION
99 REALTY DRIVE
CHESHIRE, CT 06410

new leaf energy
55 TECHNOLOGY DRIVE, SUITE 102
LOWELL, MA 01851
PHONE: (866) 905-5373
FAX: (978) 843-6778
WWW.NEWLEAFENERGY.COM

NOT FOR CONSTRUCTION

STATE OF CONNECTICUT — PROFESSIONAL ENGINEER — LICENSED — 28134 — 08/19/2024

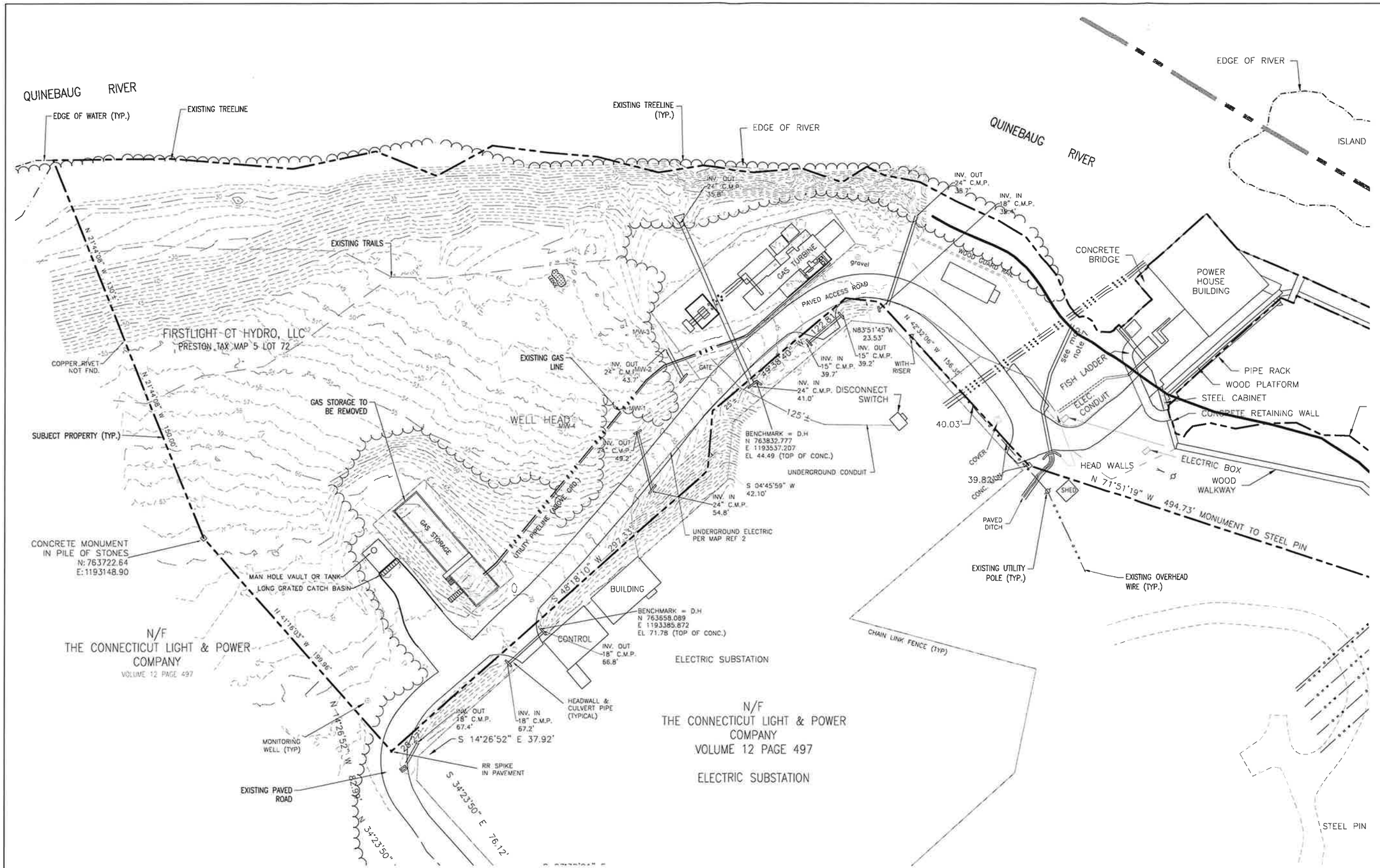
TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

PROJECT NUMBER: 120-0319

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
	08/19/24	NSB	BLS	SITE USE PLAN

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ANSI D 24" X 36"

T-1
TITLE PAGE



EXISTING CONDITIONS PLAN

SCALE: 1" = 30'

0 30' 60'

new leaf energy
55 TECHNOLOGY DRIVE, SUITE 103
LOWELL, MA 01851
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FAX: (862) 543-3770
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NOT FOR CONSTRUCTION

STATE OF CONNECTICUT BRANDON L. BAILEY 34111 LICENSED PROFESSIONAL ENGINEER
08/19/2024

TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

PROJECT NUMBER: 120-0319

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
	08/19/24	NSB	BLS	SITE USE PLAN

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

C-1.0
EXISTING CONDITIONS PLAN

LEGEND

TREE CUTTING AND STUMPING

QUINEBAUG RIVER

FIRSTLIGHT CT HYDRO, LLC
PRESTON TAX MAP 5 LOT 72

N/F
THE CONNECTICUT LIGHT & POWER COMPANY
VOLUME 12 PAGE 497

N/F
THE CONNECTICUT LIGHT & POWER COMPANY
VOLUME 12 PAGE 497

ELECTRIC SUBSTATION

DECOMMISSION AND REMOVE TUNNEL JET KEROSENE FACILITY (BY OTHERS)

PROPOSED TREELINE (TYP.)

REMOVE CHAIN LINK FENCE (BY OTHERS)

CUT TREES, REMOVE STUMPS (1.29± ACRES)

TREELINE TO BE REMOVED (TYP.)

DECOMMISSION AND REMOVE GAS PIPELINE (BY OTHERS)

REMOVE CHAIN LINK FENCE (BY OTHERS)

DECOMMISSION AND REMOVE GAS STORAGE TANK (BY OTHERS)

REMOVE ASPHALT AND DRAINAGE GATE STRUCTURE (BY OTHERS)

CT WET W-1
CT WET W-2
CT WET W-3
CT WET W-4
CT WET W-5
CT WET W-6
CT WET W-7
CT WET W-8

OHW-1 OHW-2 OHW-3 OHW-4 OHW-5 OHW-6 OHW-7 OHW-8 OHW-9 OHW-10 OHW-11 OHW-12 OHW-13

MW-1 MW-2 MW-3 MW-4

GAS STORAGE

UTILITY PIPELINE

TREE CLEARING & DEMO PLAN

SCALE: 1" = 30'

0 30' 60'

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STATE OF CONNECTICUT
BENJAMIN L. SMITH
No. 30141
LICENSED PROFESSIONAL ENGINEER
08/19/24

TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
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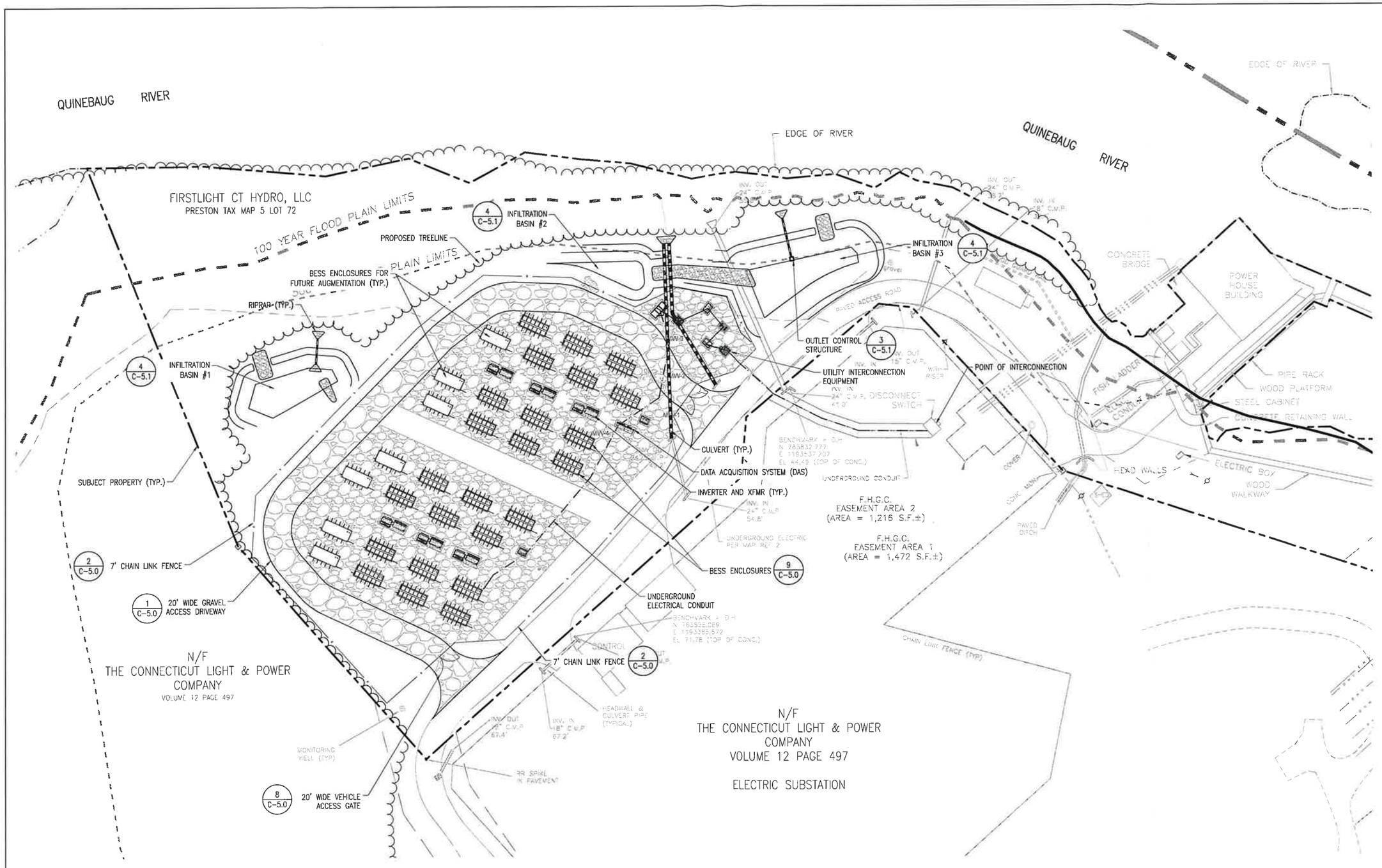
C-2.0
TREE CLEARING & DEMO PLAN



LAYOUT AND MATERIALS PLAN

SCALE: 1" = 30'

0 30' 60'

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STATE OF CONNECTION — BRANDON L. SEELEY — 34743 — LICENSED PROFESSIONAL ENGINEER

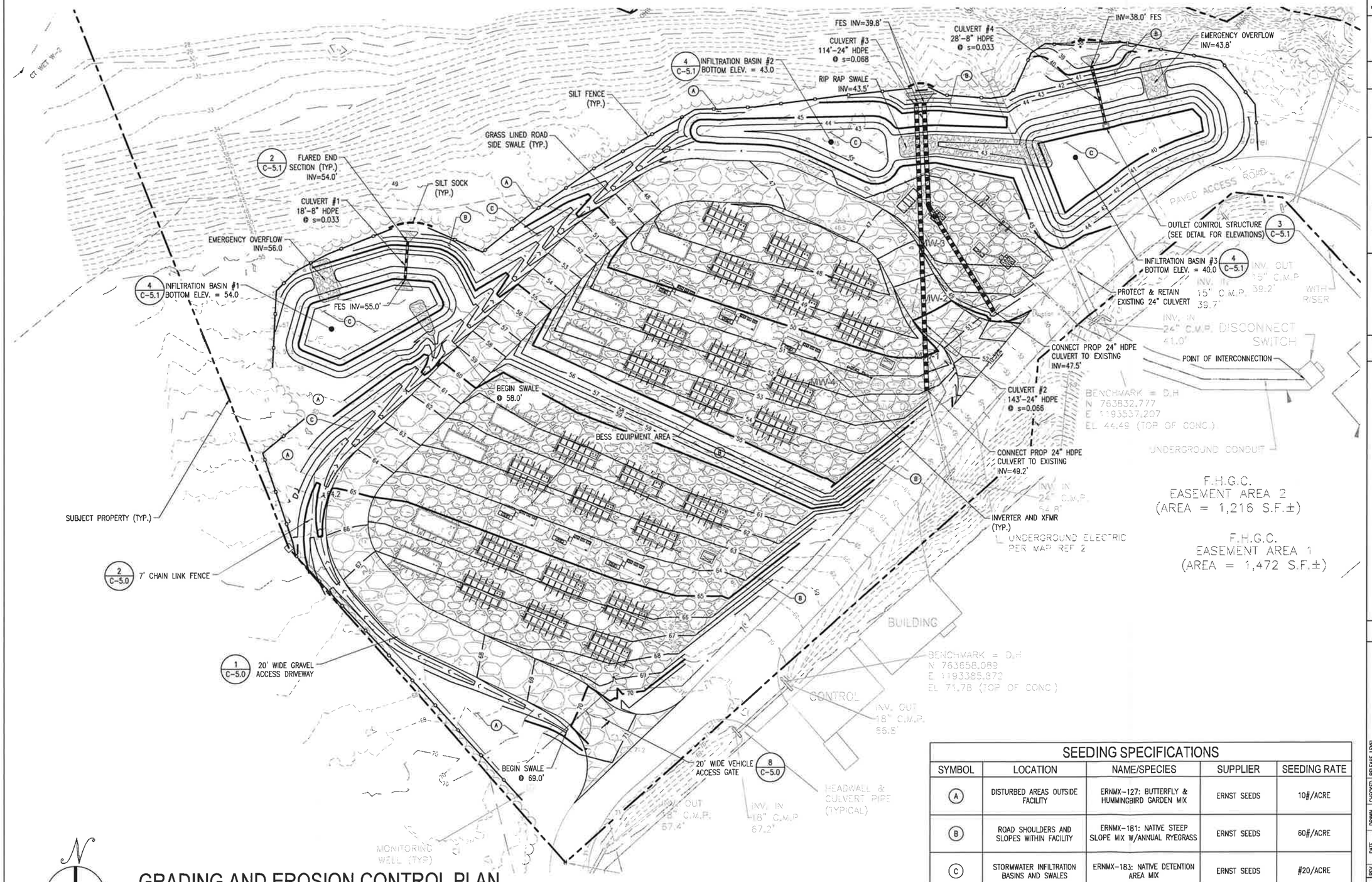
TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

PROJECT NUMBER: 120-0319

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
	06/19/24	NSB	BLS	SITE USE PLAN

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

C-3.0
LAYOUT AND MATERIALS PLAN



GRADING AND EROSION CONTROL PLAN

SCALE: 1" = 20'

0 20' 40'

SEEDING SPECIFICATIONS

SYMBOL	LOCATION	NAME/SPECIES	SUPPLIER	SEEDING RATE
A	DISTURBED AREAS OUTSIDE FACILITY	ERNMX-127: BUTTERFLY & HUMMINGBIRD GARDEN MIX	ERNST SEEDS	10#/ACRE
B	ROAD SHOULDERS AND SLOPES WITHIN FACILITY	ERNMX-181: NATIVE STEEP SLOPE MIX W/ANNUAL RYEGRASS	ERNST SEEDS	60#/ACRE
C	STORMWATER INFILTRATION BASINS AND SWALES	ERNMX-183: NATIVE DETENTION AREA MIX	ERNST SEEDS	#20/ACRE

1. BETWEEN NOVEMBER 1ST AND APRIL 1ST, EACH TYPE OF SEED SHALL HAVE AN ADDITIONAL 5#/ACRE OF WINTER RYEGRASS OR GRAIN RYE GRASS SEED.
2. IT SHALL BE THE SUB-CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE PROJECT LIMIT OF WORK IS STABILIZED (IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS/REQUIREMENTS/PERMIT APPROVALS) DURING THE LENGTH OF THE PROJECT.

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STATE OF CONNECTICUT BRIAN L. SAU 24381 LICENSED PROFESSIONAL ENGINEER 10/11/2024

TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

PROJECT NUMBER: 120-0319

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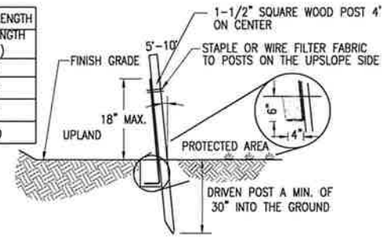
SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

C-4.0
GRADING AND EROSION CONTROL PLAN

MAX ALLOWABLE SLOPE LENGTH	
STEEPNESS	MAX LENGTH (FT.)
2:1	25
3:1	50
4:1	75
5+:1	100



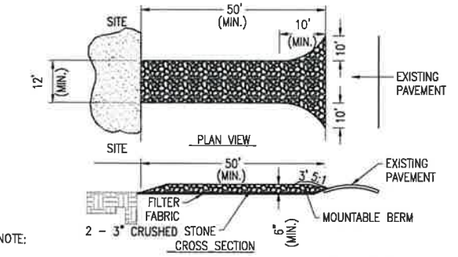
NOTES:

1. MAX DRAINAGE AREA FOR OVERLAND FLOW SHALL NOT EXCEED 1/4 ACRE-FOOT PER 100 FEET OF FENCE.
2. FILTER FABRIC TO BE FASTENED SECURELY TO FENCE POST WITH WIRE TIES OR STAPLES. POST SHALL BE STEEL EITHER "T" OR "U" SHAPED OR HARDWOOD.
3. FILTER CLOTH SHALL BE FASTENED SECURELY WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION.
4. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6 INCHES AND FOLDED. FILTER CLOTH SHALL BE FILTER X, MIRAFI 100X, STABILENKA T140N, OR APPROVED EQUAL.
5. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.
6. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SEDIMENT FENCE.

7 SILT FENCE

SCALE: NTS

XD_CIVIL_EROSION_SILT FENCE_P 2014-10-17



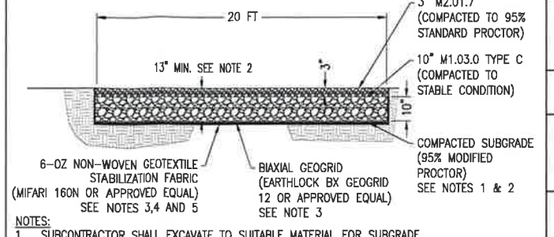
NOTE:

1. ENTRANCE WIDTH SHALL BE A TWENTY-FOUR (24) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
2. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY. BERM SHALL BE PERMITTED. PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AS NEEDED.

4 STABILIZED CONSTRUCTION EXIT

SCALE: NTS

XD_CIVIL_TEMPORARY CONSTRUCTION_STABILIZED CONSTRUCTION EXIT 06-10-2016

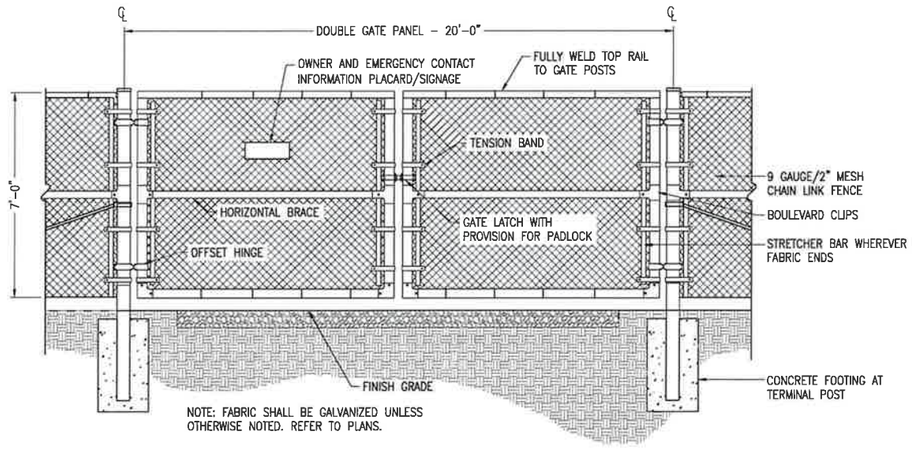


NOTES:

1. SUBCONTRACTOR SHALL EXCAVATE TO SUITABLE MATERIAL FOR SUBGRADE.
2. SUBCONTRACTOR SHALL COMPACT SUBGRADE TO PROVIDE SUITABLE SURFACE TO PLACE ROAD. REFER TO GEOTECHNICAL REPORT FOR SUBGRADE PREPERATION CRITERIA.
3. SUBCONTRACTOR SHALL FOLLOW MANUFACTURER INSTALLATION PROCEDURES.
4. WHERE OVERLAPPING OF GEOTEXTILE FABRIC IS REQUIRED, SUBCONTRACTOR SHALL OVERLAP A MINIMUM OF 24".
5. SUBCONTRACTOR SHALL REMOVE TEMPORARY CONSTRUCTION ACCESS ROADS, AND RESTORE TO PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CEOR AND THE GOVERNING AGENCIES.
6. SUBCONTRACTOR SHALL INSTALL CONDUITS FOR ALL ELECTRICAL CONDUIT CROSSINGS PRIOR TO INSTALLATION OF THE GEOGRID MATERIAL. THE GEOGRID SHALL NOT BE HORIZONTALLY CUT ONCE INSTALLED.

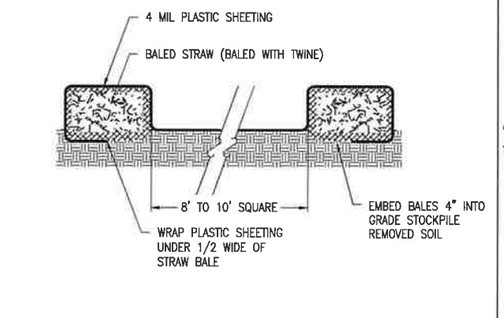
1 GRAVEL ACCESS ROAD

SCALE: NTS



NOTE: FABRIC SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. REFER TO PLANS.

8

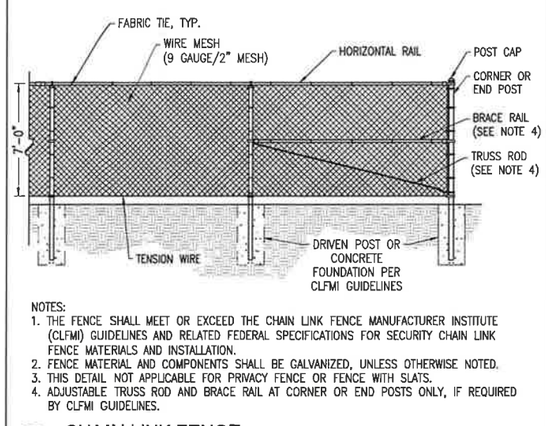


NOTE: PLASTIC SHEETING SHALL BE FREE OF TEARS OR HOLES. AFTER BASIN IS USED, WASHWATER FROM WASHOUT BASIN SHALL EVAPORATE OR BE VACUUMED OUT. REMOVE REMAINING HARDENED SOLIDS. REPLACE PLASTIC SHEETING AND STRAWBALES AS REQUIRED.

5 CONCRETE WASHOUT BASINS

SCALE: NTS

XD_CIVIL_CONCRETE WASHOUT BASINS 07-24-2017



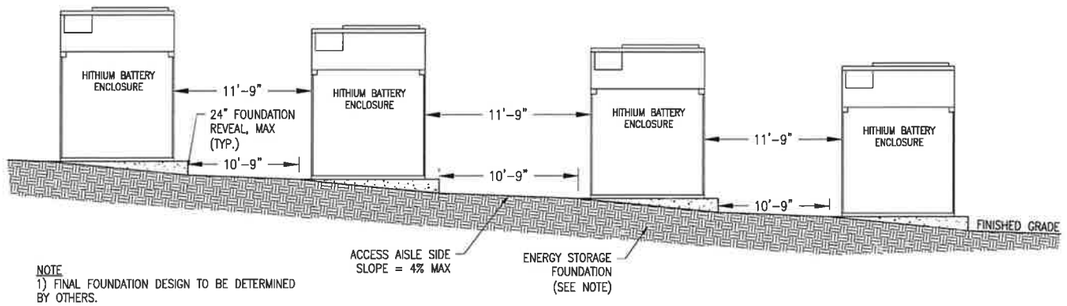
NOTES:

1. THE FENCE SHALL MEET OR EXCEED THE CHAIN LINK FENCE MANUFACTURER INSTITUTE (CLFMI) GUIDELINES AND RELATED FEDERAL SPECIFICATIONS FOR SECURITY CHAIN LINK FENCE MATERIALS AND INSTALLATION.
2. FENCE MATERIAL AND COMPONENTS SHALL BE GALVANIZED, UNLESS OTHERWISE NOTED.
3. THIS DETAIL NOT APPLICABLE FOR PRIVACY FENCE OR FENCE WITH SLATS.
4. ADJUSTABLE TRUSS ROD AND BRACE RAIL AT CORNER OR END POSTS ONLY, IF REQUIRED BY CLFMI GUIDELINES.

2 CHAIN LINK FENCE

SCALE: NTS

XD_CIVIL_FENCE_F_CHAIN_LINK_WILDLIFE_GAP 07-02-2020



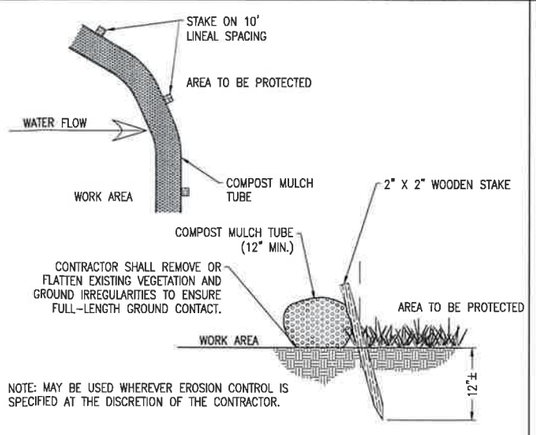
NOTE
1) FINAL FOUNDATION DESIGN TO BE DETERMINED BY OTHERS.

SECTION VIEW

9 ENERGY STORAGE CROSS SECTION

SCALE: NTS

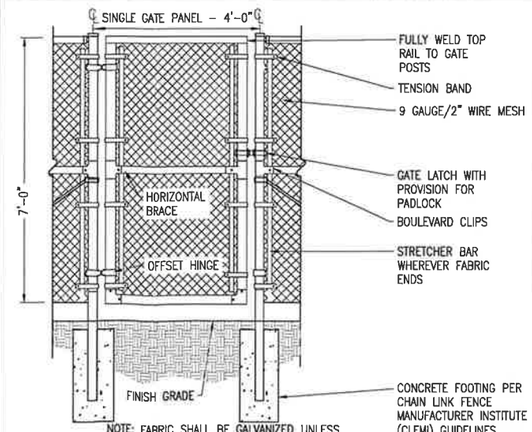
2022-12-07



NOTE: MAY BE USED WHEREVER EROSION CONTROL IS SPECIFIED AT THE DISCRETION OF THE CONTRACTOR.

6 MULCH TUBE

SCALE: NTS



NOTE: FABRIC SHALL BE GALVANIZED UNLESS OTHERWISE NOTED. REFER TO PLANS

3 4' ACCESS GATE

SCALE: NTS

XD_CIVIL_SITE CONSTRUCTION_4' WALK THROUGH GATE 07-25-2017

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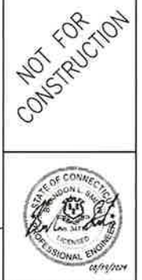

TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
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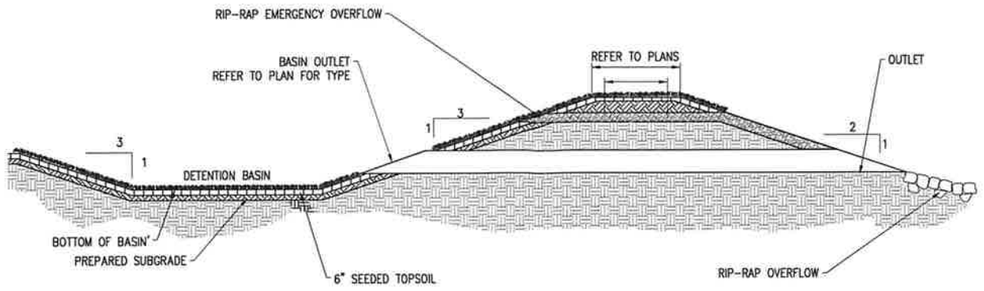
C-5.0
CIVIL DETAILS

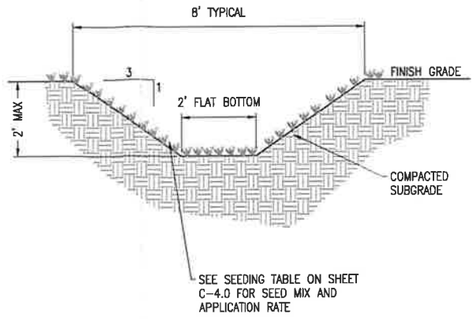
NOTES:
1. ALL DIMENSIONS TO BE COORDINATED WITH PLANS



4 DETENTION BASIN

SCALE: NTS

KO_CIVIL_DRAINAGE_DETENTION BASIN 03-14-2016

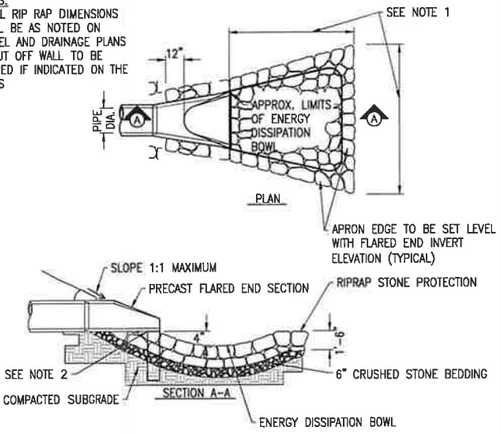


1 GRASS LINED SWALE

SCALE: NTS

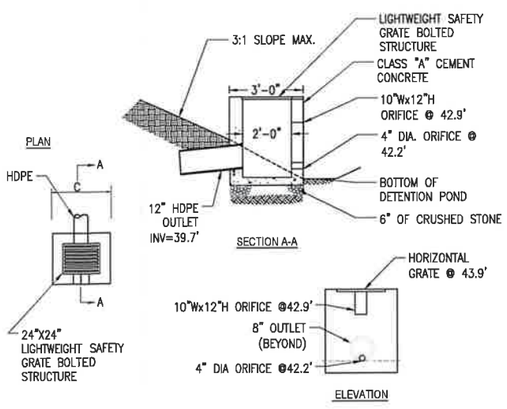
KO_CIVIL_DRAINAGE_GRASS_SWALE 07-13-21

NOTES:
1. ALL RIP RAP DIMENSIONS SHALL BE AS NOTED ON GRAVEL AND DRAINAGE PLANS
2. CUT OFF WALL TO BE POURED IF INDICATED ON THE PLANS



2 FLARED END SECTION/RIP-RAP APRON

SCALE: NTS



3 OUTLET CONTROL STRUCTURE

SCALE: NTS

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STATE OF CONNECTION — BRIAN L. SEWELL — LICENSED PROFESSIONAL ENGINEER — 08/19/2024

TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

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C-5.1
CIVIL DETAILS

EXHIBIT 3

Exhibit 3

Equipment Information

Dielectric Fluids

Cargill®

Electrical Apparatus

Envirotemp™ FR3™ Fluid

R2000

DESCRIPTION

Envirotemp™ FR3™ fluid is a renewable, bio-based natural ester dielectric coolant for use in distribution and power class transformers where its unique fire safety, environmental, electrical, and chemical properties are advantageous. Acceptance limits for new fluid are shown in Table 1. More than 20 years of field experience (with over one million transformers in service) confirms excellent performance.

Envirotemp FR3 fluid is formulated from seed oils and performance enhancing additives. It does **not** contain petroleum, halogens, silicones or corrosive sulfur. It quickly and thoroughly biodegrades[1] in the environment. The fluid is non-toxic in acute aquatic[2] and oral toxicity tests[3]. The Color Green tint reflects its favorable environmental profile (See Table 2) and readily distinguishes it from petroleum based oils.

Envirotemp FR3 fluid has exceptionally high flash/fire points of approximately 330/360 °C - the highest ignition resistance of any high fire point dielectric fluid currently available. It qualifies as a "high-fire-point", "less-flammable", "IEC Class K", and "non-propagating" fluid. Envirotemp FR3 fluid is Approved[4] by FM Global and Classified[5] by Underwriters Laboratories as a Less-Flammable Dielectric Liquid for use in complying with the National Electric Code[6] (NEC) and insurance listing requirements[7].

Envirotemp FR3 fluid is compatible with standard transformer construction materials and components. Envirotemp FR3 fluid should be stored, handled, and processed in a similar meticulous manner as transformer mineral oil. See Cargill's Envirotemp FR3 Fluid Storage and Handling Guide, S10, for additional information.

A transformer filled with FR3 fluid complies with the transformer temperature operating range requirements defined in IEEE C57.12.00 and IEC 60076-1.

TABLE 1

Acceptable values for receipt of shipments of new FR3 fluid

	Standard test methods		ASTM D6871	IEC 62770
PROPERTY	**ASTM**	**ISO/IEC**	**As-received new fluid property requirements**	**Unused new fluid property requirements**
Physical				
Color	D1500	ISO 2211	≤1.0	
Flash Point PMCC (°C)	D93	ISO 2719		≥250
Flash Point COC (°C)	D92	ISO 2592	≥275	
Fire Point (°C)	D92	ISO 2592	≥300	>300
Pour Point (°C)	D97	ISO 3016	<-10	≤-10
Density at 20°C (g/cm³)		ISO 3675		
Relative Density (Specific Gravity) 15°C	D1298		≤0.96	≤0.96
Viscosity (mm²/sec)	D445	ISO 3104		
100 °C			≤15	≤15
40 °C			≤50	≤50
0 °C			≤500	
Visual Examination	D1524	IEC 61099 9.2	bright and clear	clear, free from sediment and suspended matter
Biodegradation		OECD 301	readily biodegradable	readily biodegradable
Electrical				
Dielectric Breakdown (kV)	D877		≥30	
Dielectric Breakdown (kV)				
1mm gap	D1816		≥20	
2mm gap	D1816		≥35	
2.5mm gap		IEC 60156		≥35
Gassing Tendency (mm/min)	D2300		≤0	
Dissipation Factor				
25°C (%)	D924		≤0.20	
90°C (tanδ)		IEC 60247		≤0.05
100°C (%)	D924		≤4.0	
Chemical				
Corrosive Sulfur	D1275	IEC 62697	non-corrosive	non-corrosive
Water Content (mg/kg)	D1533	IEC 60814	≤200	≤200
Acid Number (mg KOH/g)	D974	IEC 62021.3	≤0.06	≤0.06
PCB Content (mg/kg)	D4059		not detectable	free from PCBs
Oxidation Stability (48 hrs, 120°C)		IEC 61125C		
Total Acidity (mg KOH/g)		IEC 62621.3		≤0.6
Viscosity at 40°C (mm²/sec)		ISO 3104		≤ 30% increase over initial
Dissipation Factor at 90°C (tan δ)		IEC 60247		≤ 0.5

NOTE: Specifications should be written referencing only the defined ASTM or IEC industry standard acceptance values and test methods. The listed 'typical' values are average values summarized from a significant number of data points over many years; they are not to be identified as acceptance values.

ASTM D6871 Standard Specification for Natural (Vegetable Oil) Ester Fluids Used in Electrical Apparatus.
IEC 62770: Fluids for electrotechnical applications – Unused natural esters liquids for transformers and similar electrical equipment.

1 Per OPPTS 835.3110
2 Per OECD 203, Method B
3 Per OECD 420
4 Less-Flammable Transformer Fluids, Approval Guide – Electrical Equipment, FM Approvals, FM Global, Norwood, MA, USA
5 EOVK.MH10678, Transformer Fluids, UL Listed and Classified Products, Underwriters Laboratories, Northbrook, IL, USA
EOUV.MH10678, Dielectric Mediums, UL Listed and Classified Products, Underwriters Laboratories, Northbrook, IL, USA;
6 National Electrical Code, NFPA 70, National Fire Protection Association, Quincy, MA, USA
7 Transformers, 5-4, Property Loss Prevention Sheets, FM Global, Norwood, MA, USA

In addition to new distribution and power class transformers, a variety of other equipment, including voltage regulators, sectionalizing switches, transformer rectifiers, and electromagnets use Envirotemp FR3 fluid. The fluid is also used in retrofill applications for transformers and other fluid-filled distribution and power equipment.

ENVIRONMENTAL AND HEALTH

Envirotemp FR3 fluid is specifically formulated to help minimize health and environmental risks. The base oils come from renewable resources - commodity seeds - and are recyclable and reusable.

The US and California Environmental Protection Agencies published Envirotemp FR3 fluid's Environmental Technology Verification Report in 2003. The verification process includes biodegradation and toxicity testing. Results from the aquatic biodegradation test confirm that Envirotemp FR3 fluid's rate of biodegradation is the same as that of the standard reference material. Envirotemp FR3 fluid meets the "ultimately biodegradable" criteria (Figure 1). When tested for acute oral toxicity, Envirotemp FR3 fluid is not toxic.

The Edible Oil Regulatory Reform Act (US Public Law 104-55, 1995) makes Envirotemp FR3 fluid eligible for current and future regulatory relief. The options of alternative spill response procedures, such as bio-based remediation, are now available. The fluid's inherent viscosity and tendency of thin layers to polymerize help prevent migration along the surface and into subsurface soils.

The EPA, Occupational Safety & Health Administration (OSHA), and the Department of Transportation (DOT) do not list Envirotemp FR3 fluid as hazardous. Its Hazardous Material Information System (HMIS) rating is 1 for both health and reactivity. Envirotemp FR3 fluid is not classified as bio-accumulating or mutagenic. It is not listed as a carcinogen by National Toxicology Program (NTP), in International Agency for Research on Cancer (IARC) monographs, or by OSHA Regulation. The products of complete combustion of Envirotemp FR3 fluid are essentially carbon dioxide and water.

TABLE 2
Envirotemp™ FR3™ fluid's Environmental Attributes

Attribute	Results	Method
Aquatic Biodegradation [%]	>99	EPA OPPTS 835.3100
Ready Biodegradation [%]	>99	EPA OPPTS 835.3110
Acute Aquatic Toxicity	Non-toxic	OECD 203
Acute Oral Toxicity	Non-toxic	OECD 420
Biobased Material Content	>95%	USDA Biopreferred Program
Total Life Cycle Carbon Footprint	Carbon Neutral	Department of Commerce NIST BEES V4.0
Overall Environmental Impact	1/4th impact of mineral oil	Department of Commerce NIST BEES V4.0

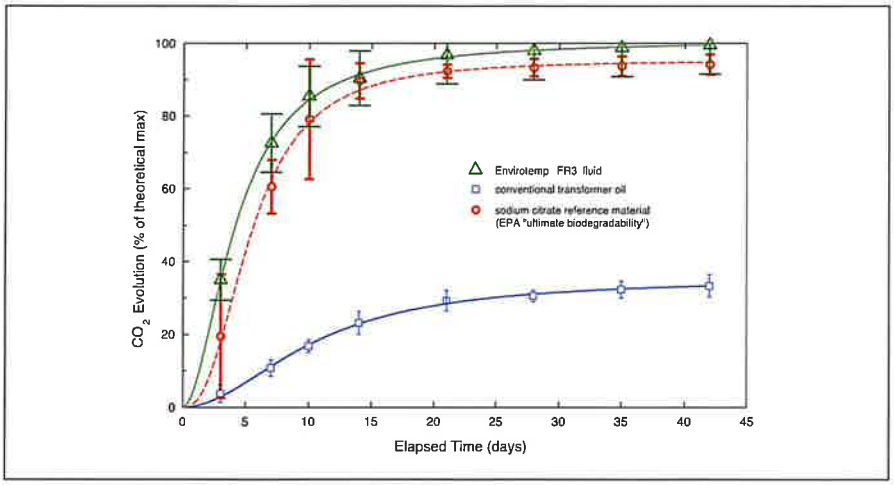


Figure 1.
Aerobic Aquatic Biodegradation Graph EPA Test OPPTS 835.3100

TABLE 3
Greenhouse gases[a] attributed to transformer fluid for its complete life cycle.

	Grams Per Unit[b]		Tons Per 1000 Gallons	
Catagory	Mineral Oil	Envirotemp FR3 Fluid	Mineral Oil	Envirotemp FR3 Fluid
Raw Materials	1,048,184	-381,590	2.306	-0.839
Manufacturing	544,363	160,212	1.198	0.352
Transportation	122,478	71,498	0.269	0.157
Use	154,124	153,450	0.339	0.338
End of Life	30,825	30,690	0.068	0.068
Total	1,899,973	34,260	4.180	0.075

a carbon dioxide equivalents
b In BEES 4.0e, one unit is a 1000 kVA transformer containing 500 gallons of fluid

SUSTAINABILITY

Building for Environmental and Economic Sustainability (BEES) software[8], available from the National Institute of Standards and Technology, uses a life-cycle assessment approach, analyzing raw material acquisition, manufacture, transportation, installation, use, and recycling and waste management, to determine a product's global warming potential.

Table 3 shows the BEES amounts of greenhouse gas generated from raw materials through end of life for mineral oil and Envirotemp FR3 fluid. The cost of mineral oil, in terms of carbon

[8] BEES, Version 4.0e, Building and Fire Research Laboratory, National Institute of Standards and Technology, August 2007, http://www.bfrl.nist.gov/oae/software/bees/

emissions, is expensive. Meanwhile, Envirotemp FR3 fluid is relatively inexpensive, about 8.2 lb/gal less green house gas emitted to produce it. Additionally, the study reports that Envirotemp FR3 fluid's overall environmental performance impact score is 1/4th that reported for mineral oil (and that's without consideration for Envirotemp FR3 fluid's transformer insulation life extending properties). This cumulative score results from adding the impacts of water intake, smog, ozone depletion, indoor air, human health, habitat alteration, global warming, fossil fuel depletion, eutrophication, ecological toxicity, critical air pollutants, and acidification.

Envirotemp FR3 fluid, and transformers filled with Envirotemp FR3 fluid are listed in the US Federal BioPreferred℠ Products Program, making them readily identifiable as BioPreferred to all applicable Federal agencies. Envirotemp FR3 fluid is an excellent option for ISO 14000, Green Build, and other similar environmental programs that promote the use of alternative, environmentally preferable and sustainable materials and procedures.

FIRE SAFETY

Envirotemp FR3 fluid has a fire point of approximately 360°C, well above the minimum of 300°C required for high fire point fluid classifications. Its flash point (approximately 330°C) is higher than the fire point of most other ignition resistant dielectric fluids in use today (Figure 2).

In laboratory and full-scale ignition tests, Envirotemp FR3 fluid has demonstrated greater fire resistance than other dielectric fluid types. Based on large-scale arc ignition testing, FM Global concluded that the probability of a pool fire evolving from Envirotemp Envirotemp FR3 fluid was so low that a heat release rate need not be determined or considered for FM Global approval.

Based on large-scale arc ignition and hot metal ignition tests, FM Global recognizes Envirotemp FR3 fluid as an equivalent safeguard to space separation, fire barriers, and fire suppression systems for most installations.

FM Global recognizes Envirotemp FR3 fluid as a component of Approved transformers per FM Global Standard 3990. When used in transformers

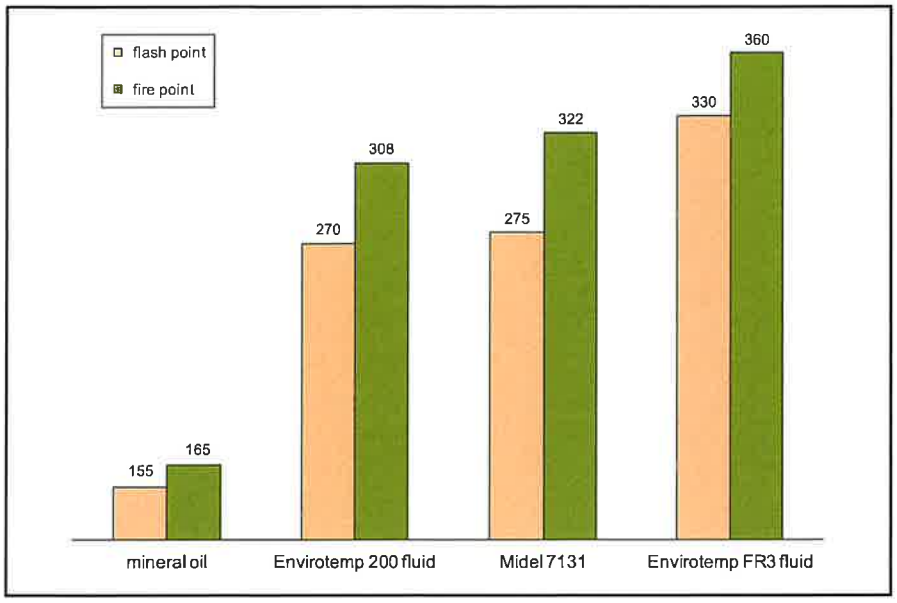


Figure 2.
Flash & Fire Point of Dielectric Fluids (°C).

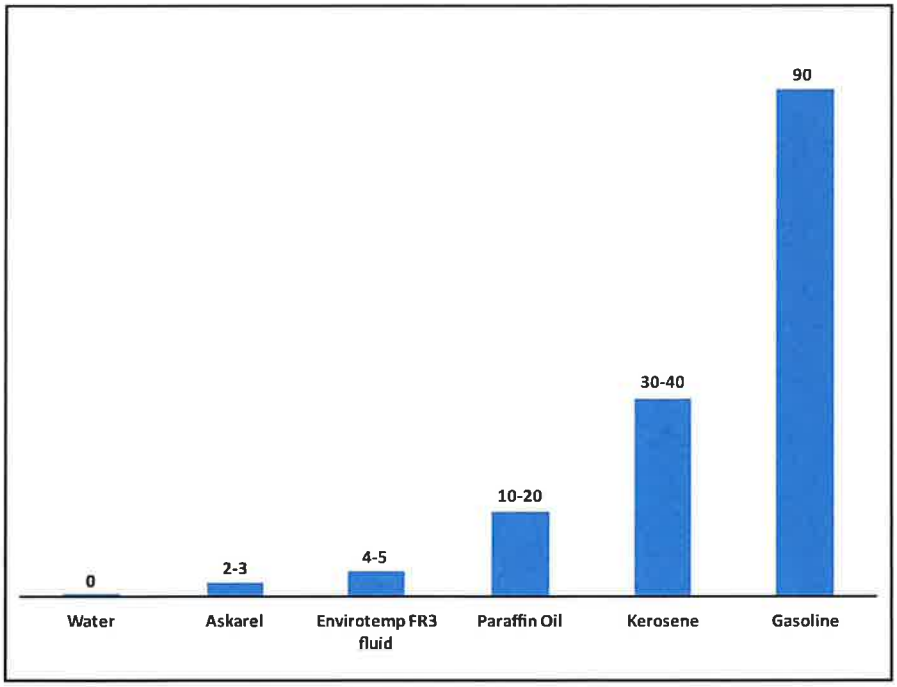


Figure 3.
Fire Hazard Rating UL Standard 340.

containing 10,000 gallons of fluid or less, transformers' separation distance to buildings and other equipment may be up to 1/10th the distance required for mineral oil filled transformers, without fire walls or deluge systems.

OSHA recognizes this FM Global standard as fitting the definition of a Listed and Labeled Product per NEC Section 110-3(b). The standard permits Envirotemp FR3 fluid-filled transformers to be installed indoors, typically without sprinklers or vaults, with a minimum clearance to walls of just 3 feet (0.9M).

UL Standard 340 compares the fire hazard ratings of various fluids. Figure 3 shows the favorable rating assigned to Envirotemp FR3 fluid.

TABLE 4
Transformer Insulating Paper End-of-Life (Hours)

End-of-Life Basis	150°C Mineral Oil	150°C Envirotemp FR3 Fluid	150°C IEEE Basis	170°C Mineral Oil	170°C Envirotemp FR3 Fluid	170°C IEEE Basis
Retained Tensile Strength						
50%	3100	>4000*	1602	240	1300	323
25%	4000	>4000*	3327	490	4000	671
Degree of Polymerization						
200	3200	>4000*	3697	480	3400	746

* Paper did not reach end-of-life over the duration of the test. To be conservative, extrapolation was not employed.

There are no known reports of dielectric pool fires involving Envirotemp FR3 fluid filled transformers.

MEETING THE CODES

Less-Flammable fluids are recognized as a fire safeguard in Section 15 of the National Electrical Safety Code (Accredited Standards Committee C2) for generation and distribution substations. Envirotemp FR3 fluid meets the National Electrical Code Section 450-23 requirements as a listed less-flammable liquid. It is covered by OSHA Article §1910.305, Section 5(v).

Envirotemp FR3 fluid is FM Global Approved and Underwriters Laboratories Classified "Less-Flammable" per NEC Article 450-23, fitting the definition of a Listed Product per NEC. For additional information, request Cargill's NEC Requirement Guidelines 2008 Code Options for the Installation of Listed Less-Flammable Liquid Filled Transformers.

FLUID/PAPER INSULATION SYSTEM

The unique chemical structure of Envirotemp FR3 fluid provides superior insulation system performance compared to other types of dielectric fluids. The thermal properties of Envirotemp FR3 fluid make it a more efficient coolant than higher molecular weight silicone and hydrocarbon dielectric coolants.

Envirotemp FR3 fluid has an exceptional ability to remove water generated by aging paper. This enables the fluid to significantly reduce the aging rate of transformer insulating paper. Per IEEE C57.100, accelerated aging tests show that Thermally Upgraded Paper (TUK) paper insulation aged in Envirotemp FR3 fluid takes 5-8 times longer to reach the same end-of-life points as TUK paper insulation aged in conventional mineral oil.

Table 4 compares the time to reach insulation end-of-life for TUK paper aged in Envirotemp FR3 fluid and conventional transformer oil. The time to insulation end-of-life calculated using the IEEE C57.91 loading guide is included for comparison. Accelerated aging tests show similar thermal aging improvement for non-thermally upgraded Kraft paper.

APPLICATIONS

NOTE: The suitability of each application of Envirotemp FR3 fluid is the responsibility of the user. Contact Cargill Envirotemp FR3 Fluids group for application guidelines.

New Transformers

Distribution and Power class transformers filled with Envirotemp FR3 fluid for indoor, submersible and outdoor applications are available from manufacturers worldwide.

For indoor applications, Envirotemp FR3 fluid-filled transformers provide the proven technical and performance advantages of liquid-filled designs over dry types as well as a lower total life cycle cost when compared to all other transformer types.

Many types of Envirotemp FR3 fluid-filled transformers are in service: pole-mounted, pad-mounted, networks, reactors, small, medium and large substations, transmission substations, and generator step-ups. Envirotemp FR3 fluid-filled transformers are accepted in both industry and government. Contact Cargill Envirotemp FR3 Fluids group for a copy of the Envirotemp FR3 Fluid User's List, Bulletin B110.

Retrofilling Transformers

Envirotemp FR3 fluid is especially suited for upgrading the environmental and fire safety of mineral oil-filled transformers. It is miscible with mineral oil, high molecular weight hydrocarbons and other ester fluids. FR3 fluid is not miscible with silicone and should not be applied in transformers previously containing silicone. FR3 fluid can also be used in PCB (Askarel) replacement initiatives.

Unlike most other fluid types, the residual transformer oil in a properly retrofilled transformer should not reduce the fire point of Envirotemp FR3 fluid below the NEC minimum of 300°C (Figure 4). This is true even after full equilibrium has been achieved between the replacement fluid and the residual mineral oil in the paper.

Additional advantages of retrofilling with Envirotemp FR3 fluid include high dielectric strength, better match of dielectric constant to Kraft paper insulation, excellent lubricity, material compatibility, and a coefficient of expansion similar to conventional transformer oil. Envirotemp FR3 fluid has superior resistance to coking and sludge formation when compared to conventional transformer oil. In addition to passing the Power Factor Valued Oxidation (PFVO) test, Doble Laboratories' Sludge-Free Life tests resulted in no measurable sludge. The fluid also acts as a drying agent for transformer insulation that has become wet from aging, extending the useful life of the transformer insulation system.

Switching Devices

With excellent dielectric strength retention (Figure 5), lubricity, and gassing tendencies, Envirotemp FR3 fluid is an excellent switching medium at normal operating temperatures. Proven applications include new and retrofilled sectionalizing switches and transformers with load break accessories such as Bay-O-Net and current-limiting fusing, on-off and four position switches, and Vacuum Fault Interruption protection devices.

[9] P.J. Hopkinson, L. Dix, "Tapchangers for De-energized Operation in Natural Ester Fluid, Mineral Oil, and Silicone" IEEE/PES Transmission & Distribution Conference & Exposition, July 26-30, 2009, Calgary Canada

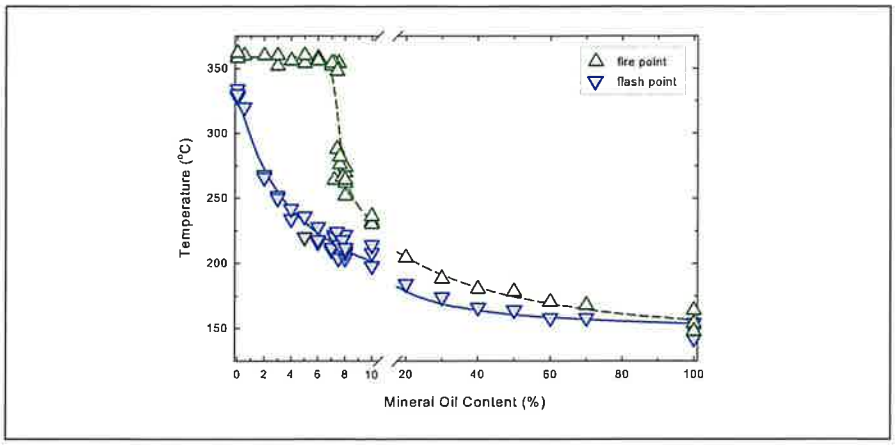


Figure 4.
Envirotemp™ FR3™ fluid Flash & Fire Point Variation with Conventional Transformer Oil Content.

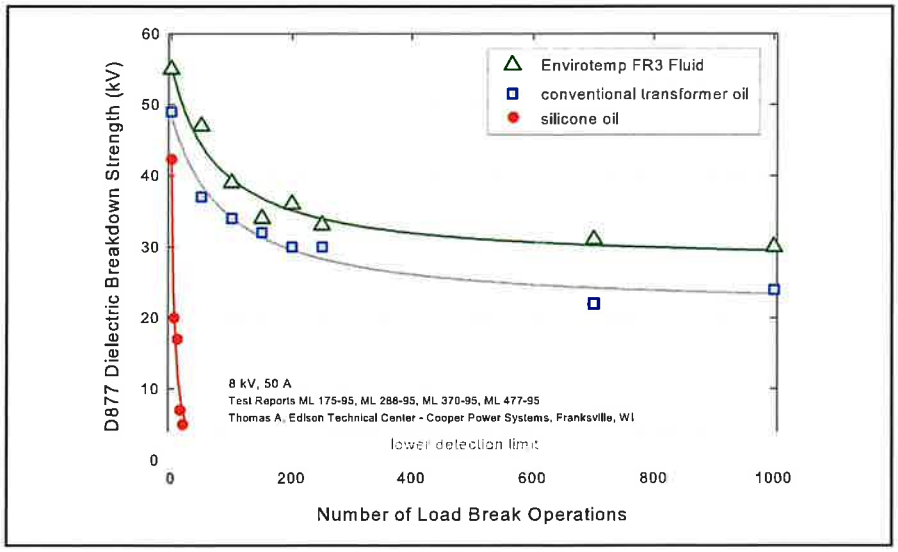


Figure 5.
Fluid loadbreak dielectric strength retention comparison.

Accelerated life tests confirm stationary contacts are most stable in Envirotemp FR3 fluid[9]. In coking tests, Envirotemp FR3 fluid produced less than 1/20th of the deposits that were produced in conventional mineral oil.

Due to the low temperature viscosity difference of Envirotemp FR3 fluid compared to conventional transformer oil, the equipment manufacturer should verify applications at low ambient temperatures.

Other Applications

The inherent safety and performance properties of Envirotemp FR3 fluid have led to its application in electrical equipment other than transformers, including industrial electromagnets, superconducting motors, klystron modulators, transformer/rectifier sets, and heat transfer applications. Envirotemp FR3 fluid has excellent lubricity, an important characteristic for application in equipment with moving parts. High voltage bushing applications also appear promising due to the fluid's excellent ability to minimize insulating paper degradation and its low gassing tendency value of approximately -79 µl/min.

STORAGE AND HANDLING

Similar meticulous procedures for storing and handling conventional transformer mineral oil should be followed with Envirotemp FR3 fluid. To help maintain the extremely low percent moisture saturation at time of fluid manufacture, exposure time to air should be minimized. Drum and tote storage should be indoors or outdoors protected from the elements, including sunlight. Refer to the Cargill Envirotemp FR3 Fluid Storage and Handling Guide S10.

Note: To maintain the optimal fluid properties for its intended use as an electrical insulating fluid, exposure to oxygen, moisture, and other contaminants must be minimized. Except for short storage periods, material that has been immersed in Envirotemp FR3 fluid should not be exposed to air. Thin films of natural esters tend to polymerize much faster than conventional transformer oil. For equipment drained of Envirotemp FR3 fluid, it is recommended that the equipment be placed in an inert gas environment, be re-immersed in fluid, or rinsed with mineral oil. Where the transformer power factor is a concern, hot air drying is an unacceptable process for assemblies already impregnated with a natural ester fluid. For impregnated assemblies that require additional drying, a method of drying that does not expose the impregnated insulation to air is required to avoid excessive oxidation of the dielectric fluid.

FLUID MAINTENANCE

Periodic preventive maintenance tests for Envirotemp FR3 fluid-filled equipment should follow the same schedule used for transformers filled with conventional transformer oil. Key tests on fluid samples include:

1. Dielectric Strength: The IEEE C57.147 minimum acceptable ASTM D1816, 2mm gap limits for continued use of service-aged Envirotemp FR3 fluid are 40 kV (≤ 69 kV), 47 kV (69 ≤ kV < 230), and 50 kV (≥ 230 kV).
2. Flash Point and Fire Point. Small amounts of mineral oil will not significantly reduce the fire point of Envirotemp FR3 fluid. Contamination above 7% may lower the fire point below 300°C. If contamination is suspected, the flash and fire points should be measured.

Figure 6.
Prior to shipment, Envirotemp™ FR3™ fluid undergoes extensive quality assurance testing. The facility where Envirotemp FR3 fluid is produced is ISO 9001 Certified.

3. Dissolved gas analysis of Envirotemp FR3 fluid is particularly useful for high value equipment or equipment servicing critical loads.
4. Color and appearance, dissipation factor, acid number, resistivity, viscosity, and interfacial tension are indicators of possible fluid contamination or unusual degradation.

For fluid that cannot be reconditioned, disposal options include selling to lube oil recyclers, rendering companies, or providers of fuel for industrial boilers and furnaces. Used fluid uncontaminated by controlled hazardous materials does not fall under the jurisdiction of the Federal Used Oil Regulation (CFR Title 40 Part 279).

FUNCTIONAL SPECIFICATION FOR NEW ENVIROTEMP FR3 NATURAL ESTER LESS-FLAMMABLE TRANSFORMER DIELECTRIC COOLANT

1.0 Scope

1.1. This specification describes a non-toxic (in acute aquatic[10], and oral toxicity[11] tests), biodegradable[12], fire resistant, bio-based[13] natural ester dielectric fluid. It is intended for use in electrical equipment as an environmentally preferred, less-flammable insulating and cooling medium.

2.0 Requirements

2.1 Fluid Manufacturer

Fluid manufacturer shall have a minimum of ten (10) years experience producing and testing dielectric coolants. Manufacturer upon request shall provide AC withstand and impulse withstand for both gap and creep from 3mm to 150mm.

2.2 Dielectric Coolant

The dielectric coolant shall be a biobased biodegradable, be FM Global Approved, UL® Classified as a less-flammable fluid. It shall meet the property limits listed below. The base fluid shall be 100% derived from seed oils.

2.3 Acceptable values for receipt of shipments of new Enviotemp FR3 fluid are shown in Table 1

2.4 Environmental and Health Third Party Validations

The fluid shall have a US EPA Environmental Technology Verification (ETV) Statement published. The fluid shall meet the test limits shown in Table 2

2.5 Packaging

The electrical insulating fluid shall be furnished in sealed vessels suitable for the purpose, including 5-gallon containers, 55-gallon drums, 330-gallon totes, or in bulk. Each vessel shall have tampering indicating devices.

3.0 Recommended Customer Receiving Quality Control

3.1 Inspection

Each lot received shall be visibly inspected for container integrity. Verify that tamper proof seals are intact and no leaks are visible.

3.2 Receiving Tests

Samples shall be taken from containers per ASTM D 923 Section 2.2, as follows:

Lot Size (gallons)	Number of Containers Sampled
600 or less	1
601 - 3000	2-6
3001 or more	6 minimum (10% of quantity of containers recommended)

When material will be combined for production, samples may be mixed together in equal proportions to create a composite sample for testing. Minimum tests required are dielectric strength and visual inspection. Dissipation factor test is highly recommended, although not essential.

4.0 Important information

4.1 Storage

Avoid storing drums and totes outdoors. Extreme temperature variations can stress the integrity of container protective seals. Exposure of totes to sunlight can cause fluid discoloration

4.2 Intended Use

The use of electrical insulating and cooling fluid is generally dictated by the engineering design of the electrical apparatus. The electrical insulating fluid covered by this specification is intended for use as an insulating and cooling medium in electrical equipment.

[10] Per OECD 203, Method B
[11] Per OECD 420
[12] Per US EPA OPPTS 835.3100 and US EPA OPPTS 835.8110 (ii)
[13] Per USDA Biopreferred minimum biobased content for Fluid-Filled Transformers - Vegetable Oil-Based

4.3 Fluid Transfer

When transferring electrical insulating fluid from its original container, take care to prevent contamination with moisture, dust, and foreign matter. These impurities can cause deterioration of the dielectric strength and electrical performance.

4.4 Partial Containers

Provide nitrogen blanket for partially filled containers, and properly seal to prevent contamination.

Cargill Industrial Specialties
P.O. Box 5700, MS 66
Minneapolis, MN 55440-5700
1-800-842-3631
envirotempfluids.com

Efficient

- High power density
- Max. efficiency of 98.8%
- Lower transportation costs (up to 4 inverters in a standard shipping container)

Robust

- Proven OptiCool™ technology for intelligent, effective cooling
- Can be installed worldwide outdoors in any ambient condition

Flexible

- Conforms to all relevant grid requirements worldwide
- Four quadrant operation for full reactive power support
- Stand-alone device or a medium-voltage block solution

Versatile

- Integrated battery communication
- Customized monitoring and control of inverters
- Grid management functions for dynamic grid support
- Integrated voltage supply for internal consumption and external loads

SUNNY CENTRAL STORAGE 3450 UP-US / 3600 UP-US / 3800 UP-US / 3950 UP-US

Battery inverters for large scale storage systems

With an output of up to 3960 kVA and system voltages up to 1500 V DC, the SMA Sunny Central Storage allows for more efficient and flexible system design for battery power plants. A separate voltage supply and additional space are available for the installation of customer equipment. The intelligent cooling system OptiCool ensures smooth operation even in extreme ambient temperature.

SUNNY CENTRAL STORAGE 3450 UP-US / 3600 UP-US

Technical Data	SCS 3450 UP-US	SCS 3600 UP-US
Battery side (DC)		
Operating DC voltage range V_{DC}	880 V to 1500 V	921 V to 1500 V
Max. DC current $I_{DC, max}$	4750 A	4750 A
Max. interruption current capabillity[12]	6400 A	6400 A
Max. interruption short circuit current capability[14]	150 kA	
Single DC busbar 26 connections per pole / split DC busbar 6 / 5 / 6 connections per pole	● / ○	
DC connection	with terminal lug	
Grid side (AC)		
Nominal AC apparent power at 1200 Vdc and cos φ =1.0 and 25°C	3450 kW	3620 kW
AC apparent power at 1200 Vdc (at 25°C / at 40°C / at 50°C)[3] [13]	3450 kVA / 3140 kVA / 2930 kVA	3620 kVA / 3290 kVA / 3075 kVA
Max. AC current $I_{AC, max}$ (at 25°C / at 40°C / at 50°C)	3320 A / 3020 A / 2820 A	
Max. total harmonic distortion	< 3% at nominal power	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range[1] [8]	600 V / 480 V to 720 V	630 V / 504 V to 756 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz	
Min. short-circuit ratio at the AC terminals[9]	> 2	
Power factor at rated power / displacement power factor adjustable[8] [10]	1 / 0.8 overexcited to 0.8 underexcited	
AC connection	with busbar system (three busbars, one per line conductor)	
Efficiency		
Max. efficiency[2]	98.8%	98.8%
Protective Devices		
Input-side disconnection point	DC load break switch	
Output-side disconnection point	AC circuit breaker	
DC overvoltage protection	Surge arrester, type I	
AC overvoltage protection (optional)	Surge arrester, class I	
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III	
Insulation monitoring	●	
Degree of protection: electronics / air duct / connection area (as per UL 50E)	UL Type 3R / Type 1 / Type 1	
General Data		
Dimensions (W / H / D)	2815 / 2318 / 1588 mm (110.8 / 91.3 / 62.5 inch)	
Weight	< 3700 kg / < 8200 lb	
Self-consumption (max.[4] / partial load[5] / average[6])	< 8100 W / < 1800 W / < 2000 W	
Self-consumption (standby)	< 370 W	
Auxiliary power supply: integrated 8.4 kVA transformer / external	● / ○	
Operating temperature range[8]	−25°C to 60°C / −13°F to 140°F	
Noise emission[7]	65.0 dB(A)	
Temperature range (standby)	−40°C to 60°C / −40°F to 140°F	
Temperature range (storage)	−40°C to 70°C / −40°F to 158°F	
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month/year) / 0% to 95%	
Maximum operating altitude above MSL[8] 1000 m / 2000 m[11]	● / ○	● / ○
Fresh air consumption	6500 m³/h	
Features		
Grid forming / black start ready without grid forming	○ / ○	
DC connection	Terminal lug on each input (without fuse)	
AC connection	With busbar system (three busbars, one per line conductor)	
Communication	Ethernet, Modbus Master, Modbus Slave	
Communication with SMA string monitor (transmission medium)	Modbus TCP / Ethernet (FO MM, Cat-5)	
Enclosure / roof color	RAL 9016 / RAL 7004	
Supply transformer for external loads	○ (2.5 kVA)	
Certifications and approvals	UL 62109-1, UL 1741 Chapter 13 CRD 61, UL 1741 SA, IEEE 1547, UL 1998, CAN/CSA C22.2 107.1-1	
EMC standards	IEC / EN 61000-6-4, IEC / EN 61000-6-2, EN 55022, CISPR 22:2008 modified class A, FCC Part 15 Class A	
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001	

● Standard features ○ Optional – not available

Type designation	SCS 3450 UP-US	SCS 3600 UP-US

1) At nominal AC voltage, nominal AC power decreases in the same proportion
2) Efficiency measured without internal power supply
3) AC apparent power at higher dc voltages on request
4) Self-consumption at rated operation
5) Self-consumption at < 75% Pn at 25°C
6) Self-consumption averaged out from 5% to 100% Pn at 25°C
7) Sound pressure level at a distance of 10 m
8) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.
9) A short-circuit ratio of < 2 requires a special approval from SMA
10) Depending on the DC voltage / expanded reactive power range (<PF 0.8 - 0.8 upon request), a further apparent derating is possible if the PF is < 0.9 underexcited
11) Earlier temperature-dependent de-rating and reduction of DC open-circuit voltage
12) Battery short circuit disconnection has to be done on the battery side
13) Depending on the ratio of reactive power (cos φ), additional power derating may occur
14) Split DC Bus option must be in combination with pre-fuses of the type SQB-DC154 aR from SIBA GmbH

SUNNY CENTRAL STORAGE 3800 UP-US / 3950 UP-US

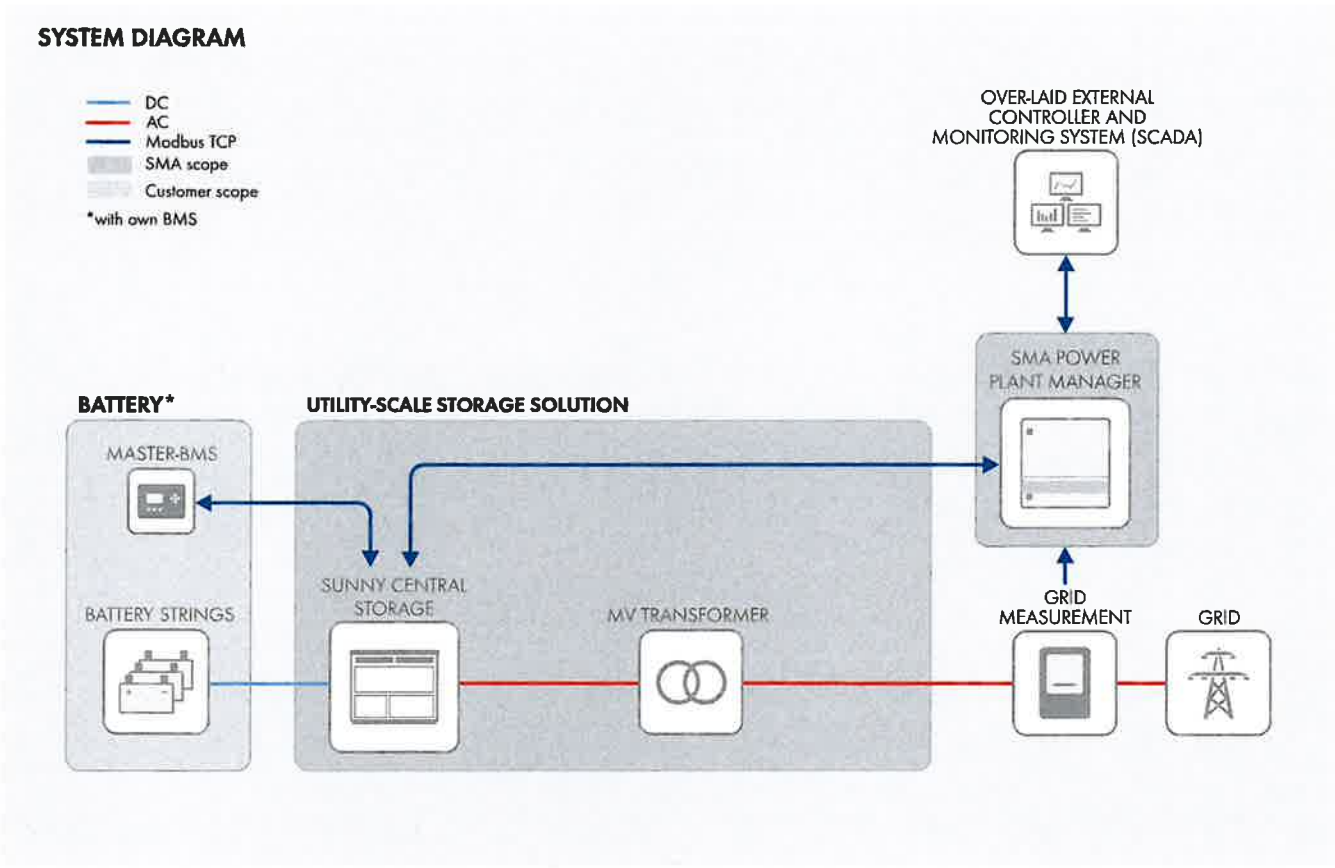
Technical Data	SCS 3800 UP-US	SCS 3950 UP-US
Battery side (DC)		
Operating DC voltage range V_{DC}	962 V to 1500 V	1003 V to 1500 V
Max. DC current $I_{DC, max}$	4750 A	4750 A
Max. interruption current capability[12]	6400 A	6400 A
Max. interruption short circuit current capability[14]	150 kA	
Single DC busbar 26 connections per pole / split DC busbar 6 / 5 / 6 connections per pole	● / ○	
DC connection	with terminal lug	
Grid side (AC)		
Nominal AC apparent power at 1200 Vdc and cos φ =1.0 and 25°C	3800 kW	3960 kW
AC apparent power at 1200 Vdc (at 25°C / at 40°C / at 50°C)[3] [13]	3800 kVA / 3455 kVA / 3230 kVA	3960 kVA / 3610 kVA / 3365 kVA
Max. AC current $I_{AC, max}$ (at 25°C / at 40°C / at 50°C)	3320 A / 3020 A / 2820 A	
Max. total harmonic distortion	< 3% at nominal power	< 3% at nominal power
Nominal AC voltage / nominal AC voltage range[1] [8]	660 V / 528 V to 759 V	690 V / 552 V to 759 V
AC power frequency / range	50 Hz / 47 Hz to 53 Hz 60 Hz / 57 Hz to 63 Hz	
Min. short-circuit ratio at the AC terminals[9]	> 2	
Power factor at rated power / displacement power factor adjustable[8] [10]	1 / 0.8 overexcited to 0.8 underexcited	
AC connection	with busbar system (three busbars, one per line conductor)	
Efficiency		
Max. efficiency[2]	98.8%	98.8%
Protective Devices		
Input-side disconnection point	DC load break switch	
Output-side disconnection point	AC circuit breaker	
DC overvoltage protection	Surge arrester, type I	
AC overvoltage protection (optional)	Surge arrester, class I	
Lightning protection (according to IEC 62305-1)	Lightning Protection Level III	
Insulation monitoring	●	
Degree of protection: electronics / air duct / connection area (as per UL 50E)	UL Type 3R / Type 1 / Type 1	
General Data		
Dimensions (W / H / D)	2815 / 2318 / 1588 mm (110.8 / 91.3 / 62.5 inch)	
Weight	< 3700 kg / < 8200 lb	
Self-consumption (max.[4] / partial load[5] / average[6])	< 8100 W / < 1800 W / < 2000 W	
Self-consumption (standby)	< 370 W	
Auxiliary power supply: integrated 8.4 kVA transformer / external	● / ○	
Operating temperature range[8]	−25°C to 60°C / −13°F to 140°F	
Noise emission[7]	65.0 dB(A)	
Temperature range (standby)	−40°C to 60°C / −40°F to 140°F	
Temperature range (storage)	−40°C to 70°C / −40°F to 158°F	
Max. permissible value for relative humidity (condensing / non-condensing)	95% to 100% (2 month/year) / 0% to 95%	
Maximum operating altitude above MSL[8] 1000 m / 2000 m[11]	● / ○	● / ○
Fresh air consumption	6500 m³/h	
Features		
Grid forming / black start ready without grid forming	○ / ○	
DC connection	Terminal lug on each input (without fuse)	
AC connection	With busbar system (three busbars, one per line conductor)	
Communication	Ethernet, Modbus Master, Modbus Slave	
Communication with SMA string monitor (transmission medium)	Modbus TCP / Ethernet (FO MM, Cat-5)	
Enclosure / roof color	RAL 9016 / RAL 7004	
Supply transformer for external loads	○ (2.5 kVA)	
Certifications and approvals	UL 62109-1, UL 1741 Chapter 13 CRD 61, UL 1741 SA, IEEE 1547, UL 1998, CAN/CSA C22.2 107.1-1	
EMC standards	IEC / EN 61000-6-4, IEC / EN 61000-6-2, EN 55022, CISPR 22:2008 modified class A, FCC Part 15 Class A	
Quality standards and directives complied with	VDI/VDE 2862 page 2, DIN EN ISO 9001	

● Standard features ○ Optional – not available

Type designation	SCS 3800 UP-US	SCS 3950 UP-US

1) At nominal AC voltage, nominal AC power decreases in the same proportion
2) Efficiency measured without internal power supply
3) AC apparent power at higher dc voltages on request
4) Self-consumption at rated operation
5) Self-consumption at < 75% Pn at 25°C
6) Self-consumption averaged out from 5% to 100% Pn at 25°C
7) Sound pressure level at a distance of 10 m
8) Values apply only to inverters. Permissible values for SMA MV solutions from SMA can be found in the corresponding data sheets.
9) A short-circuit ratio of < 2 requires a special approval from SMA
10) Depending on the DC voltage / expanded reactive power range (<PF 0.8 - 0.8 upon request), a further apparent derating is possible if the PF is < 0.9 underexcited
11) Earlier temperature-dependent de-rating and reduction of DC open-circuit voltage
12) Battery short circuit disconnection has to be done on the battery side
13) Depending on the ratio of reactive power (cos φ), additional power derating may occur
14) Split DC Bus option must be in combination with pre-fuses of the type SQB-DC154 aR from SIBA GmbH

SYSTEM DIAGRAM



Grid-connected functions

- Setpoints for active and reactive power
- Static grid support Q(U), P(f)
- Dynamic grid support (FRT)
- Active islanding detection (AID)
- High compatibility with different battery types

Compatible with energy management system functionalities

- External static grid supporting functions
- Ramp-rate control of PV power
- Peak shaving
- Energy shifting
- Genset optimization control
- Reducing necessary spinning reserve of gensets
- Battery start-up and stop sequence
- Operates the battery within optimal operation window
- Grid forming
- Black start

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www.SMA-America.com

SMA America, LLC

∞ BLOCK

HiTHIUM

ESS Container 3.44 MWh

Liquid-cooled battery storage system

Liquid-cooled battery storage system based on HiTHIUM prismatic LFP ESS Cells 280 Ah with high cyclic lifetime.

Improved safety characteristics and specially optimised for the highest requirements on safety, reliability and performance. Suitable e.g. for industrial, utility, and grid serving applications.

- Product certifications:
  IEC 62619, IEC 62477, IEC 63056, IEC 61000, UL 1973, UL 9540A, NFPA 855, UN 38.3
- Company certifications:
  ISO 9001, ISO 14001, ISO 45001
- Environmental Compliance:
  ROHS, REACH

High safety

- High thermal stability thanks to liquid cooling
- Multi-stage, active fire protection system
- Use of highly safe prismatic HiTHIUM LFP cells
- Multi-stage, active fire protection system, compliance to NFPA855

Low LCOS (Levelised Cost of Storage)

- Excellent thermal management improves energy throughput by ensuring optimal operating temperature
- High energy density
- Highly integrated: including thermal management system, fire protection system, BMS, etc.

ESS **Container**
3.44 MWh

Liquid-cooled battery storage system based on prismatic LFP cells with high cyclic lifetime

GENERAL	
Battery Type	HiTHIUM LFP2801P48S
No. of Battery Modules	80 (10 x 8)
Configuration	10P384S
Cooling Method	Liquid Cooling
BMS Communication	CAN, RS485, Ethernet
Gravimetric	> 101 Wh/kg
Volumetric	> 80 Wh/l
Application Altitude	≤ 3,000 m

ELECTRICAL	
Nominal Voltage Container	1,228.8 V
Operating Voltage Container	1,036.8 ... 1,382.4 V
Nominal Energy Container	3,440.64 kWh [1,2]
Nominal SOC at delivery	27 % [2]
Nominal Charge/Discharge Rate	0.5 P / 0.5 P
Round Trip Efficiency	> 94 %

[1] *0.5 P / 0.5 P*
[2] *25°C +/- 2.0*
[3] *ambient temperature*

MECHANICAL	
Dimensions (L x W x H)	6,058 x 2,438 x 2,896 mm
Weight Container (20 ft.)	< 34,000 kg
Protection Level	IP 54

TEMPERATURE RANGE	
Operating	-30 °C ... 50 °C [3]
Storing (recommended)	-20 °C ... 35 °C [3]

PRODUCT CERTIFICATIONS	
Certificates and Reports	IEC 62619, IEC 62477, IEC 63056, IEC 61000, UL 1973, UL 9540A, NFPA 855, UN 38.3

ENVIRONMENTAL	
Compliance	ROHS, REACH
	Cobalt free

COMPANY CERTIFICATIONS
ISO 9001, ISO 14001, ISO 45001

HiTHIUM Energy Storage Technology USA Inc.
Address: 4046 Clipper Ct, Fremont, CA 94538, United States
Email: hithium@hithium.com

Xiamen HiTHIUM Energy Storage Technology Co., Ltd.
Address: HiTHIUM Industrial Park, Tongxiang High-Tech Zone, Xiamen, Fujian, China | Email: hithium@hithium.com

LinkedIn Website

HITHIUM

HiTHIUM ENERGY STORAGE

FOR YOUR ENERGY SAFETY

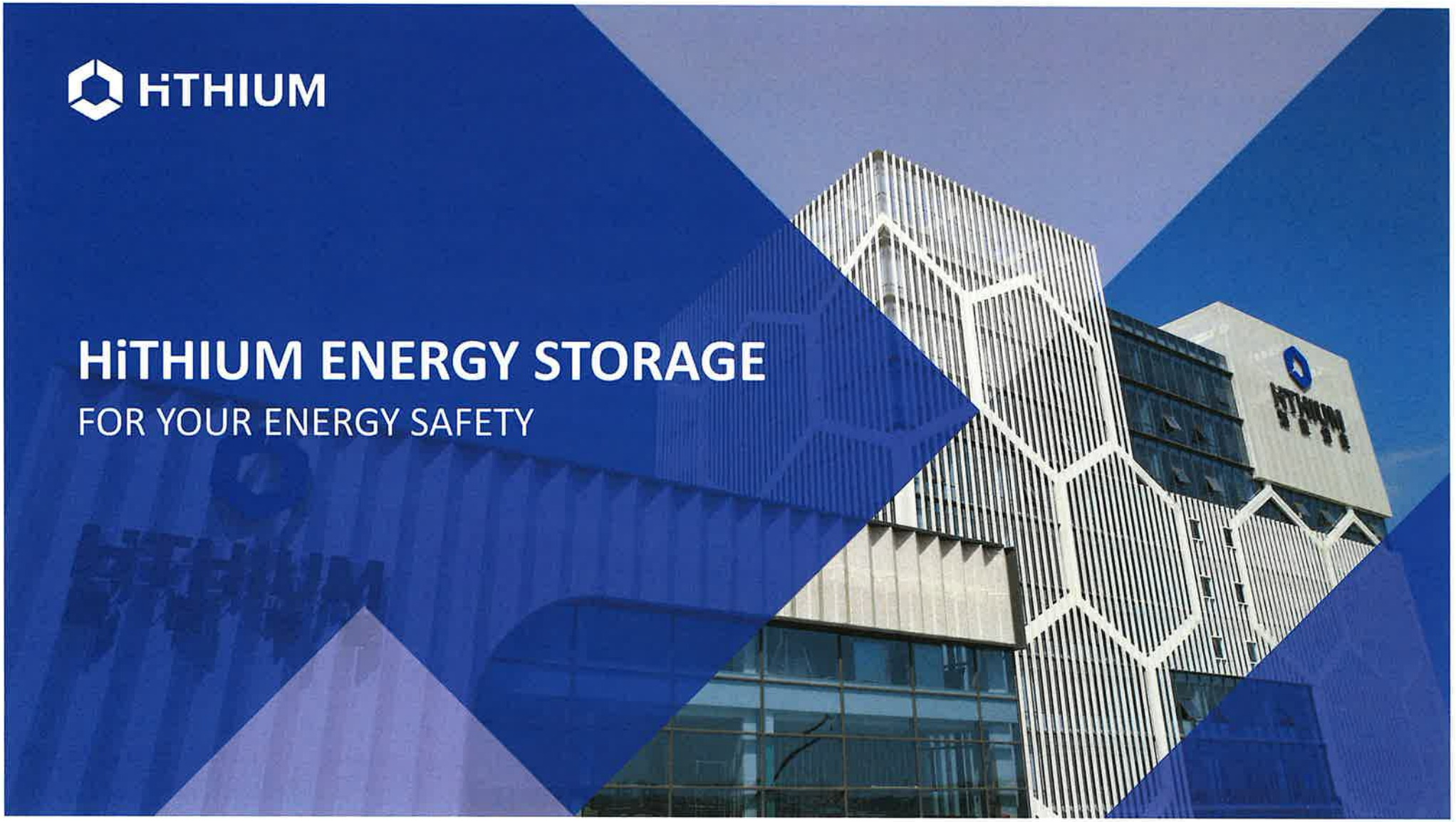


TABLE OF CONTENTS

WHO IS HITHIUM?

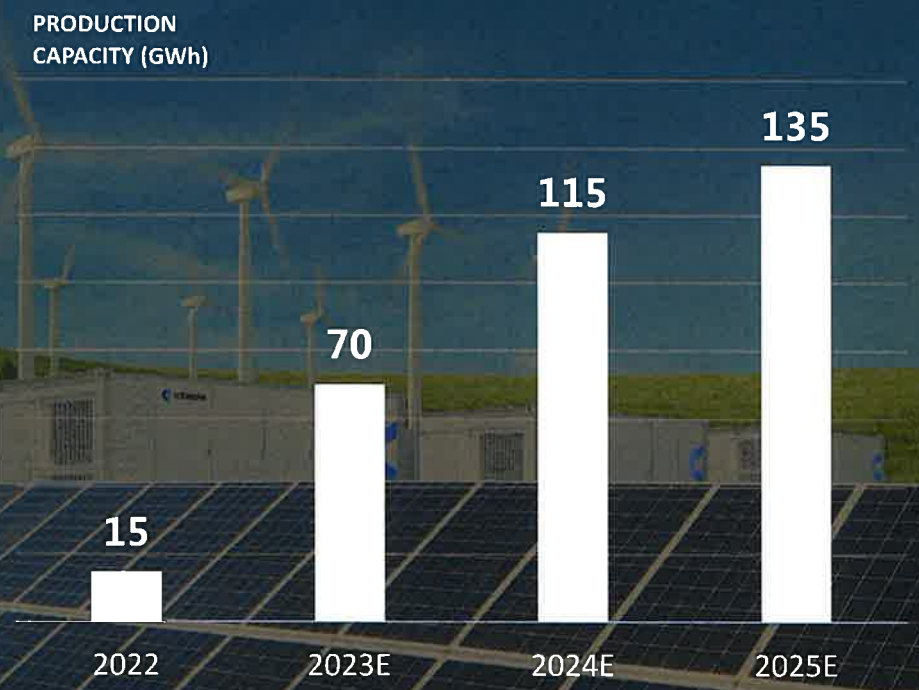
EXPERT IN ENERGY STORAGE BATTERY

2019
Founded

7200+
Global Employees

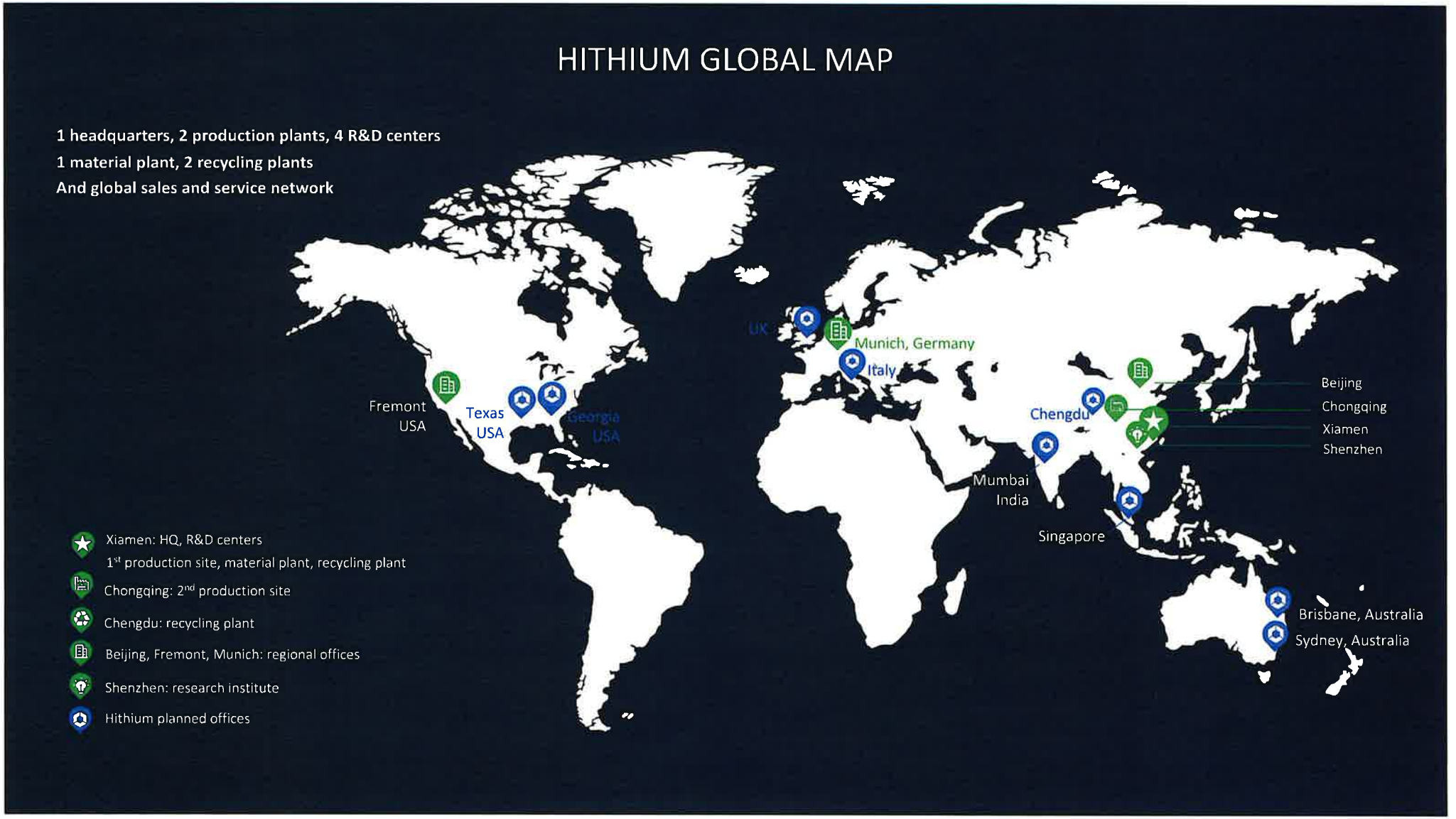
$ 4.71 billion
Total Investment

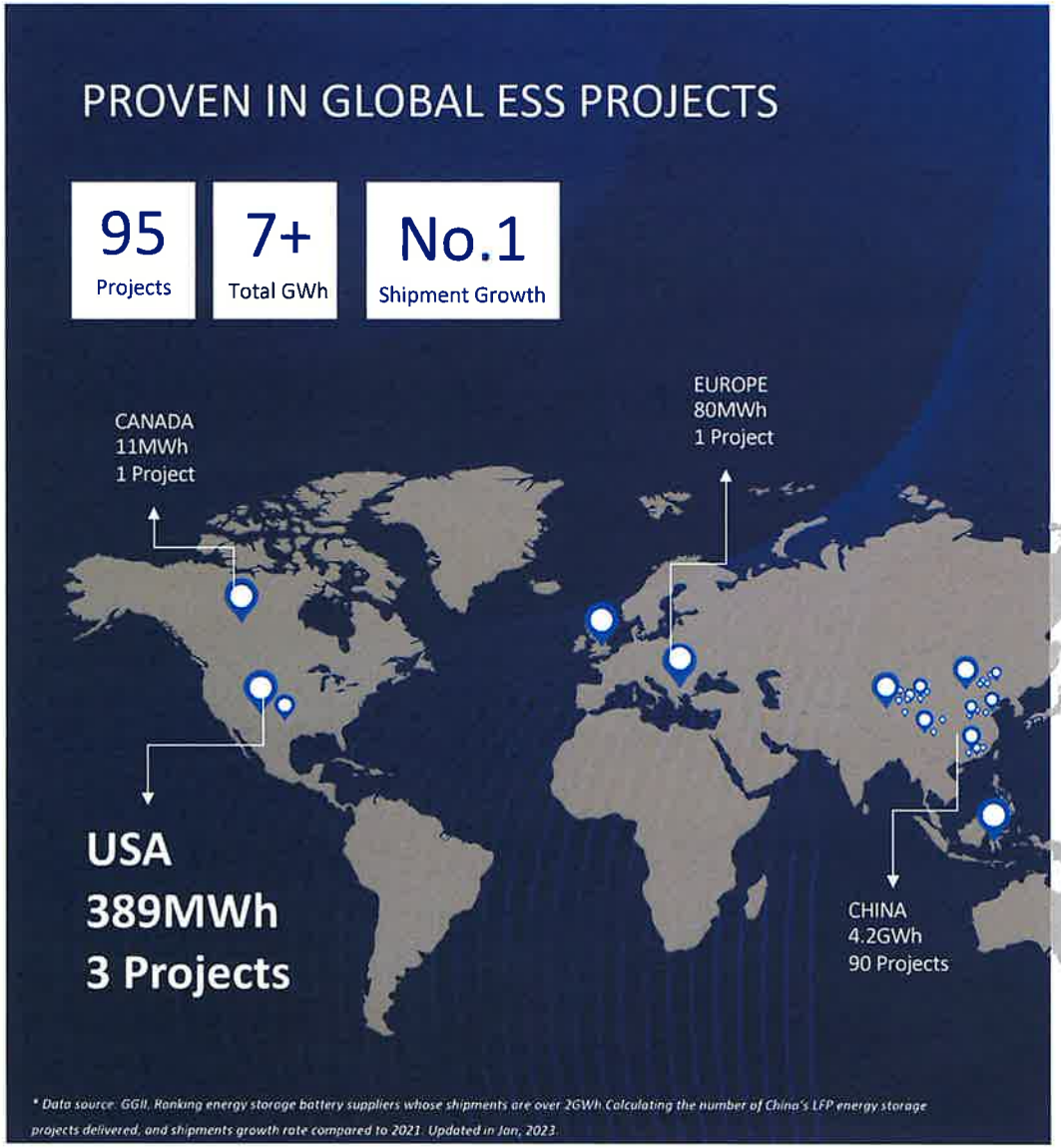
135GWh
Production Capacity by 2025



HITHIUM GLOBAL MAP

1 headquarters, 2 production plants, 4 R&D centers
1 material plant, 2 recycling plants
And global sales and service network





risen|SYL SUNGROW CanadianSolar

sundaya CELLTON POWER TrinaStorage

CHINA HUANENG CHINA SOUTHERN POWER GRID CHN ENERGY NR XJ

CEEC ENERGY CHINA CGGC CPID CTG SDEE

DEC DONGFANG ELECTRIC POWERCHINA CNPC TBEA

CLOU MINGYANG GROUP GOLDWIND CHINT

CAPITAL STRUCTURE

HTHIUM

Core Team

HTHIUM

Financial Institutions

中国农业银行 AGRICULTURAL BANK OF CHINA

招商银行 CHINA MERCHANTS BANK

matrix PARTNERS CHINA

FengHe FUND MANAGEMENT

day1

Upstream

BTR

盛新锂能 CHENGXIN LITHIUM

中国宝安集团

Downstream

MAXWELL

GOODWE

GOLDWIND

OVERSEA UNIT—US TEAM

HTHIUM

Leadership

Sales Team

- Marketing research
- Growing business
- Handling sales issues
- Building customer relationship

Project Management

- Leading a team through the project life cycle by planning, budgeting, scheduling and tracking a project plan

Technical Solution

- Taking lead technical discussion
- Making technical proposal/solution
- Making the technical agreement template
- Making compilation of bidding documents
- Local field technical service
- New product, certificate, process standard output

After-Sales

- Developing after-sales service standards and strategies
- Building after-sales service systems and processes
- Dealing with after-sales problems
- Building relationships and improving the company's after-sales service image

WHY HiTHIUM?

INTELLIGENT MANUFACTURING

HTHIUM

46 processes

data traceability
from material feeding
to delivery

97

special characteristics
of products-CCSC

600+

process control points
with IATF16949 QMS

7 modules

data collection, quality,
production, equipment,
planning, storage, process

70+

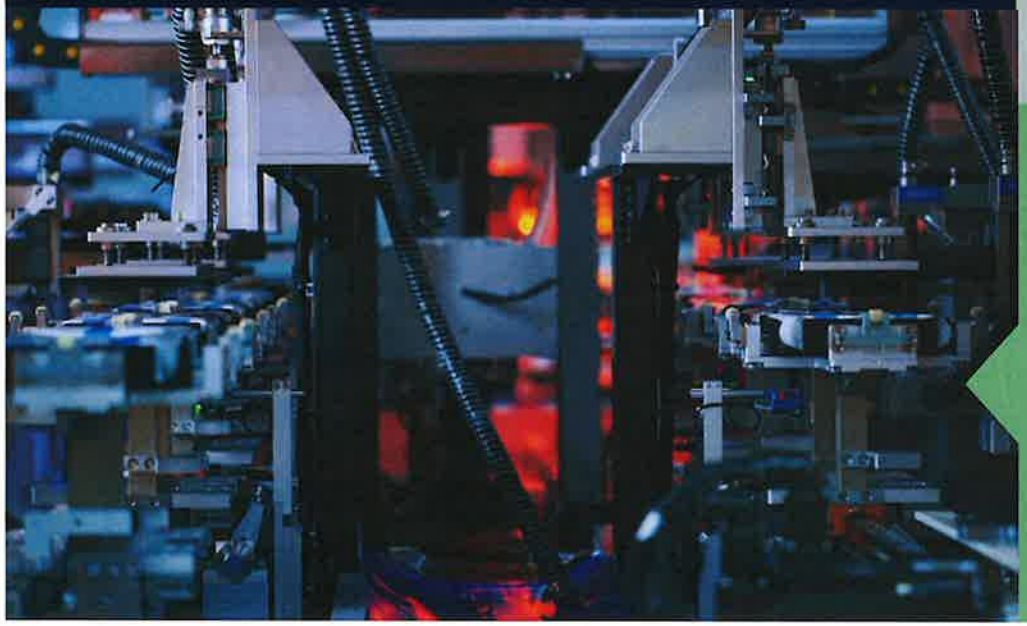
online management reports on
quality, production, equipment,
process...

3000+

process control points
are on-line
real-time monitored

Maximizing capacity

135GWh in 2025



Minimizing LCOE

Through game-changing innovations

CORE TECHNOLOGY IS THE PERMANENT POWER

4

R&D
Research Institute

6%+

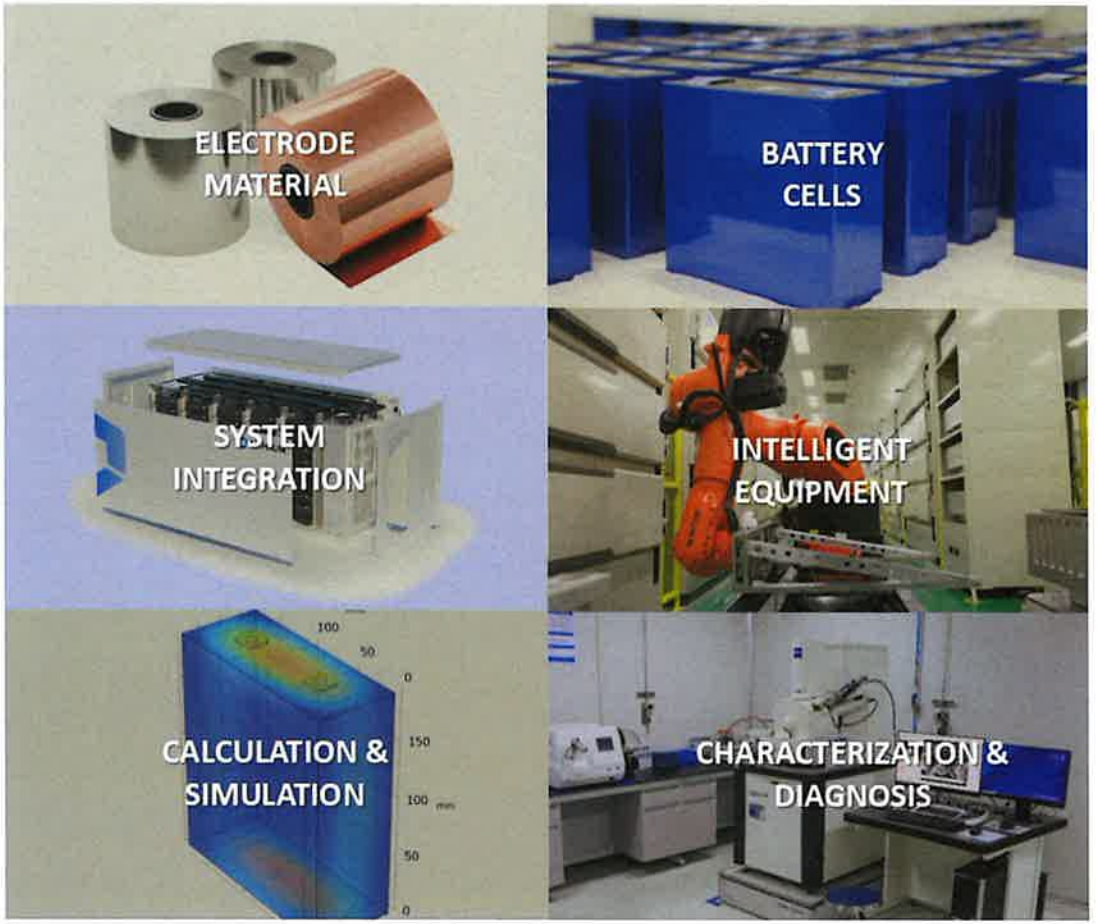
Revenue Investment
In R&D

30%+

Proportion of Technical R&D Personnel

2330+

Cumulative Patent Applications



SAFETY IS OUR PRIORITY

HiTHIUM

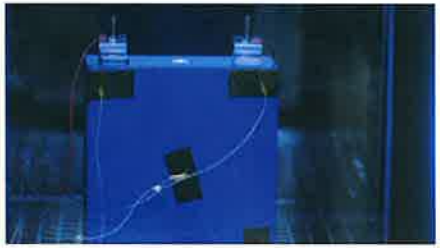
WORLD-CLASS
TESTING CENTER LABORATORY

UL 1973

UL 9540A

MATERIAL VERIFICATION

PERFORMANCE TEST



SAFETY AND RELIABILITY TEST

NAIL PENETRATION TEST

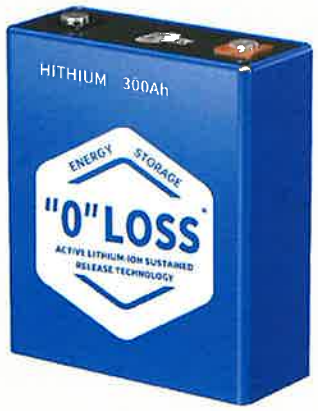
CRUSH TEST


PRODUCTS & SOLUTIONS & ROADMAP


DESIGNED PHILOSOPHY
Safe
Lower LCOS
Long Lasting
Energy Efficient
280Ah
HITHIUM
HITHIUM 300Ah
"0" LOSS
280Ah
HITHIUM
50Ah
HITHIUM

PRODUCT OVERVIEW

300 Ah Prismatic Cell



- *** "0" loss in the initial 1000cls** (*Capacity/Energy fading ≤2%)
- **Cycle life 12000cls** (25℃, 100%DOD, 0.5P @70%SOH)
  - Active lithium-ion sustained release technology
  - Anode modification technology

Operating voltage	2.5 - 3.65 V (T＞0℃) 2.0 - 3.65 V (T ≤ 0℃)
Charge & discharge rate	0.5P
Max charge & discharge rate	1P/1P
Energy density	≥170 Wh/kg
Operating temperature	-30 ~ 60 ℃
Dimension (W*H*D)	174.7*207.11*71.65mmm
Weight	5.62 ± 0.2 kg

* UN38.3 GB/T-36276 RoHS Reach IEC62619 UL 9540A UL 1973

**GB/T-36276, UL 9540A certification ongoing*

** The above pictures and parameters are for reference only, and the specific specifications of mass production products shall prevail.*

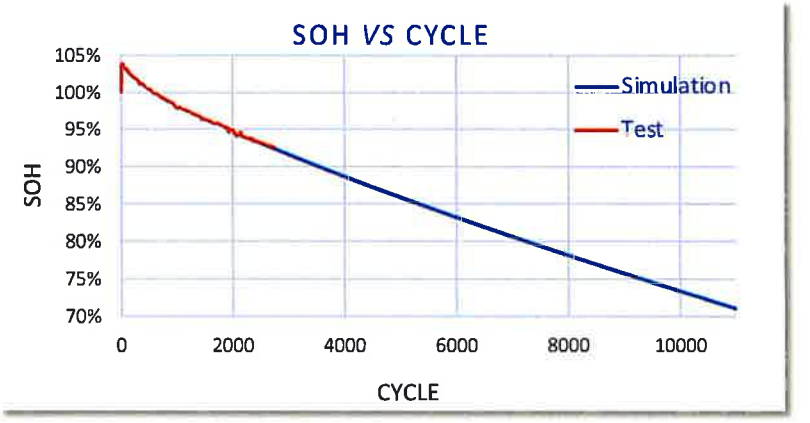
280 Ah Prismatic Cell

10000+ cycle life by optimizing the design of LFP 280Ah cell from cathode, anode and electrolyte etc.

Cathode(+): Uniform Carbon Coating Technology, Multi-element Doping Design.
Anode(-): Artificial SEI Modification, Graphitization Degree Adjustment
Electrolyte: Film-forming Additive Technology, Component Ratio Optimization.

Operating voltage	2.5 - 3.65 V (T＞0°C) 2.0 - 3.65V (T ≤ 0°C)
Charge & discharge rate	0.5P
Max charge & discharge rate	1P/1P
Energy density	≥160 Wh/kg
Operating temperature	-30 ~ 60°C
Dimension (W*H*D)	174.7*207.11*71.65mm
Weight	5.43 ± 0.2 kg

The first one that reached over 10000+ cycles



280Ah Cell Capacity Performance@0.5P 25°C

HiTHIUM Liquid-cooled Energy Storage System

Safer

Lower LCOS

Longer Cycle Life

Higher Energy Efficient

PRODUCT PORTFOLIO

We Focus on the Energy Storage Only

280Ah Cell
300Ah Cell

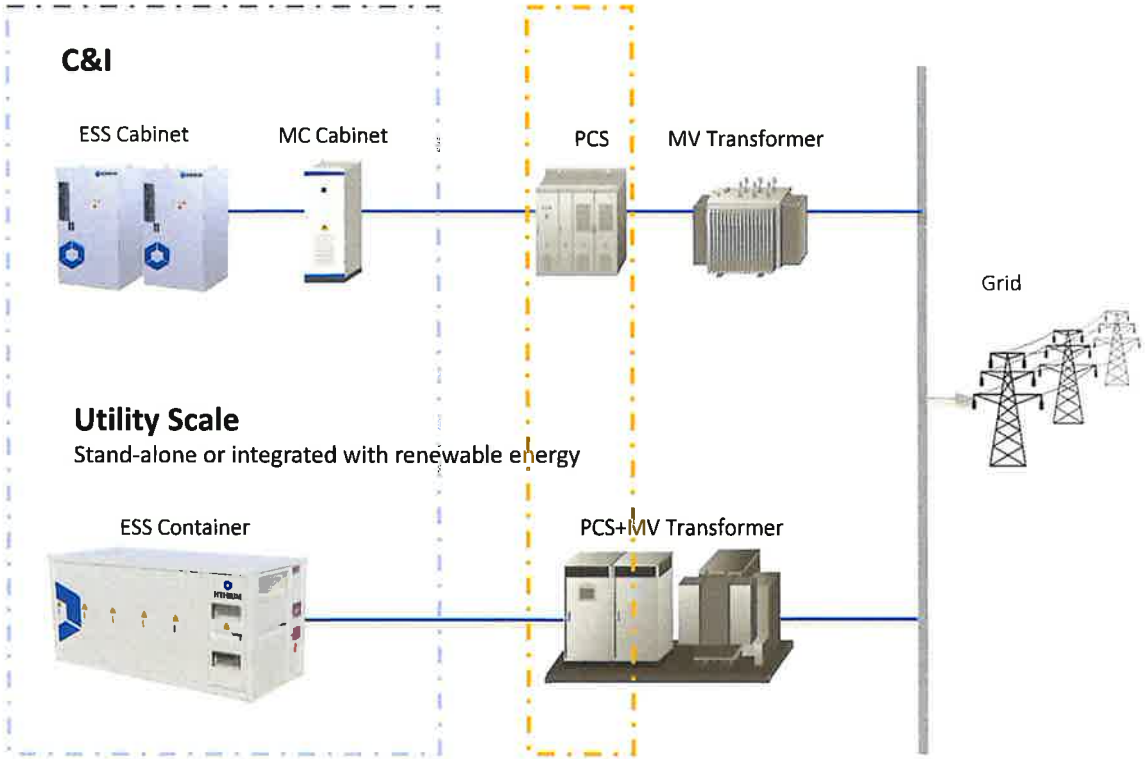
Module

ESS Cabinet
344kWh/399kWh

ESS Container
3.44MWh/3.99MWh

HiTHIUM

HiTHIUM Scope Supply



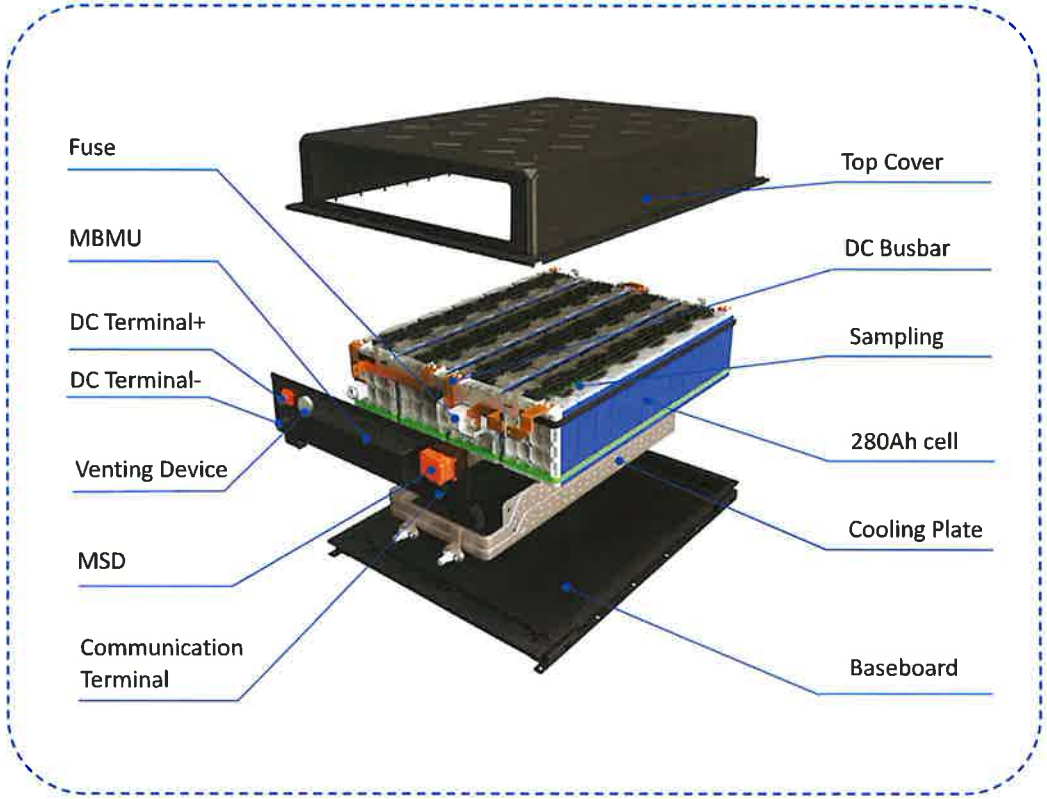
PCS Compatibility

SMA SUNGROW Ingeteam DELTA SINENG POWER ELECTRONICS

PRODUCT OVERVIEW

Battery Module

Configuration	1P48S
Rated voltage	153.6V
Rated energy	43.008 kWh
IP	IP67
Dimension (H*W*D)	245*820*1100mm
Weight	310kg



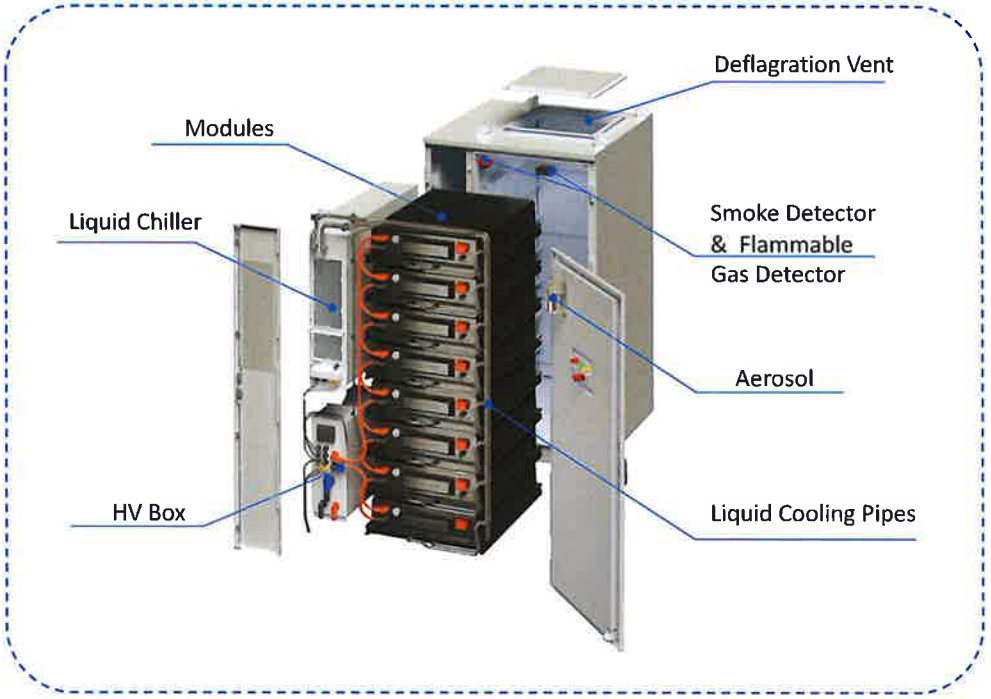
PRODUCT OVERVIEW

Energy Storage Cabinet

Configuration	8 modules
Downsize compatible	4 modules
Nominal energy (kWh)	172.03-344.06
Nominal voltage (V)	614.4-1228.8
Nominal charge/discharge rate	0.5P
Thermal management	Liquid cooling
IP Level	IP55
Operating temperature (°C)	-30~60
Dimension (mm)	2350*1300*1300 (H×W×D)
Weight (kg)	< 3500 （ min. <2300 ）

HITHIUM

- Small footprint, flexible capacity, indoor or outdoor installation
- Long system cycle life due to the advanced technologies of material and process
- Excellent thermal management improves the energy throughput
- All-in-one, including thermal management system, fire protection system, BMS etc



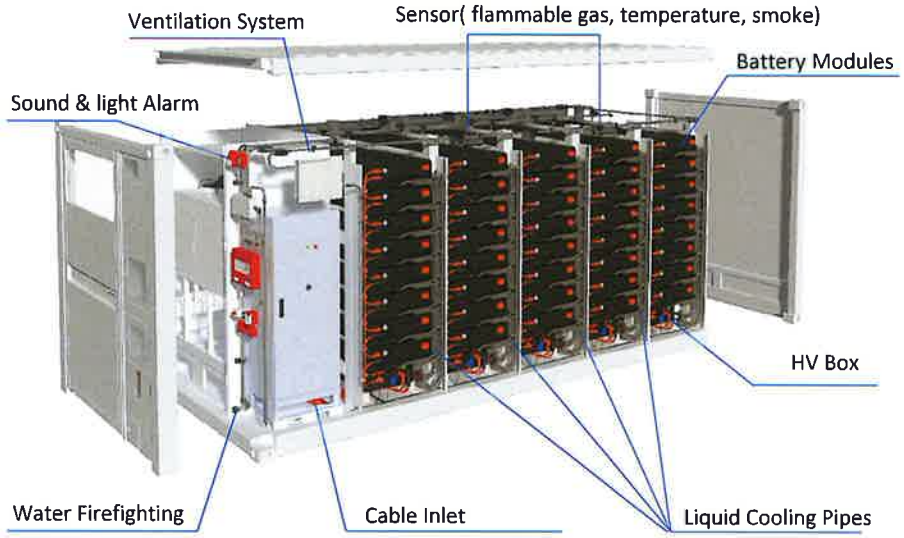
PRODUCT OVERVIEW

Eco
Energy Storage Container

Configuration	10P384S
Nominal energy (kWh)	3440.64
Nominal voltage (V)	1228.8
Nominal charge/discharge rate	0.5P
Thermal management	Liquid cooling
IP Level	IP54
Operating temperature (℃)	-30~60
Dimension (mm)	6058*2438*2896 (W*D*H)
Weight (t)	< 35

HTHIUM

- C4/C5 container for shipment, convenient and cost effective
- Long system cycle life due to the advanced technologies of material and process
- Excellent thermal management improves the energy throughput
- Thermal management system, fire suppression system, BMS etc



PRODUCT OVERVIEW

Ultra
Energy Storage System

HTHIUM

- **More energy in 20ft(+ 16%)**
- **More cycle life (+ 10%~20%)**
- **Lower loss (99%SOH before 1000th cycle)**

	300 Ah
Series-parallel Mode	10P416S
Rated charge/discharge	0.5P/0.5P
Rated Voltage	1331.2V
Rated Energy	3.99 MWh
IP Degree	IP54
Dimension (W*D*H)	6058 * 2438 * 2896 mm
Weight	< 39t

Launching in 2023Q4

** The above pictures and parameters are for reference only, and the specific specifications of mass production products shall prevail.*

CERTIFICATES

Products		UN38.3	RoHS	Reach	EU IEC62619	EU IEC63056	EU IEC62477	US UL 9540A	US UL 1973
	Cell	✓	✓	✓	✓	NA	NA	✓	✓
	Module	✓	✓	✓	NA	NA	NA	✓	✓
	ESS Cabinet	✓	✓	✓	✓* June 2023	✓* June 2023	✓* June 2023	✓	✓
	ESS Container	✓ UN3536	NA	NA	✓* June 2023	✓* June 2023	✓* June 2023	✓	✓
								✓*	In Progress

PRODUCT ROADMAP-Cell products

All the dates included indicate the Mass Production date

HITHIUM

	2023	2024	2025	2026
High Capacity Cell 	**280Ah (2022)** **10000 cycles @0.5P**	**320Ah** (Mar. 2024) **10000 cycles @0.5P**		**350Ah** (2025Q2) **10000 cycles @0.5P**
Longer Lifetime Cell 	**300Ah** (Jun. 2023) **12000 cycles @0.5P**		**320Ah** (2024Q4) **12000cycles@0.5P**	
Low C Rate Cell **(Long-time energy storage)** 			**320Ah** (2024Q3) **@0.25P**	
MIC **(Module In Cell)**			**MIC (2025Q1)** **1000~3000Ah** **12000 cycles** **@0.5P**	**MIC2.0 (2025Q4)** **15000 cycles @0.5P**

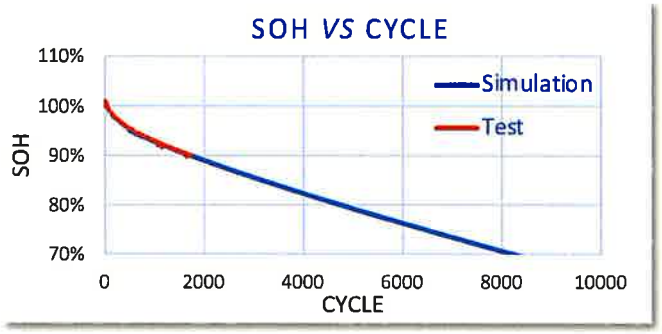
PRODUCT ROADMAP-System

2023 2023Q2 | **2024** 2024Q2 | 2024Q3 | **2025** 2025Q1

2023Q2	2024Q2	2024Q3	2025Q1
ESS1.0 Platform 280Ah 0.5P	ESS2.0 Platform 300Ah 0.5P	ESS 2.0 Platform 320Ah 0.5P	ESS3.0 MIC 0.5P
	3.44MWh	3.99MWh	4.26MWh 0.5P	
	344kWh	399kWh	426kWh 0.5P	1~2MWh 

LONG SYSTEM LIFETIME

8000+ cycles @0.5P, 70%SOH



Operating condition:0.5P, 1 cycle per day, 95% DOD

Hithium Testing Center

HIGH SYSTEM CONSISTENCY

HTHIUM

Cell Consistency

All cells are grade A

OCV：25±2℃，27%SOC
Capacity Test：Charge: Temp.@25±2℃，0.5P charge to 3.65V，rest for 30min; Discharge：Temp.@25±2℃，0.5P discharge to 2.5V，rest for 30min.

1) Capacity Difference:<=3Ah

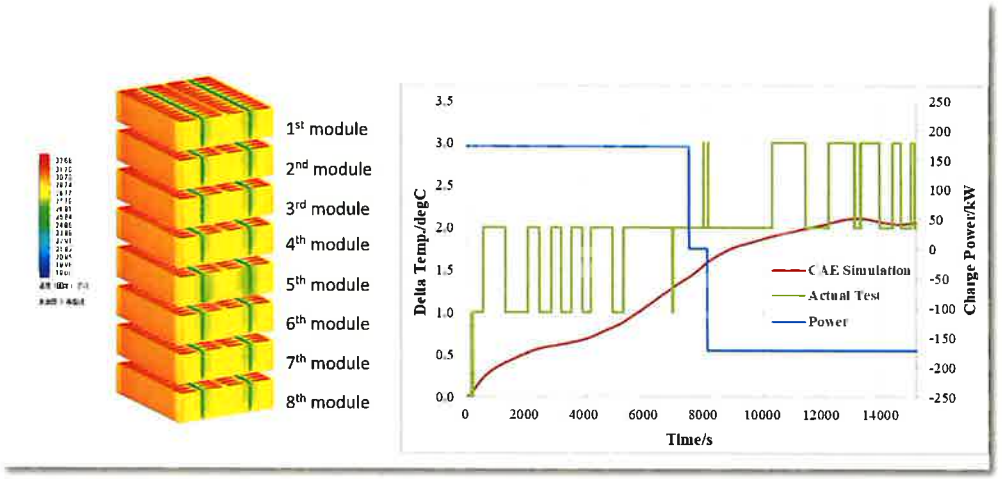
2) R_{ac} Difference:<=0.04mΩ

3) Voltage Difference:<=5mV

Environment Consistency

System Temperature Difference<3℃

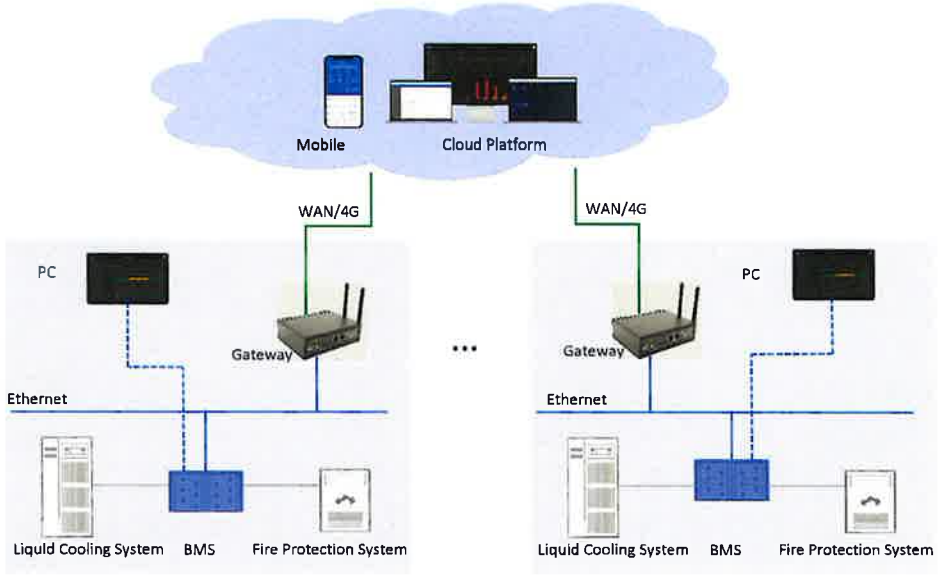
System level thermal simulation and real test showed optimized temperature difference at each level: cell-module-system



EASY OPERATION & MAINTENANCE

- Modular design
- Front accessible, easy for replacement and maintenance.

- Battery status monitoring and analysis
- Multiple user interfaces including wireless access facilitating on site O&M
- Remote diagnosis for quick trouble-shooting
- Remote software update



SAFETY IMPROVED BY MATERIAL INNOVATION

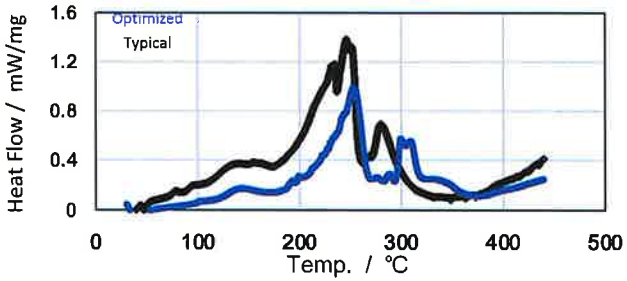
HiTHIUM

TÜVRheinland®
Precisely Right.

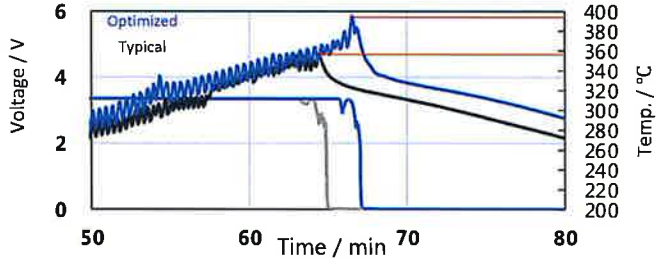
CTF Testing laboratory Authorized by TUV, listed on the IECEE website.

- Less heat generation helps suppress the thermal propagation
- Higher thermal stability reduces the risk of thermal runaway

DSC analysis shows improved heat characteristics



DV tests show Improved thermal stability



SUPPRESSED THERMAL RUNAWAY

HiTHIUM

No Fire, No Explosion cased by internal short circuit (originally by nail penetration, crush, drop, particles, dendrites etc.

No fire, No Explosion under extremely harsh conditions

Nail Penetration Test

- Steel needle, diameter=8mm
- Speed: 25 mm/s
- Penetrates and stays inside the cell
- Rest for 1 hour

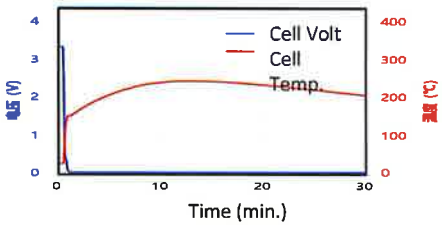
No fire, No Explosion

Crush Test

- Half cylinder, radius = 75 mm
- Speed: 5 mm/s
- Deformation ≥ **30%** or U = **0 V**
- or pressure ≥**13 kN**
- Rest for 1 hour

No fire, No Explosion

Hot Nail Penetration

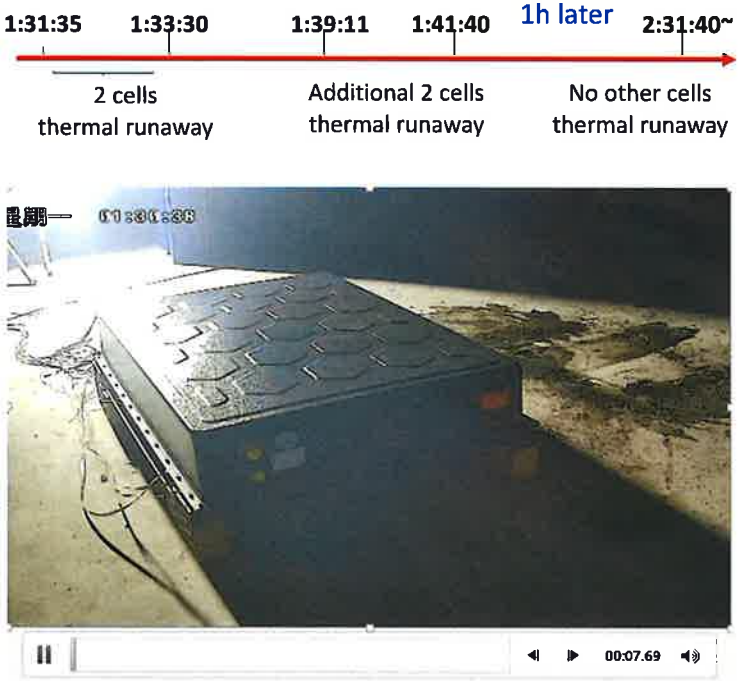


Penetration with heated nail

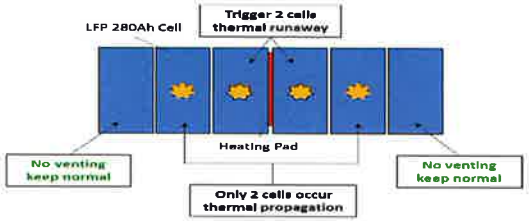
CONTROLLABLE THERMAL PROPAGATION

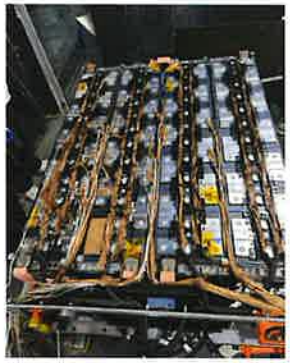
HITHIUM

UL9540A TEST

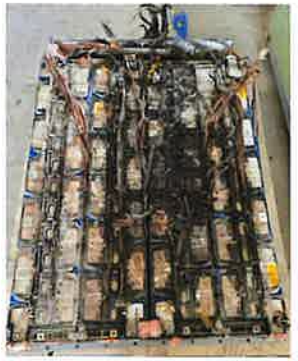


Very limited thermal propagation,
2 cells were triggered to thermal runaway, ONLY 2 cells went to thermal propagation. No fire, no explosion.





Before the test



After the test

ACTIVE SAFETY: BMS PREVENTION & PROTECTION

Data Acquisition & Calculation

- I,V sampling freq.≤50ms , Temp. Freq.≤1s;
- Accuracy: Voltage:± 5mV , Temp.± 1℃ , Current ±0.5% , SOC± 5% , R_{iso} < 10% ;

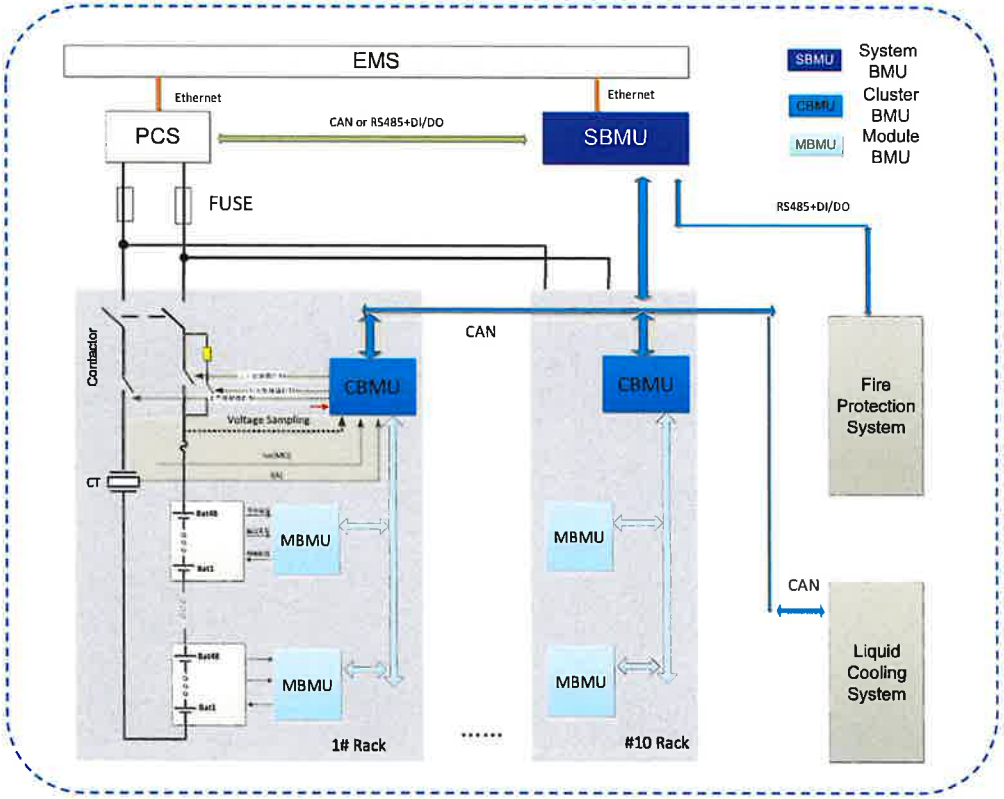
Analysis & Diagnosis & Alarm

Comprehensive analysis of the battery safety status, alarm in advance.

- Change of Temperature
- Change of Voltage
- SOC & SOH

Protection

Over-charge & over discharge protection,
Over-voltage & under-voltage protection;
Over-heating protection;
Over-current & short circuit protection;
Coordinated production with fire protection system



PASSIVE SAFETY: FIRE PROTECTION SYSTEM

Design in accordance with NFPA855

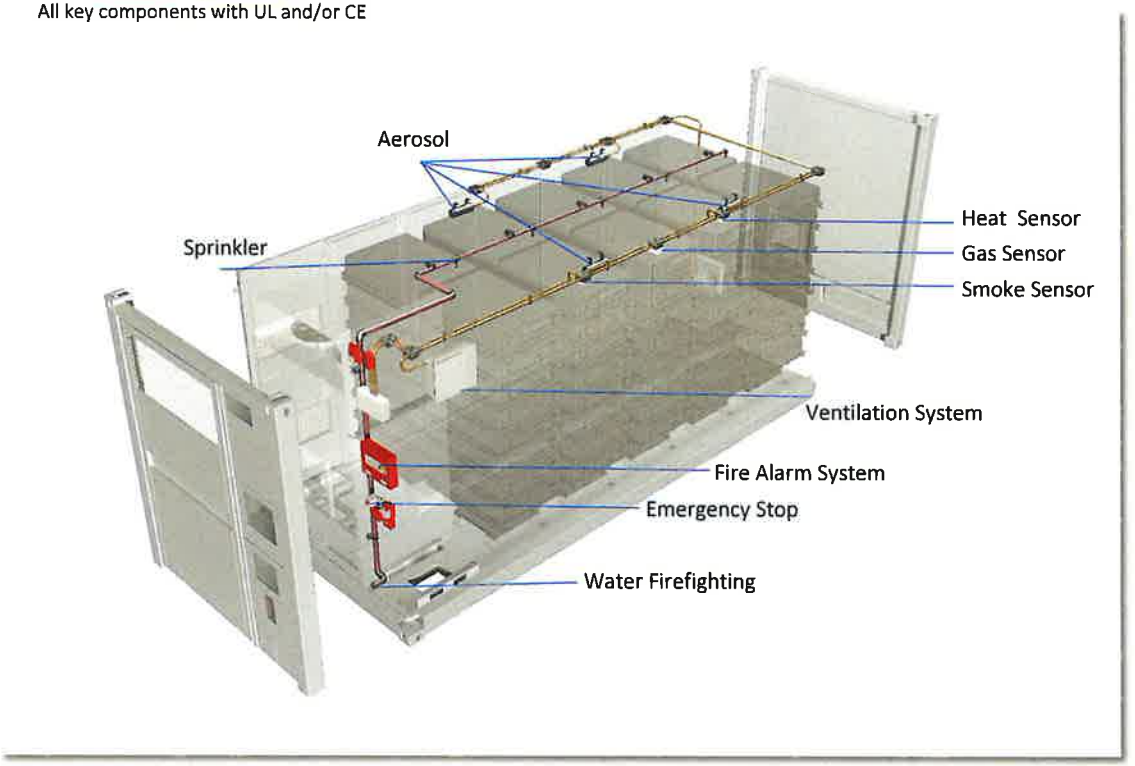
Authorized 3rd Party Safety Validation

All key components with UL and/or CE

National Fire Protection Association:
Standards for stationary storage battery systems

NFPA 855

- Hazard Mitigation Analysis
- Fire Risk Assessment
- NFPA 69 Analysis
- NFPA 68 Analysis
- ESS Fire Alarm System Design Review
- ESS Fire Extinguishing/ Suppression System Design Review



AFTER-SALES & WARRANTY

PRODUCT WARRANTY

Product Standard Warranty

- **5 years** of standard product warranty

No.	Items	Standard warranty period
1	Batteries	5 Years
2	BMS	5 Years
3	Cooling system	5 Years
4	Fire protection system	5 Years
5	HV Box	5 Years
6	UPS	5 Years

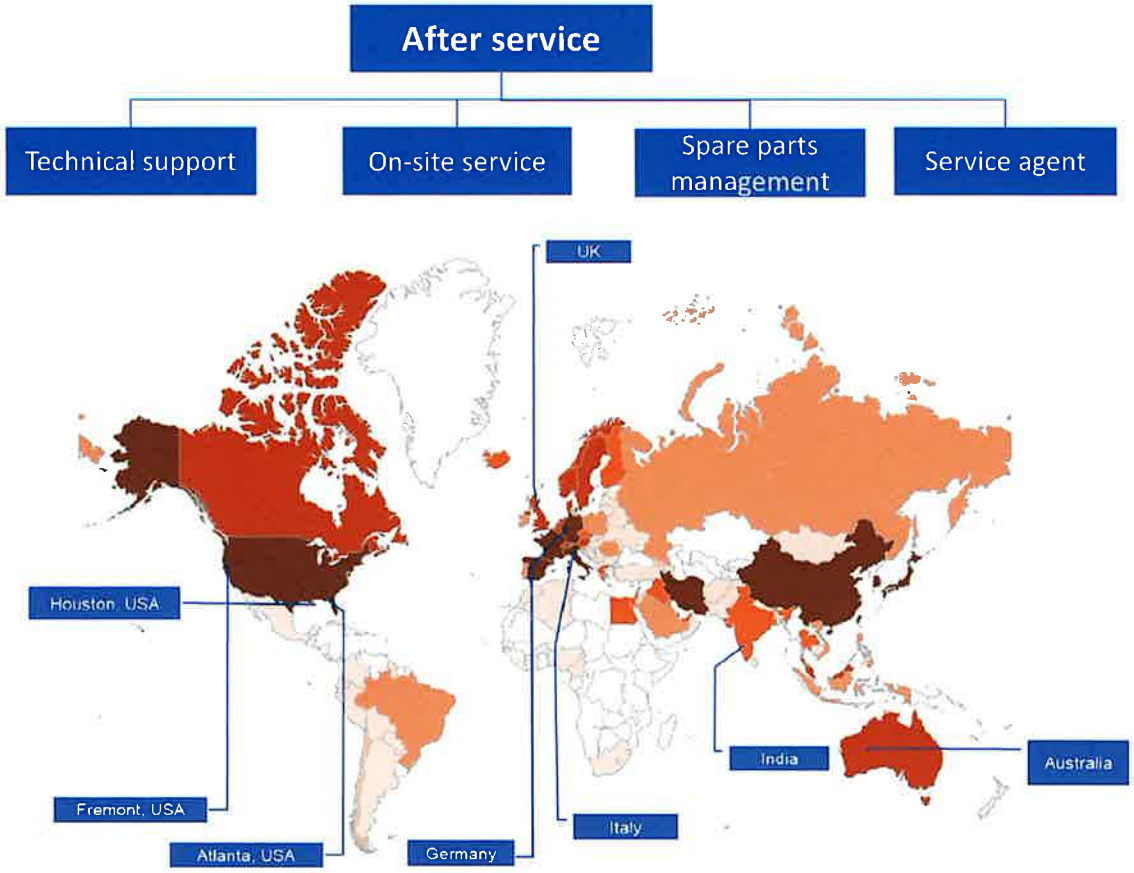
Product Extended Warranty

- **20 years warranty** (5 years standard warranty + 15 years extended warranty)
- Payment: **one-time** or **annual**
- Extended warranty service fee = T *R

T= total quotation of the procurement contract of this project, including tax

R=extended warranty rate corresponding to the warranty period

GLOBAL SERVICE NETWORK



NO	Region	After-sales address
1	America	Fremont
2		Houston
3		Atlanta
4	Europe	United Kingdom(UK)
5		Germany
6		Italy
7	ROW	Australia
8		India

- In 2023, Hithium will mainly focus on outsourcing services.
- In 2024, Hithium will gradually set up the after service team in America, Europe and ROW regions.

SERVICE MODE & SCOPE

HITHIUM

Standard Service

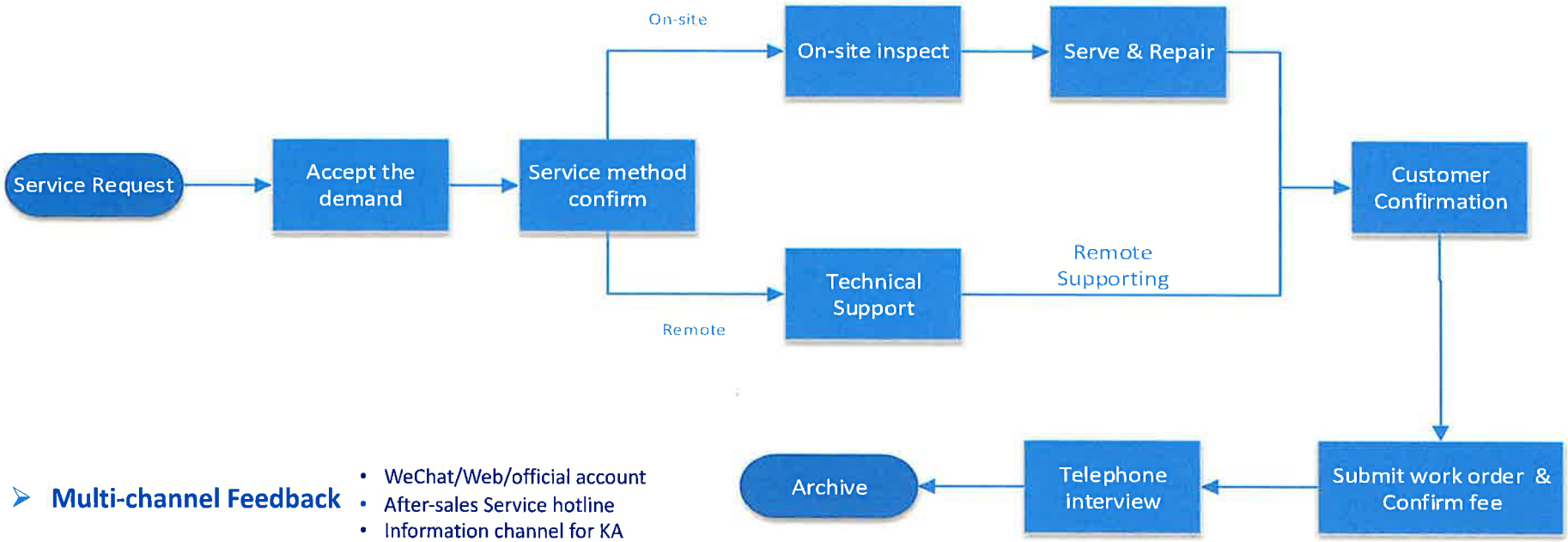
1. Product commissioning and acceptance
2. Customer Training (Product O&M, Product inspection,...)
3. AS maintenance, upgrades, periodic inspections, etc.
4. Used product recycling

AS services

Customized service

1. Product O&M Guidance, Technical support
2. Spare parts sales
3. Compensable service & Extended warranty service
4. Others

SERVICE PROCEDURE



- **Multi-channel Feedback**
  - WeChat/Web/official account
  - After-sales Service hotline
  - Information channel for KA
- **Uninterrupted Service**
  - 7*24h Online/Onsite support
  - Service during holidays
- **On-site Support**
  - On-site investigation
  - Technical maintenance
  - Technical training
  - System optimization
- **Professional Team**
  - Professional rating service engineer
  - Professional training instructor
  - R&D staff support
  - Professional information platform maintenance
- **Network Layout**
  - Service network across districts
  - Resident after-sales staff in key regions
  - Warehouse layout in key markets

HITHIUM

hithium@hithium.com
www.hithium.com/en/

EXHIBIT 4

Exhibit 4

Fire Safety Information

Fire Protection System of ESS Container

1. Introduction

This document describes the layout and the control logic of various fire protection systems in the ESS container.

Xiamen Hithium Energy Storage Technology Co., Ltd. (**"Hithium"**) offers this document as the standard limited document. The content of this document is supposed to be checked and updated when necessary.

Please contact Hithium or your distributors for the latest version.

2. Layout and Descriptions

The fire protection system is designed following the NFPA855 installation standard for stationary energy storage system.

The fire protection system includes FACP (Fire alarm control panel), automatic alarm system, ventilation system, aerosol fire extinguishing system and water spray system (Optional).

The ESS container enclosure plates are three-layer structure composed of double steel plate and fireproof rock wool, and the fire resistance rating is greater than 1h;

The interior and exterior decoration materials are all flame retardant materials, and the fire protection grade of the materials is UL94-V0.

The gas detection system and combustible gas concentration reduction system are provided with a minimum of 2 hours of standby power according to NFPA 855-2013 section 9.6.5.6.7 (3).

The gas detection system is provided with a minimum of 24 hours of standby power and 2 hours in alarm according to NFPA 855-2013 section 9.6.5.6.7 (4).

A secondary power supply is provided for smoke and fire detection systems in accordance with NFPA 72 capable of 24 hours in standby and 2 hours in alarm according to NFPA 855-2013 section 4.8.3.

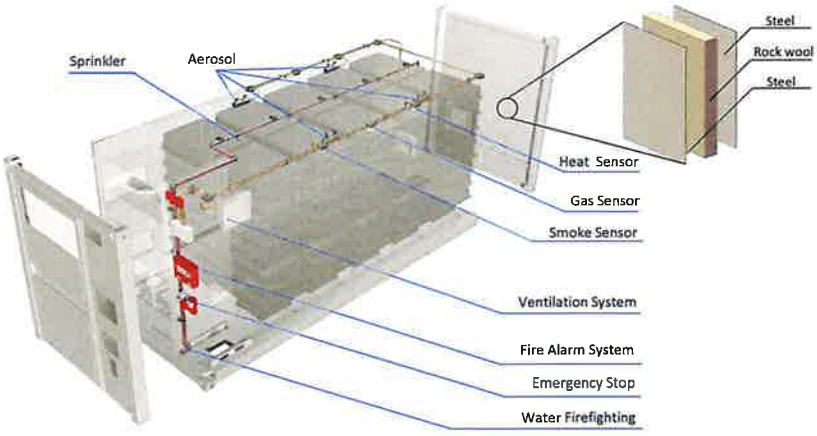


Fig-1 Fire Protection System

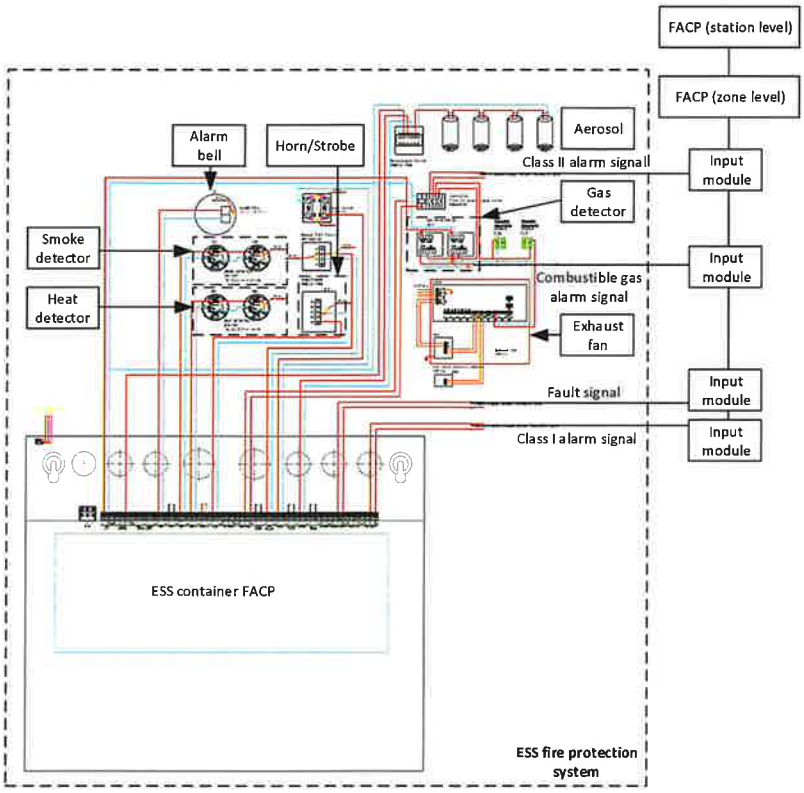


Fig-2 Fire Protection System Diagram

As shown in the above figure, four of dry contact output signals will be exported from the ESS fire protection system, which include Class I alarm signal, Class II alarm signal, Fault signal and Combustible gas alarm signal. These four signals shall be transmitted to the input modules in the ESS container, and then connects to the station level FACP/zone level FACP (for large projects) for communications.

2.1. Automatic Alarm System

The automatic alarm system is mainly composed of heat detector, smoke detector, alarm bell, horn/strobe, manual pull station, emergency button and maintenance switch.

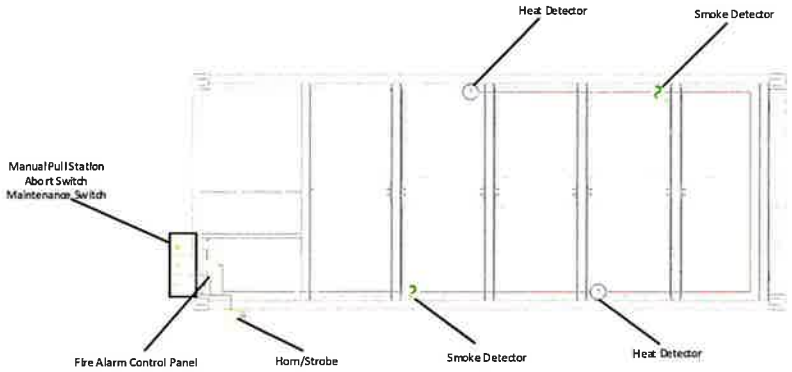


Fig-3 Automatic Alarm System

2.2. Ventilation System

The ventilation system is mainly composed of combustible gas detector, fan control box, air inlet electric shutter and exhaust fan.

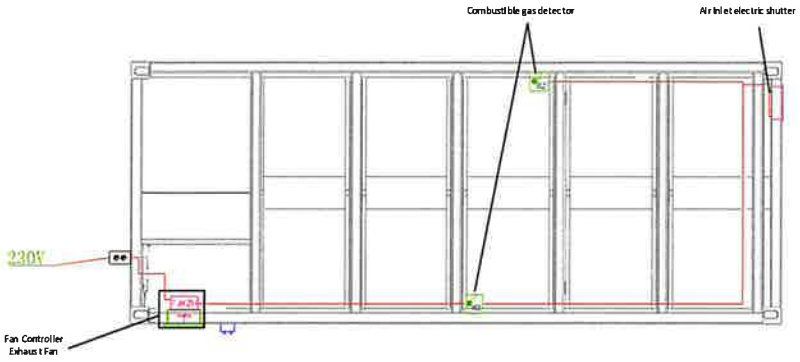


Fig-4 Air Inlet and Exhaust System

2.3. Aerosol Fire Extinguishing System

The aerosol fire extinguishing system is mainly composed of aerosol.

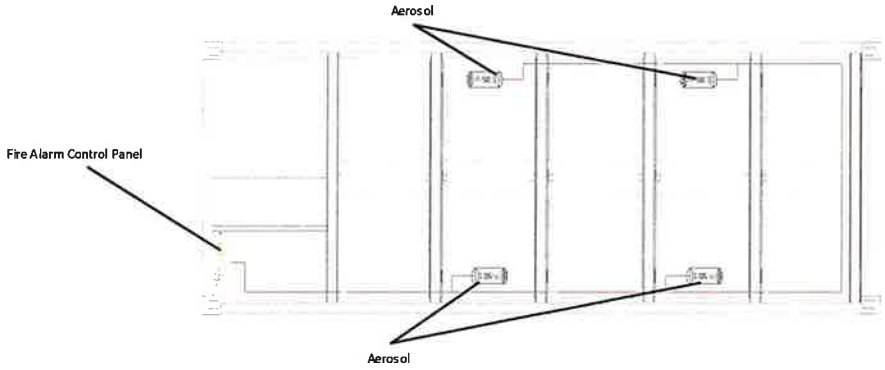


Fig-5 Aerosol Fire Extinguishing System

2.4. Water Spray System

The water spray system is mainly composed of sprinklers and pipes.

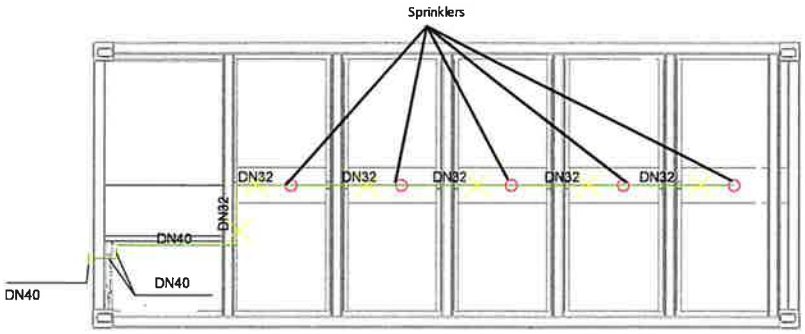
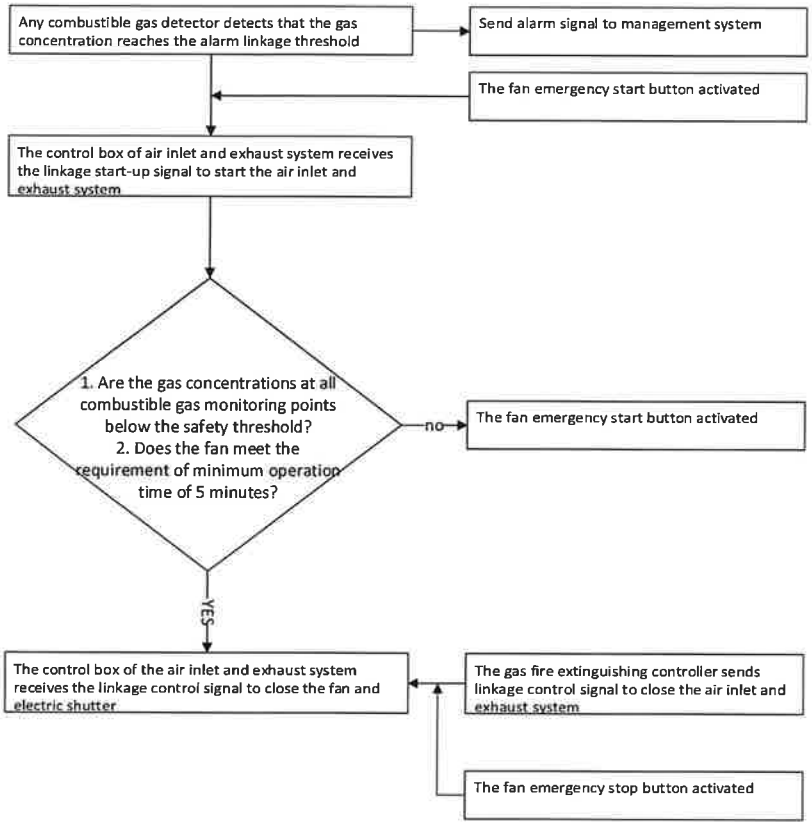


Fig-6 Water Spray System

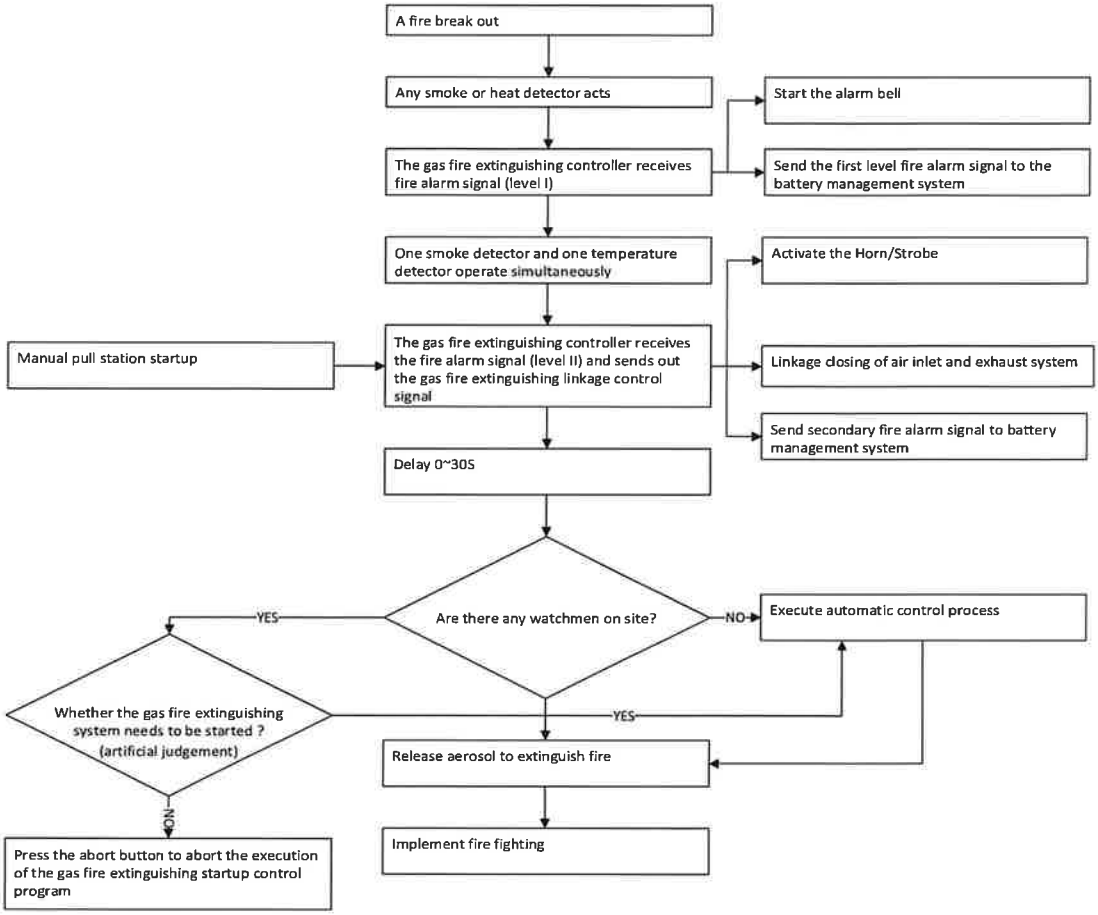
DN40 quick connector shall be reserved for connecting outdoor fire hydrant or fire truck.

3. Control Logic of Fire Extinguishing Process

3.1. Control Logic of Air Inlet and Exhaust System



3.2. Control Logic of Automatic Fire Protection System



4. Configuration List

No	Item	Unit	Quantity	Remarks
1	Fire alarm control panel	pcs	1	UL
2	Battery	pcs	2	UL
3	Smoke detector	pcs	2	UL
4	Heat detector	pcs	2	UL
5	Detector base	pcs	4	UL
6	Emergency stop button	pcs	1	UL
7	Manual pull station	pcs	1	UL
8	Disable switch	pcs	1	UL
9	Horn/Strobe	pcs	1	UL
10	Alarm bell	pcs	1	UL
11	Relay	pcs	1	UL
12	Aerosol	pcs	4	UL
13	Aerosol fixed support	set	4	N/A
14	Hydrogen detector	pcs	2	UL
15	Air inlet device	set	1	N/A
16	Air exhaust device	set	1	Fan, UL
17	Emergency startup/stop switch for air inlet and exhaust	pcs	2	UL
18	Sprinkler	pcs	5	UL
19	Quick connector (including closed cover)	pcs	1	N/A
20	Auxiliary materials	set	1	N/A

Xiamen Hithium Energy Storage Technology Co., Ltd.
201-2, 5# Comprehensive Building, No.11, Butang Middle Road, Torch High-Tech (Tongxiang) Industrial base, Tong'an District, Xiamen, China
T: 0592-6050365
E: hithium@hithium.cn
Web: www.hithium.com

EXHIBIT 5

Exhibit 5

Forestry Inventory and Soils Mapping

Ferrucci & Walicki, LLC
Forestry and Land Management Consultants
6 Way Road, Middlefield, CT 06455
www.fwforesters.com

860-349-7007
fax: 860-349-7032
fw@fwforesters.com

September 6, 2022

Brian Wood, Senior Land Manager
FirstLight Power
143 West Street
New Milford, CT 06776

Dear Brian,

The following is a synopsis of my findings during a recent visit to FirstLight Power's (FLP) Tunnel Station property in Preston and Lisbon[1], Connecticut. Per our discussions and communication with New Leaf, FLP is considering a small clearing operation adjacent to the area that contains some existing infrastructure. The infrastructure that currently exists includes the fuel storage tank, the fuel lines, the jet turbine, fencing and associated infrastructure to ensure the safety and function of those items. The clearing to be done would be to accommodate a battery storage unit.

The amount of land included in the proposed clearing area (shown in bright green on the attached map) is 1.38 acres as calculated on our GIS. When the currently cleared areas are subtracted, the forested acreage to be cleared is approximately 1.03 acres. If additional clearing beyond the scope of what is currently proposed is required for any reason, the options are limited. The western boundary of the proposed clearing and fence line run along the property boundary with Eversource. The southern boundary is the existing access road for the station and substations. The eastern and northeastern boundary is very close to the Shetucket River (approximately 50 feet), which significantly limits potential for expansion in that direction. The area along the northern and northwestern lines have potential for expansion if need be however there is a fairly significant change in elevation north of the proposed line.

Based on a quantitative inventory of the property conducted on 8/24/22, the portion of the property that is proposed for clearing currently contains approximately 99 trees per acre of sawtimber and poletimber-sized trees[2]. Photos at each plot were taken facing in all four cardinal directions and are included on page 3 for your use. We used a 20 basal area factor angle gauge and collected data at two plots within the area to be cleared. Primary tree species in the main canopy include red maple, black oak, red oak, and white oak along with some beech, black birch, and others. Hemlock saplings and small poletimber-sized trees are found in places in the lower canopy levels. Regeneration (seedlings and saplings) of some desirable species including oaks is present. Some mortality of large diameter oak trees likely attributable to the spongy moth[3] defoliations of 2015-2017 were noted. Understory vegetation noted includes stiped pipsissewa, poison ivy, huckleberry, sedge, highbush blueberry, and other herbaceous species.

There are a couple of woods roads that are currently being used by ATVs and other unauthorized motorized vehicles to access the area. The tire tracks noted during my visit appeared to have been from

[1] The portion of the property described in this document is only in Preston.
[2] Poletimber trees are from 5-11 inches in diameter at breast height (dbh – 4.5 ft. above ground level) as measured outside the bark. Sawtimber trees are 12 inches dbh and greater.
[3] Spongy moth was formerly referred to as gypsy moth but was officially changed in early 2022.

either earlier that day or the day before. The roads both lead to the access road south of the proposed clearing area and continue onto Eversource property to the west.

The quantitative data for the plots are shown below.

	BA/acre**	BA/acre AGS**	Trees/acre**	Trees/acre AGS**	Volume/acre	Volume/acre AGS
Seedlings			1500			
Saplings			300			
Sawtimber trees	70	30	61	19	4.8	3.9
Poletimber trees	20	10	38	23	1.8	1.1
Snags	10		8			
Total	90	40	99	42		
MSD*	12.9					

*Quadratic Mean Stand Diameter

** Total trees includes sawtimber and poletimber-sized trees only

MBF= Thousand board feet

BA= Basal area and is given in square ft./acre

Special Features

As part of the process of investigating the area, we created a series of maps using available online geospatial provided by Connecticut Department of Energy and Environmental Protection (CT DEEP) and the University of Connecticut. Maps begin on page 5 and show:

- Natural Diversity Database (NDDB) occurrences
- Prime agricultural soils
- Mapped wetland soils
- Core Forest

A search of Critical Habitats known to exist by CT DEEP was conducted. None occurs within the proposed work area, nor on the property, but there are some nearby on adjacent properties. If you have any questions, please let me know. Thanks very much.

Sincerely,

Eric Hansen

CC: Eric Weinstein (New Leaf), Brandon Smith (New Leaf), Sandra Brown (FLP)

Photos

Plot 1

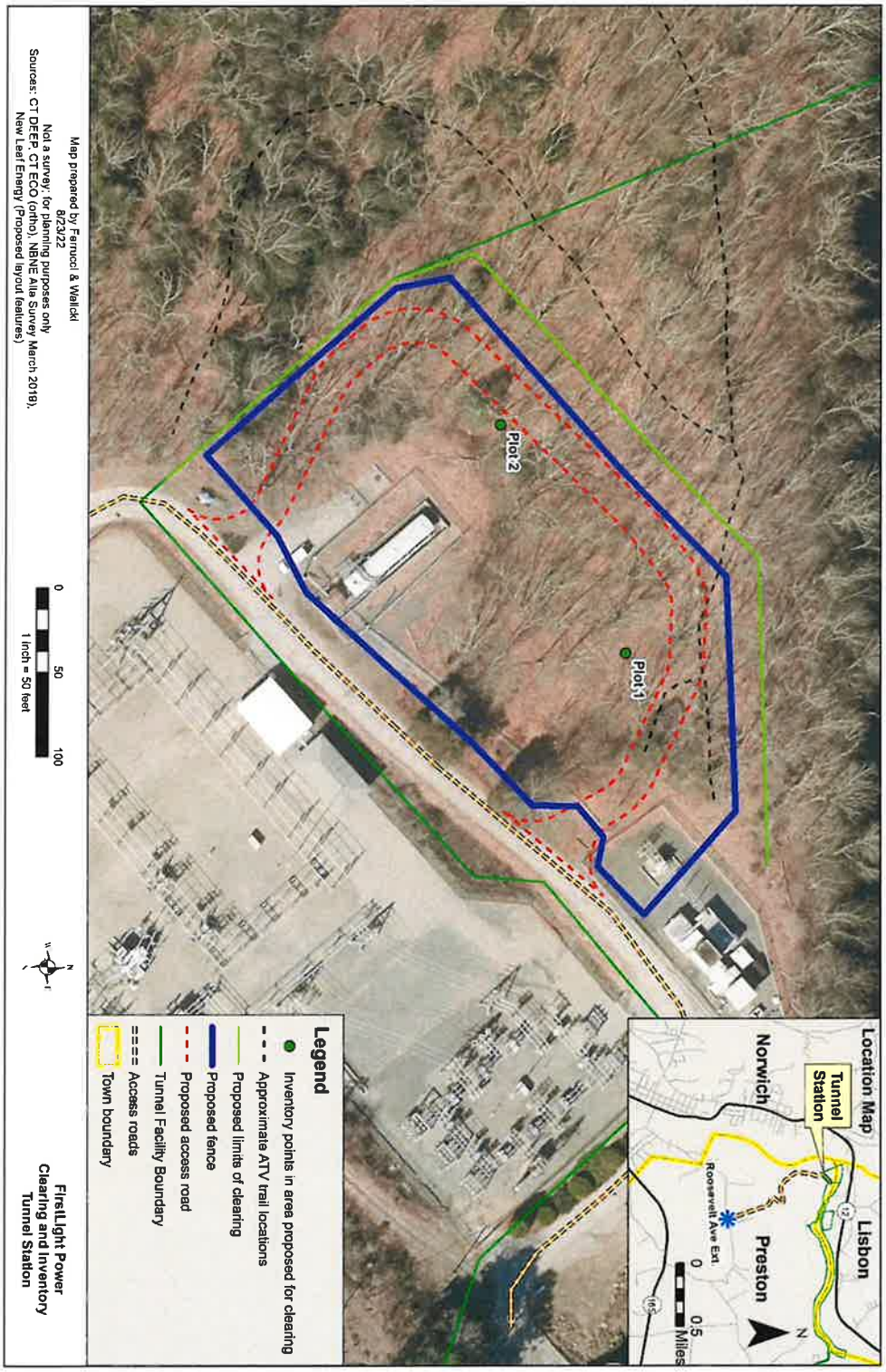
Clockwise from top: View at Plot 1 to the north, east, west, and south.

Plot 2

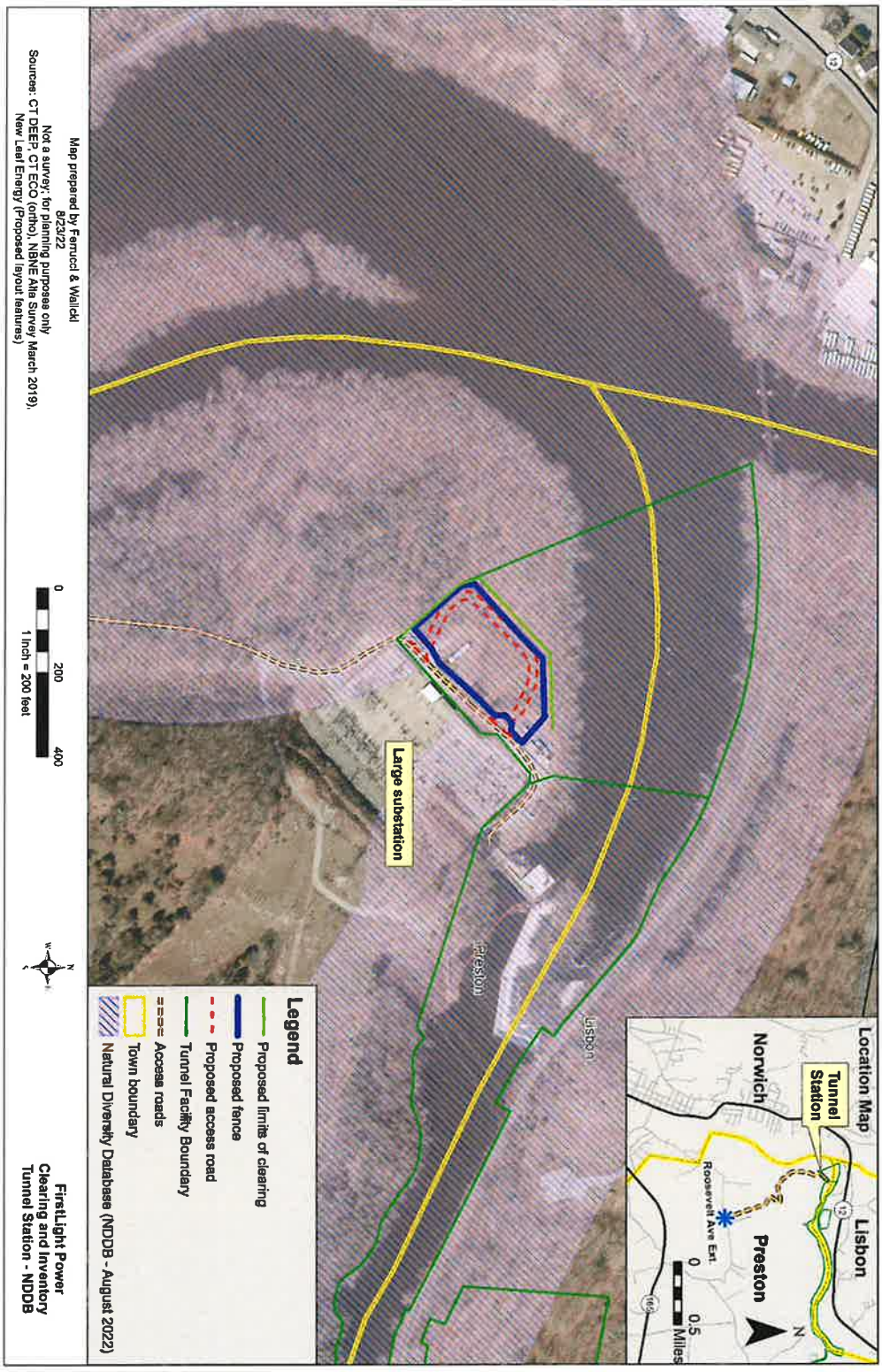



Clockwise from top: View at Plot 2 to the north, east, west, and south.

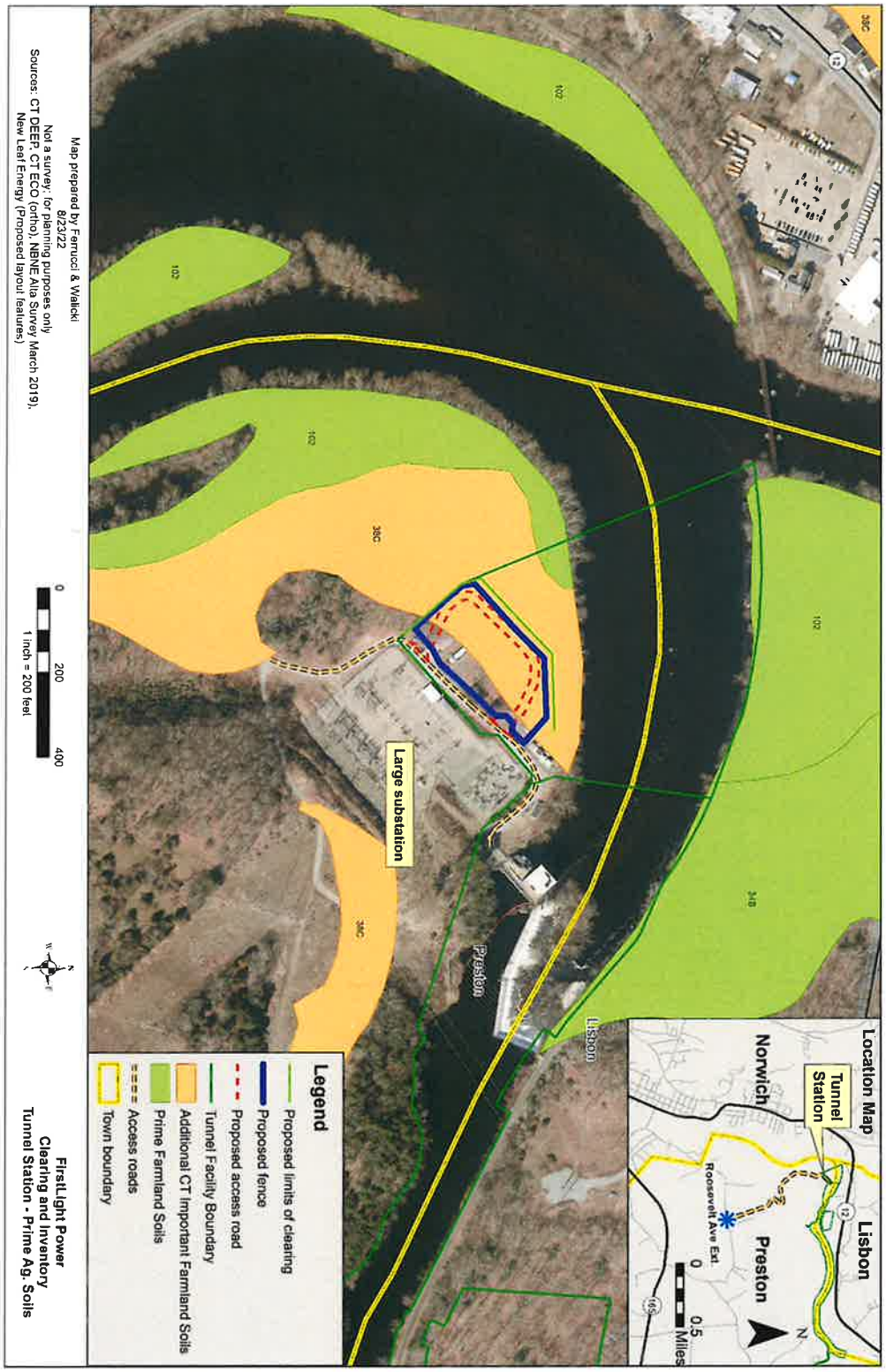
Maps
Plot Locations



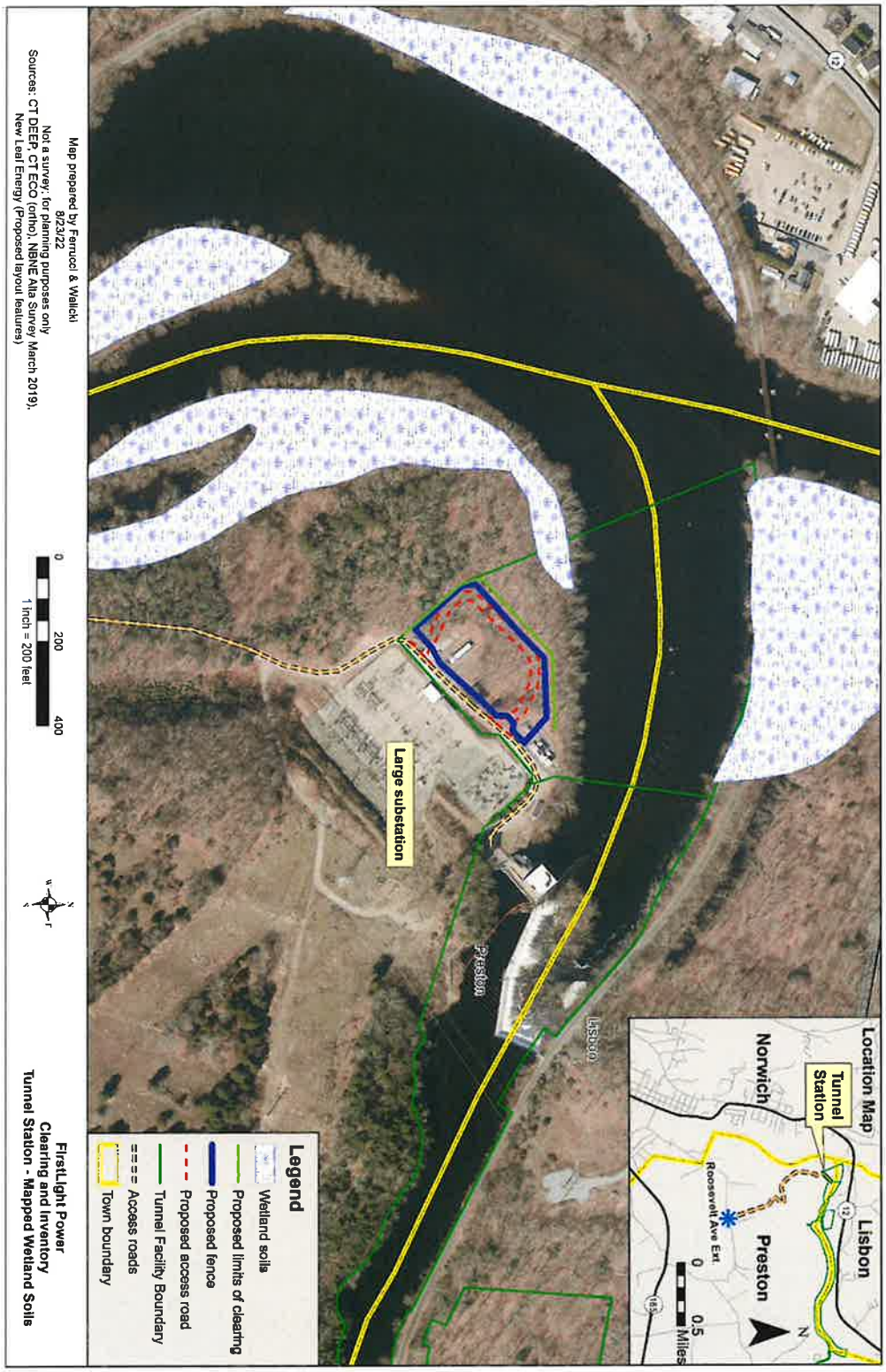
Natural Diversity Database (NDDB)



Prime Agricultural Soils



Mapped Wetland Soils



Core Forest

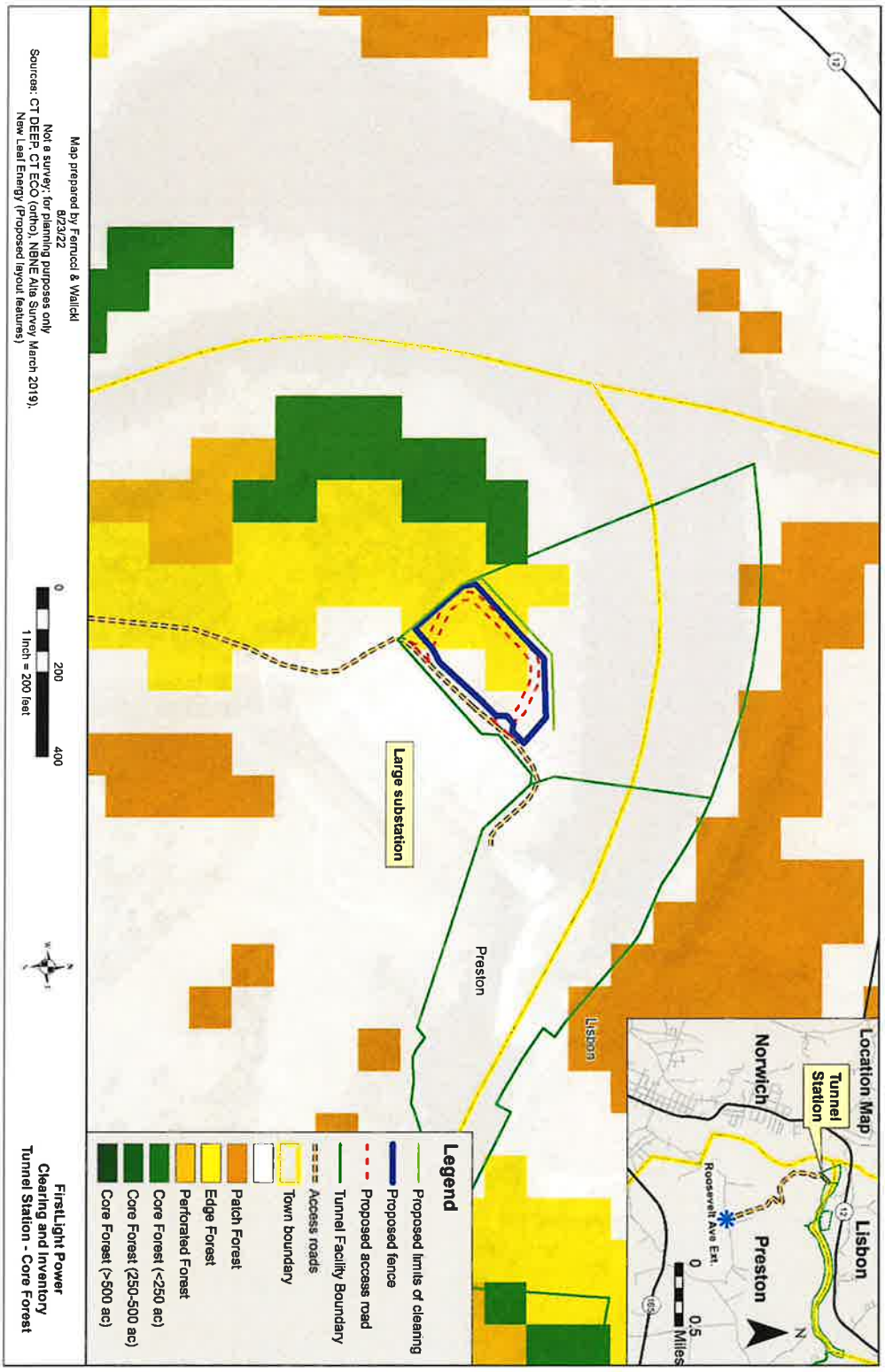

Location Map
Tunnel Station
Lisbon
Norwich
Preston
Roosevelt Ave Ext.
0
0.5 Miles
N
Lisbon
Preston
Large substation
Legend
Proposed limits of clearing
Proposed fence
Proposed access road
Tunnel Facility Boundary
Access roads
Town boundary
Patch Forest
Edge Forest
Perforated Forest
Core Forest (<250 ac)
Core Forest (250-500 ac)
Core Forest (>500 ac)
0
200
400
1 Inch = 200 feet
Map prepared by Fernucci & Wallckl
8/23/22
Not a survey: for planning purposes only
Sources: CT DEEP, CT ECO (ortho), NBNE Alta Survey March 2019),
New Leaf Energy (Proposed layout features)
FirstLight Power
Clearing and Inventory
Tunnel Station - Core Forest

EXHIBIT 6

Exhibit 6

Connecticut DEEP Natural Diversity Data Base Review

new leaf energy

Brandon Smith <bsmith@newleafenergy.com>

RE: NDDB Determination Number 202203659

1 message

Hess, Brian <Brian.Hess@ct.gov> Tue, Apr 12, 2022 at 10:01 AM
To: Brandon Smith <bsmith@borregosolar.com>
Cc: Eric Weinstein <eweinstein@borregosolar.com>, Caleb Letourneau <cletourneau@borregosolar.com>

Correct – they do use the same nest year after year. Given this pair's successful track record, I would wager that they will be successful this year and back again in 2023.

Starting in summer is a good scenario for the eagles. Their nesting attempt will be nearly over at that point, and the adults will be unlikely to abandon due to any disturbance. Like I said, though, I think your project is far enough that it should not be an issue.

If you check in with me as plans become more solid, I can let you know about the status of the nest and any subsequent advice I may have.

Brian

From: Brandon Smith <bsmith@borregosolar.com>
Sent: Tuesday, April 12, 2022 9:56 AM
To: Hess, Brian <Brian.Hess@ct.gov>
Cc: Eric Weinstein <eweinstein@borregosolar.com>; Caleb Letourneau <cletourneau@borregosolar.com>
Subject: Re: NDDB Determination Number 202203659

Hi Brian,

No, we do not anticipate blasting or pile driving. The construction activity will be more of a typical construction site (bulldozers/excavators running, concrete deliveries, trucks backing up).

Construction will not begin until next summer at the earliest. Would you recommend we check in with you closer to construction? Bald Eagles use the same nest year after year, correct? Is it safe to say they will likely not move closer to our site?

Brandon Smith
Civil Engineer, PE
E: bsmith@borregosolar.com | T: 978-221-3093 | C: 603-819-9693

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On Tue, Apr 12, 2022 at 9:44 AM Hess, Brian <Brian.Hess@ct.gov> wrote:

> Hi Brandon,
>
> There is a bald eagle nest approximately 1000 feet to the west-southwest of your project on the island in the Shetucket River. The distance should be enough of a buffer for most construction related activities, especially considering that the area between your site and the nest is heavily wooded. Do you intend on doing any activities that might produce sudden loud noises like blasting?
>
> Thanks,
>
> Brian

Brian Hess, Wildlife Biologist

Wildlife Division; Bureau of Natural Resources

Connecticut Department of Energy and Environmental Protection
Sessions Woods WMA, P.O. Box 1550, Burlington, CT 06013-1550
C: 860-876-9259 | P: 860.424.3208 | E: Brian.Hess@CT.gov

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

www.ct.gov/deep

Conserving, improving and protecting our natural resources and environment;

Ensuring a clean, affordable, reliable, and sustainable energy supply.

From: Brandon Smith <bsmith@borregosolar.com>
Sent: Monday, April 11, 2022 3:42 PM
To: Hess, Brian <Brian.Hess@ct.gov>; Eric Weinstein <eweinstein@borregosolar.com>; Caleb Letourneau <cletourneau@borregosolar.com>
Subject: NDDB Determination Number 202203659

Good Afternoon, Brian,

I am a civil engineer working to design a project in Preston, CT. We recently received a response from DEEP regarding a Natural Diversity DataBase review (attached). Impacts to Bald Eagles were not anticipated due to our project, but it was recommended that we reach out to you to determine if a nest or roost is in the area.

We are not anticipating starting construction until next year, but I want to avoid any last minute surprises.

Attached is a site plan of the proposed project. Please let me know if you are aware of any activity that would not come up in the NDDB review.

Thank you,

Brandon Smith
Civil Engineer, PE
E: bsmith@borregosolar.com | T: 978-221-3093 | C: 603-819-9693

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Connecticut
Department of Energy &
Environmental Protection

portal.ct.gov/DEEP

7/22/2024

Brandon Smith
New Leaf Energy, Inc.
55 Technology Dr
Lowell, MA 01851
bsmith@newleafenergy.com

Subject: Tunnel BESS
Filing #: 115352
NDDB - New Determination Number: 202407621

Expiration Date: 7/22/2026

NDDB has reviewed the application and materials submitted in association with the above project. The following listed species are found within the vicinity of your project area:

- Bald eagle (*Haliaeetus leucocephalus*) – **State Threatened**
- Blueback herring (*Alosa aestivalis*) – State Special Concern

It is illegal pursuant to section 26-93 of the Connecticut General Statutes to disturb Bald eagles. This law prohibits disturbing the birds while they are roosting, feeding, or nesting. The Wildlife Division recommends a 660' setback with no public access from a bald eagle nest or critical roosting site. To determine if nest or roost in your area is active this year, contact the DEEP Wildlife Biologist coordinating eagle monitoring (Brian.hess@ct.gov).

The submitted project boundary is currently outside of this setback. If your footprint extends further, the protection measures listed below will need to be implemented:

- Work activities and staging areas are prohibited within 330 feet (approximately 100 meters) of active nests/roosts that are out of line of sight, or within 660 feet (approximately 200 meters) from nests/roosts that are in the line of sight during periods of eagle use, unless surveys demonstrate that the nest or roost is not being used. Critical nesting time is between February 1- August 1.
- Minimize cutting of large trees. No known bald eagle nest trees, perch trees, or roost trees will be felled or modified.
- Your application states that there will be no blasting or pile driving during the course of your project. Should that change, the following must be adhered to:
    - No blasting, pile driving and other intermittent activities that produce loud noises within 1/2 mile of active nests. This recommendation applies to the use of fireworks classified by the Federal Department of Transportation as Class B explosives, which includes the larger fireworks that are intended for licensed public display.
- Eagles scavenge. Do not leave exposed food, trash, or hazardous materials. Promptly remove any incidental carcasses that may appear on work site (roadkill, euthanized or poisoned pest animals)

Do not use helicopters for support.

You application does not indicate any in-water work. If you anticipate in water work, DEEP Fisheries Biologists review permit applications submitted to DEEP regulatory programs to determine whether projects might adversely affect listed species. If you have not already consulted with a DEEP Fisheries Biologist, please submit the DEEP Fisheries Consultation Form to (Deep.inland.fisheries@ct.gov).

Your submission information indicates that your project requires a state permit, license, registration, or authorization, or utilizes state funding or involves state agency action. This NDDB - New determination may be utilized to fulfill the Endangered and Threatened Species requirements for state-issued permit applications, licenses, registration submissions, and authorizations.

Please be aware of the following limitations and conditions:

Natural Diversity Database information includes all information regarding listed species available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, land owners, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Database and accessed through the ezFile portal as it becomes available. New information may result in additional review, and new or modified restrictions or conditions may be necessary to remain in compliance with certain state permits.

- During your work listed species may be encountered on site. A report must be submitted by the observer to the Natural Diversity Database promptly and additional review and restrictions or conditions may be necessary to remain in compliance with certain state permits. Please fill out the appropriate survey form and follow the instructions for submittal.
- Your project involves the state permit application process or other state involvement, including state funding or state agency actions; please note that consultations with your permit analyst or the agency may result in additional requirements. In this situation, additional evaluation of the proposal by the DEEP Wildlife Division may be necessary and additional information, including but not limited to species-specific site surveys, may be required. Any additional review may result in specific restrictions or conditions relating to listed species that may be found at or in the vicinity of the site.
- If your project involves preparing an Environmental Impact Assessment, this NDDB consultation and determination should not be substituted for biological field surveys assessing on-site habitat and species presence.
- The NDDB - New determination for the Tunnel BESS as described in the submitted information and summarized at the end of this document is valid until 7/22/2026. This determination applies only to the project as described in the submission and summarized at the end of this letter. Please re-submit an updated Request for Review if the project's scope of work and/or timeframe changes, including if work has not begun by 7/22/2026.

If you have further questions, please contact me at the following:

Anna Toledo
CT DEEP Bureau of Natural Resources
Wildlife Division
Natural Diversity Database
79 Elm Street
Hartford, CT 06106-5127

Anna.Toledo@ct.gov

Please reference the Determination Number 202407621 when you e-mail or write. Thank you for consulting the Natural Diversity Data Base.

Anna Toledo
Wildlife Division- Natural Diversity Data Base
79 Elm Street
Hartford, CT 06106-5127
Anna.Toledo@ct.gov

Application Details:

Project involves federal funds or federal permit:	No
Project involves state funds, state agency action, or relates to CEPA request:	Yes
Project requires state permit, license, registration, or authorization:	Yes
DEEP enforcement action related to project:	
Project Type:	Energy and Utility Production Facilities and Distribution Infrastructure
Project Sub-type:	New facility construction
Project Name:	Tunnel BESS
Project Description:	

EXHIBIT 7

Exhibit 7

USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104

In Reply Refer To:
Project Code: 2023-0126640
Project Name: Tunnel Jet

07/03/2024 21:18:28 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Updated 4/12/2023 - Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the **"New England Field Office Endangered Species Project Review and Consultation"** website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

https://www.fws.gov/office/new-england-ecological-services/endangered-species-project-review

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Northern Long-eared Bat - (**Updated 4/12/2023**) The Service published a final rule to reclassify the northern long-eared bat (NLEB) as endangered on November 30, 2022. The final rule went into effect on March 31, 2023. You may utilize the **Northern Long-eared Bat Rangewide Determination Key** available in IPaC. More information about this Determination Key and the Interim Consultation Framework are available on the northern long-eared bat species page:

https://www.fws.gov/species/northern-long-eared-bat-myotis-septentrionalis

For projects that previously utilized the 4(d) Determination Key, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective. If your project was not completed by March 31, 2023, and may result in incidental take of NLEB, please reach out to our office at newengland@fws.gov to see if reinitiation is necessary.

Additional Info About Section 7 of the Act
Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/service/section-7-consultations

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to

consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

https://www.fws.gov/program/migratory-bird-permit

https://www.fws.gov/library/collections/bald-and-golden-eagle-management

Please feel free to contact us at **newengland@fws.gov** with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

PROJECT SUMMARY

Project Code: 2023-0126640
Project Name: Tunnel Jet
Project Type: Power Gen - Other
Project Description: Energy Storage Facility
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.554520749999995,-72.04358328046924,14z

Counties: New London County, Connecticut

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis*	Endangered

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- This species only needs to be considered if the project includes wind turbine operations.

Species profile: https://ecos.fws.gov/ecp/species/9045

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.

Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Ella Prabhakar
Address: 55 Technology Drive
City: Lowell
State: MA
Zip: 01851
Email eprabhakar@newleafenergy.com
Phone: 9782213093

EXHIBIT 8

Exhibit 8

Wetland and Watercourses Report

December 3, 2021

Mr. Brian Wood
FirstLight Power Resources
143 West Street
New Milford, CT 06776

Re: Wetland Delineation/Verification – 82 Roosevelt Avenue Extension
5-Acre Area along Hydro Dam
Preston, Connecticut
SLR #141.13970.00015.0010

Dear Mr. Wood,

As requested, on November 17, 2021, Matthew Sanford, registered soil scientist and professional wetland scientist, and Marlee Antill, environmental scientist, of SLR International Corporation (SLR) visited the approximately 5-acre study area located off Roosevelt Avenue Extension in Preston, Connecticut, to determine the presence or absence of wetlands and/or watercourses and delineate boundaries of wetlands and watercourses adjacent to an existing hydroelectric dam located on the Quinebaug River (Figure 1). The study area consists of an area of land located between the river and the existing substation. While the study area is located within the town of Preston, it abuts the town of Lisbon to the north and the city of Norwich to the west, both across the river from the study area. Wetland resources in the study area include the ordinary high water (OHW) line to the Quinebaug River, just upstream of the confluence with the Shetucket River. Wetlands comprised of state and federal regulated hydric soils and state-regulated alluvial soil wetlands exist adjacent to the project study area to the west.

On the day of the site investigation, weather conditions were overcast with an air temperature of approximately 50°F.

Soils were examined using a Dutch auger. Geospatial data was accessed via the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) web soil survey mapping. The soil survey mapping is appended (Figure 2). The survey identifies the following soil mapping units with associated NRCS map numbers in the project area:

- Hinckley loamy sand (38C)
- Pootatuck fine sandy loam (102)
- Udorthents-Urban land complex (306)

The field investigation largely confirmed the NRCS soil mapping. Much of the study area comprises well-drained upland soils to the east with wetland resources limited to the OHW line to the southern bank of the Quinebaug River located in the northern portion of the study area. Sequentially numbered blue flags

delineating the OHW line were attached to sturdy vegetation in the field and are depicted on Figure 1 as flag series OHW-1 through OHW-14. Within the western portion of the study area, moderately well-drained, alluvial soils in the Pootatuck series were observed upgradient of the OHW line, extending southwest. An approximately 0.7-acre area of state-regulated, alluvial soil wetlands was delineated just outside the project study area. The state wetland boundary was demarcated in the field with orange flagging and depicted on Figure 1 as flag series CT-WET-1 through CT-WET-8. Finally, a small (approximately 0.2-acre) area of state and federal regulated hydric soil wetlands was identified southwest of the state alluvial soil wetland. This depressional floodplain area featured 6 to 8 inches of standing water on the day of the investigation atop dark, poorly drained soils. The boundary of state and federal wetlands was demarcated with pink flagging and is depicted on Figure 1 as flag series FED WET W-1 through FED WET W-3.

The southern bank of the Quinebaug River in the northeastern portion of the study area is steep and armored with riprap and large boulders. This portion of the project area features canopy trees including yellow birch (*Betula alleghaniensis*), red oak (*Quercus rubra*), white oak (*Quercus alba*), beech (*Fagus grandifolia*), sugar maple (*Acer saccharum*), black poplar (*Populus nigra*), and eastern hemlock (*Tsuga canadensis*) with sparse understory cover composed of mountain laurel (*Kalmia latifolia*), winged euonymus (*Euonymus alatus*), Japanese barberry (*Berberis thunbergii*), poison ivy (*Toxicodendron radicans*), American wintergreen (*Pyrola americana*), and poverty grass (*Danthonia spicata*). Along the watercourse to the west, the banks begin to flatten, supporting a palustrine deciduous forested wetland with a canopy comprising sycamore (*Platanus occidentalis*), red maple (*Acer rubrum*), and black birch (*Betula lenta*) and a shrub strata including witch hazel (*Hamamelis virginiana*), northern arrowwood (*Viburnum dentatum*), nannyberry (*Viburnum lentago*), sweet pepperbush (*Clethra alnifolia*), highbush blueberry (*Vaccinium croymbosum*), American elm saplings (*Alnus americana*), and northern spicebush (*Lindera benzoin*). The state and federal wetlands area located outside of the study area is largely open canopy with depressional pools and featuring red maple, silky dogwood (*Swida amomum*), and sensitive fern (*Onoclea sensibilis*) growing atop low hummocks.

The Quinebaug River is a Class B watercourse with a Federal Emergency Management Agency (FEMA) designated 100-year floodplain and floodway within the project area. The study area is located at the bottom of the 195-square-mile Quinebaug River subwatershed, which extends over 52 miles north to south from southern Massachusetts to the project site in Preston, Connecticut. Just west of the study area, the Quinebaug River confluences with the Shetucket River, which flows south and west to drain to the Thames River approximately 3.3 miles to the southwest. As shown on Figure 3, the entirety of the study area is located within a June 2021 Connecticut Department of Energy & Environmental Protection Natural Diversity Database listed-species polygon.

Wetlands perform certain functions and possess values based on wetland type, hydrologic connectivity, habitat, and a variety of other measurable parameters.

The principal functions and values of the state and federal floodplain wetland areas include the following:

- Groundwater recharge
- Flood flow alteration
- Production export
- Bank stabilization
- Sediment/toxicant retention
- Wildlife habitat
- Visual quality/aesthetics
- Nutrient removal
- Fishery habitat
- Potential state-listed species habitat

If you have any questions regarding this letter, please do not hesitate to call me at (203) 271-1773 or email me at msanford@slrconsulting.com.

Sincerely,

SLR International Corporation

Matthew J. Sanford, MS, PWS, Registered Soil Scientist
US Manager of Ecology

Enclosures

141.13970.00015.0010.d315.ltr.docx

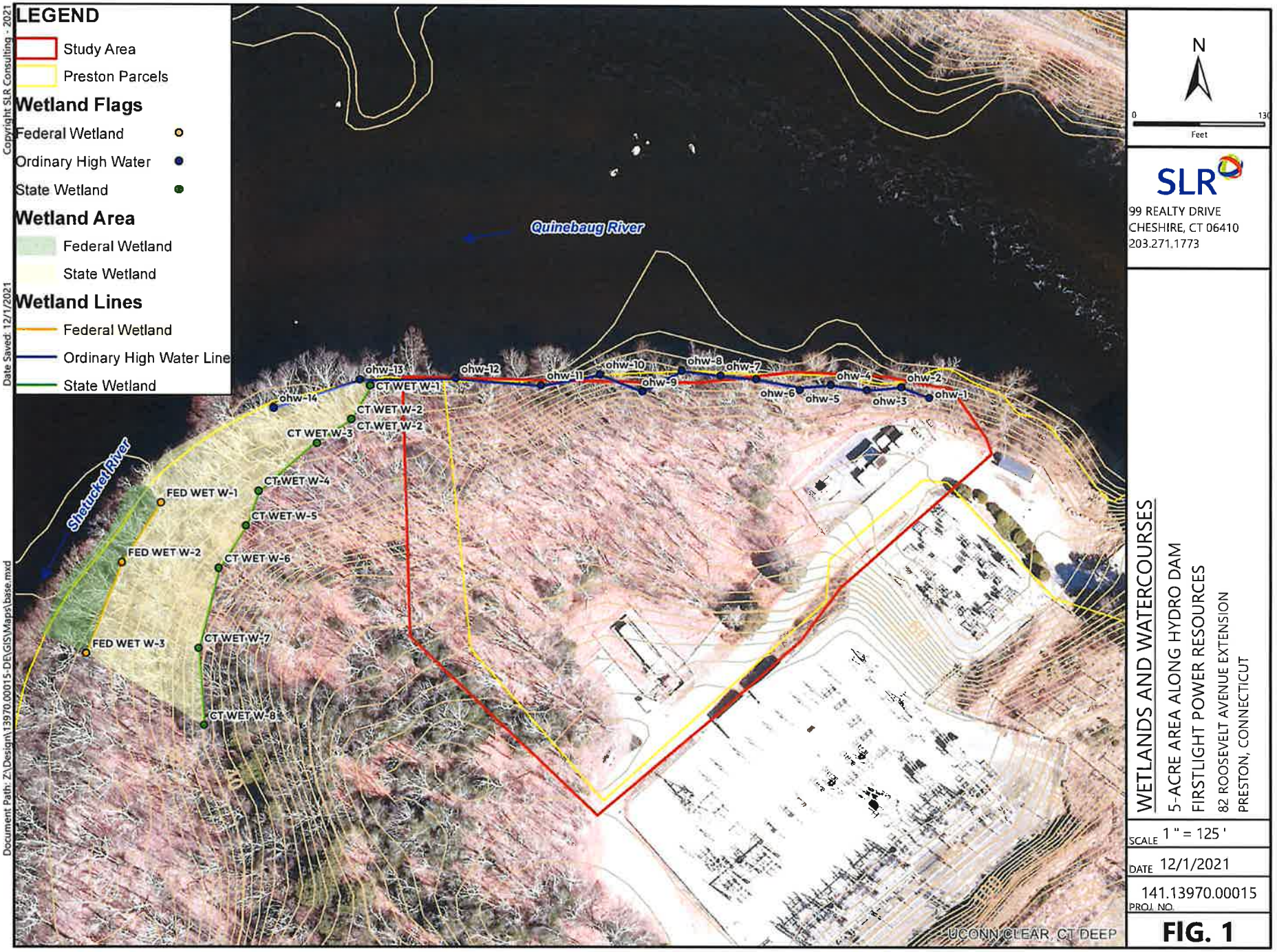

LEGEND
Study Area
Preston Parcels
Wetland Flags
Federal Wetland
Ordinary High Water
State Wetland
Wetland Area
Federal Wetland
State Wetland
Wetland Lines
Federal Wetland
Ordinary High Water Line
State Wetland
Quinebaug River
Shetucket River
ohw-13
ohw-12
ohw-11
ohw-10
ohw-9
ohw-8
ohw-7
ohw-6
ohw-5
ohw-4
ohw-3
ohw-2
ohw-1
ohw-14
CT WET W-1
CT WET W-2
CT WET W-2
CT WET W-3
CT WET W-4
CT WET W-5
CT WET W-6
CT WET W-7
CT WET W-8
FED WET W-1
FED WET W-2
FED WET W-3
UCONN CLEAR, CT DEEP
N
0
130
Feet
SLR
99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773
WETLANDS AND WATERCOURSES
5-ACRE AREA ALONG HYDRO DAM
FIRSTLIGHT POWER RESOURCES
82 ROOSEVELT AVENUE EXTENSION
PRESTON, CONNECTICUT
SCALE 1 " = 125 '
DATE 12/1/2021
141.13970.00015
PROJ. NO.
FIG. 1
Copyright SLR Consulting - 2021
Date Saved: 12/1/2021
Document Path: Z:\Design\13970.00015-DE\GIS\Maps\base.mxd

FIG. 2 NRCS Soil Mapping

Soil Map—State of Connecticut
(Roosevelt Avenue Ext.)

Map Scale: 1:4,620 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 21, Sep 7, 2021

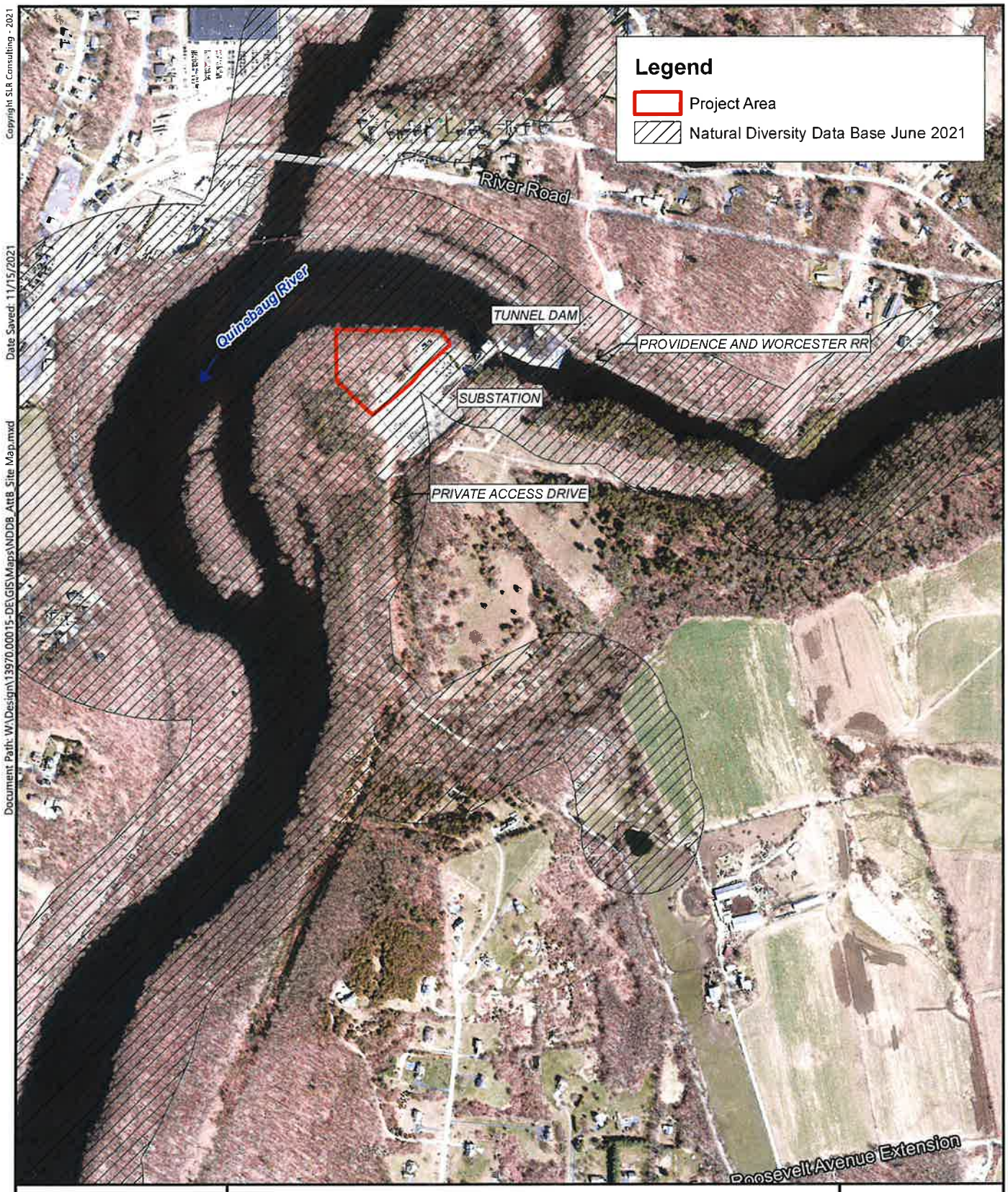
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2019—Mar 27, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
34B	Merrimac fine sandy loam, 3 to 8 percent slopes	6.9	6.2%
38C	Hinckley loamy sand, 3 to 15 percent slopes	10.5	9.5%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	12.8	11.5%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	5.9	5.3%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	5.0	4.5%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	8.6	7.7%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	2.7	2.4%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	14.0	12.5%
102	Pootatuck fine sandy loam	9.8	8.9%
306	Udorthents-Urban land complex	4.2	3.8%
307	Urban land	1.7	1.6%
W	Water	29.0	26.1%
Totals for Area of Interest		**111.2**	**100.0%**



Date Saved: 11/15/2021

Document Path: W:\Design\13970.00015-DE\GIS\Maps\NDDB_Att8_Site Map.mxd

SLR

99 REALTY DRIVE
CHESHIRE, CT 06410
203.271.1773

NATURAL DIVERSITY DATABASE MAPPING 2021

5-ACRE AREA ALONG HYDRO DAM
FIRSTLIGHT POWER RESOURCES
82 ROOSEVELT AVENUE EXTENSION
PRESTON, CONNECTICUT

N

0 500
Feet

SCALE 1 " = 901 '
DATE 11/15/2021
141.13970.00015
PROJ. NO.

FIG. 3

EXHIBIT 9

Exhibit 9

Stormwater Watershed Plans

new leaf energy
55 TECHNOLOGY DRIVE, SUITE 102
LOWELL, MA 01851
PHONE: (888) 895-6273
FAX: (888) 843-5778
WWW.NEWLEAFENERGY.COM

NOT FOR CONSTRUCTION

TUNNEL JET
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

QUINEBAUG RIVER
EDGE OF RIVER
EDGE OF WATER (TYP.)
POA 1
D 26.0
C 46.4
B 69.0
A 71.8
100 YEAR FLOOD PLAIN LIMITS
500 YEAR FLOOD PLAIN LIMITS
WETLAND LINE (TYP.)
100 YEAR FLOOD PLAIN
100' WETLAND BUFFER
TC PATH (TYP.)
TREELINE (TYP.)
HYDROLOGICAL STUDY AREA
CT WET W-1
CT WET W-2
CT WET W-3
CT WET W-4
CT WET W-5
CT WET W-6
CT WET W-7
CT WET W-8
CONCRETE BRIDGE
FISH LADDER
ELEC. CONDUIT
HEAD WALLS
GAS TURBINE
gravel
INV. OUT 24" C.M.P. 38.7'
INV. IN 18" C.M.P. 39.1'
INV. OUT 24" C.M.P. 55.0'
INV. OUT 15" C.M.P. WITH RISER
INV. IN 15" C.M.P. 39.2'
INV. IN 24" C.M.P. 39.7'
DISCONNECT SWITCH
INV. IN 24" C.M.P. 41.0'
BENCHMARK = D.H
N 763832.777
E 1193537.207
EL 44.49 (TOP OF CONC.)
UNDERGROUND CONDUIT
INV. IN 24" C.M.P. 54.8'
NRCS SOIL LINE (TYP.)
UNDERGROUND ELECTRIC PER MAP REF 2
COVER
CONC. MON.
PAVED DITCH
306
BUILDING
BENCHMARK = D.H
N 763858.059
E 1193385.872
EL 71.78 (TOP OF CONC.)
CONTROL
INV. OUT 18" C.M.P. 66.8'
CHAIN LINK FENCE (TYP.)
73E
INV. OUT 18" C.M.P. 67.4'
INV. IN 18" C.M.P. 67.2'
HEADWALL & CULVERT PIPE (TYPICAL)
MONITORING WELL (TYP.)
RR SPIKE IN PAVEMENT
MAN HOLE VAULT DRAIN
LONG DRAINS CATCH BASIN
WETLAND
MW-1
MW-2
MW-3
MW-4
GATE
SHED
SIGN
1

LEGEND

TC PATH
REACH
POA 1 — POINT OF ANALYSIS
1 — SUBCATCHMENT

N

SCALE: 1" = 30'
0 30' 60'

PRE-DEVELOPMENT WATERSHED PLAN

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
	07/03/24	NSB	BLS	SITE USE PLAN

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

PROJECT NUMBER: 120-0319

W-1.0
PRE-DEVELOPMENT WATERSHED PLAN

new leaf energy
55 TECHNOLOGY DRIVE, SUITE 102
LOWELL, MA 01851
PHONE: (978) 934-5233
FAX: (978) 843-8778
WWW.NEWLEAFENERGY.COM

NOT FOR CONSTRUCTION

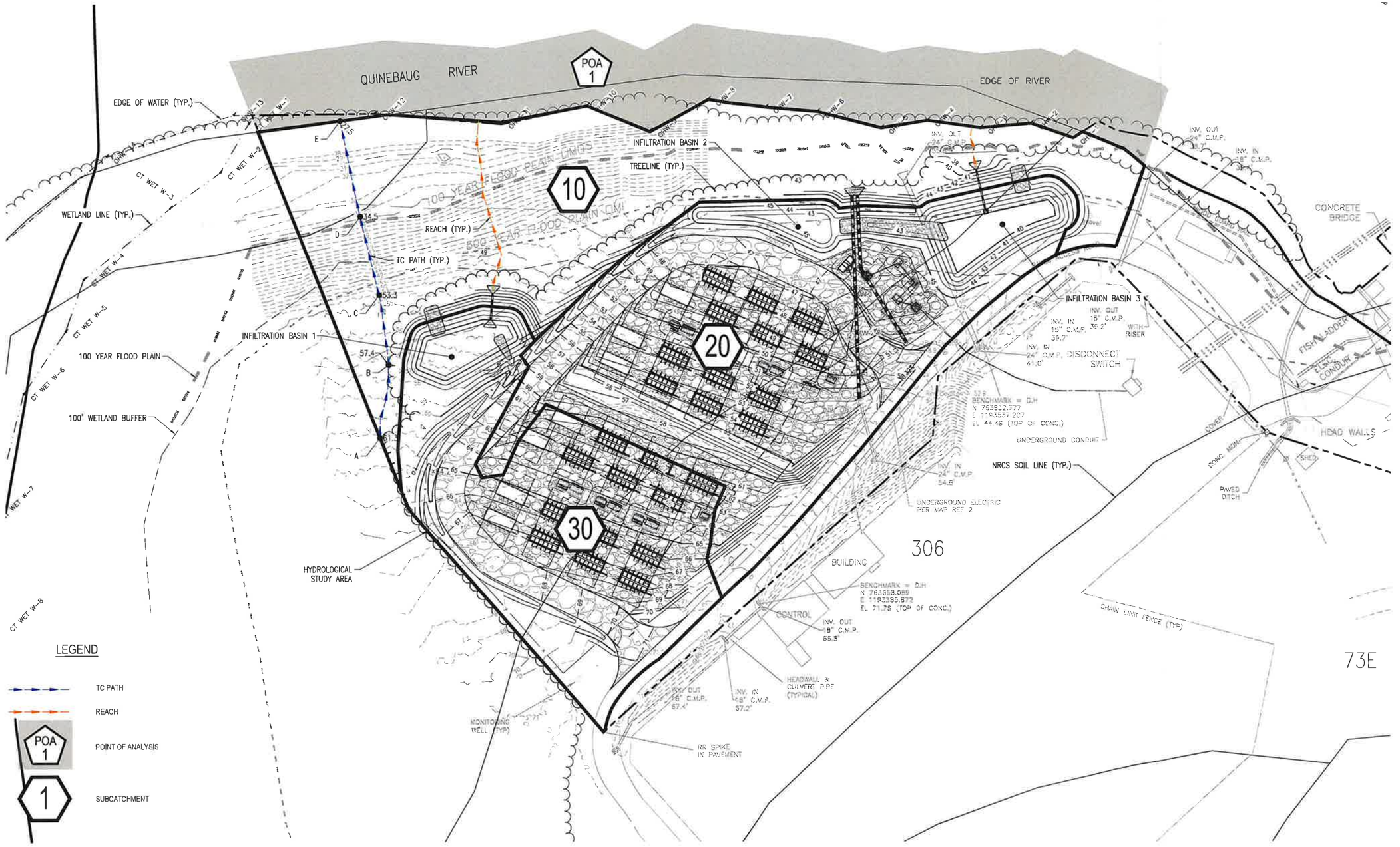
TUNNEL JET
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

PROJECT NUMBER: 120-0319

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
	07/03/24	NSB	BLS	SITE USE PLAN

SCALES STATED ON DRAWINGS ARE VALID ONLY WHEN PLOTTED ARCH D 24" X 36"

W-2.0
POST-DEVELOPMENT WATERSHED PLAN



LEGEND

- TC PATH
- REACH
- POA 1 — POINT OF ANALYSIS
- 1 — SUBCATCHMENT

N

POST-DEVELOPMENT WATERSHED PLAN

SCALE: 1" = 30'

0 30' 60'

EXHIBIT 10

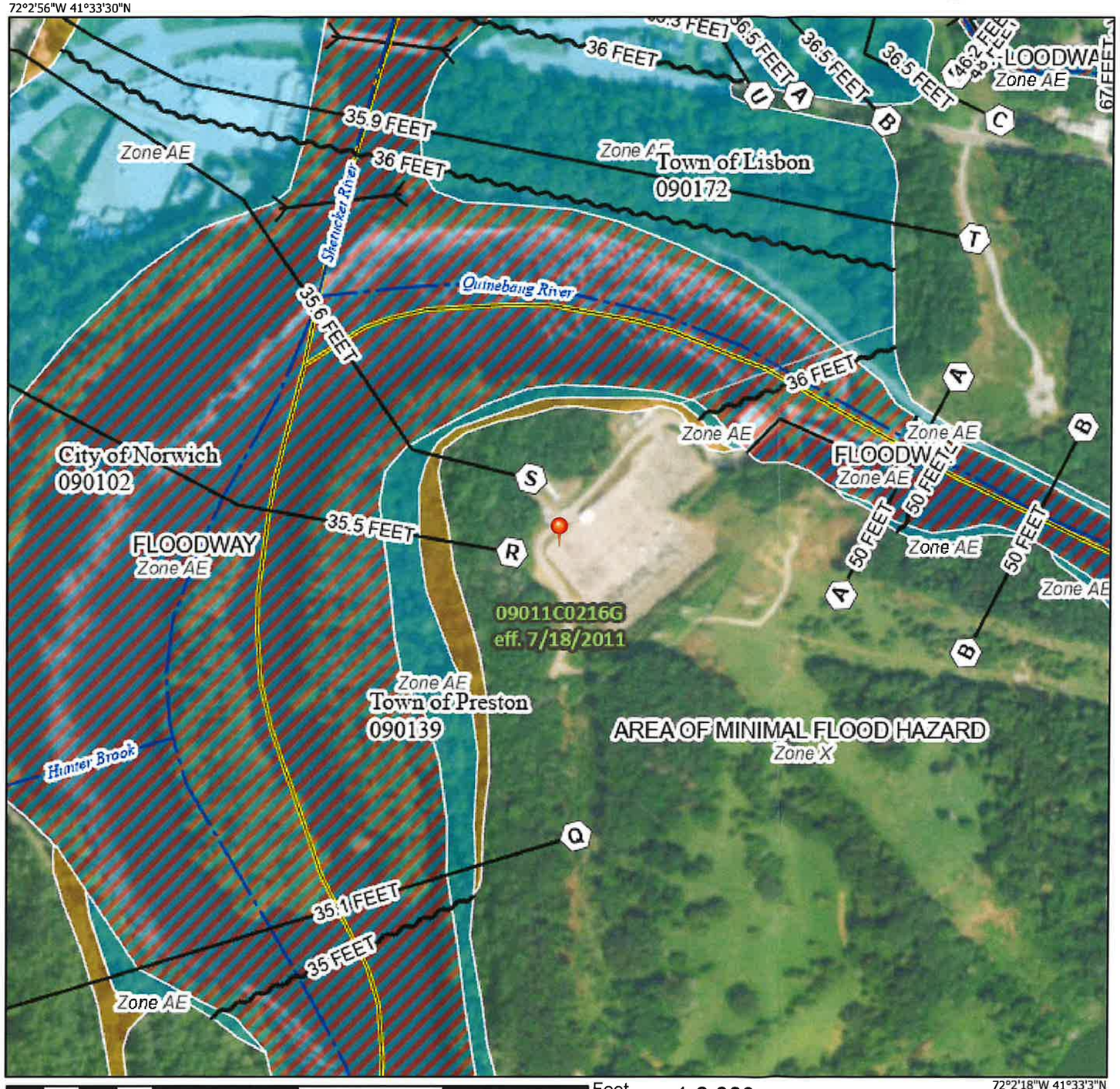
Exhibit 10

FEMA Mapping

National Flood Hazard Layer FIRMette

FEMA

72°2'56"W 41°33'30"N



0 250 500 1,000 1,500 2,000 Feet

1:6,000

72°2'18"W 41°33'3"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

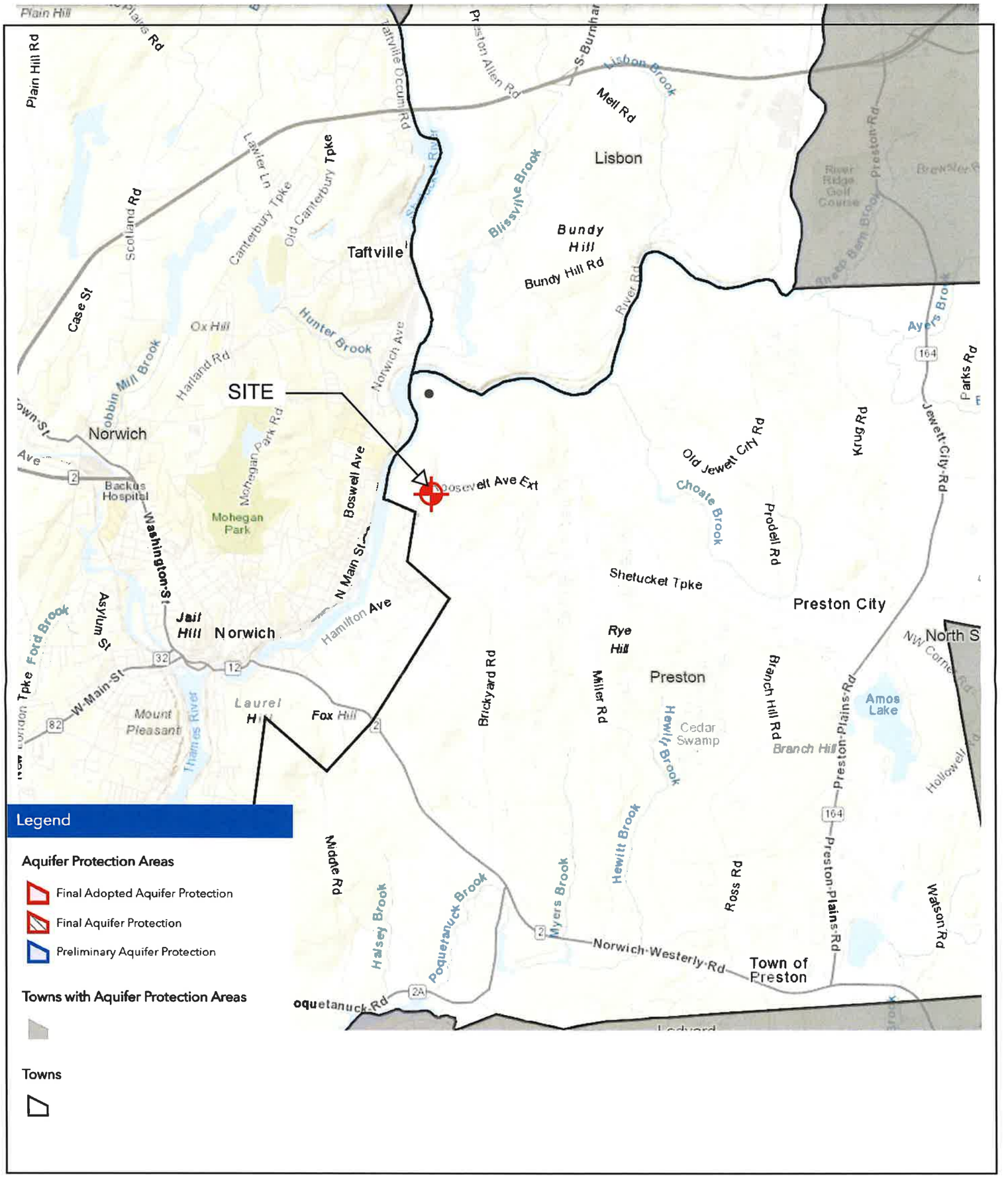
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/9/2022 at 2:47 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

EXHIBIT 11

Exhibit 11

Aquifer Protection and Water Quality Maps



Date: 07-05-2024

EXHIBIT 11

Aquifer Protection Areas Map
72 Roosevelt Ave Ext
Preston, CT

Data Source: CTDEEP Aquifer Protection Areas

New Leaf Energy
55 Technology Drive
Suite #102
Lowell, MA 01851

WATER QUALITY CLASSIFICATIONS
PRESTON, CT

SURFACE WATER QUALITY CLASSES

A	A
AA	AA
B, B*	B, B*
SA	SA
SB	SB

NOTES:
Surface Water Class fications beginning with S refers to Coastal and Marine Surface Water
B* is a subset of Class B where no direct wastewater discharges are allowed either in those
consistent with Class AA, A, and SA surface waters

GROUND WATER QUALITY CLASSES

GA (white background)
GAA, GAAs
GA, GAA may not meet current standards
GB
GC

Area of Contribution to Public Supply Well

Final Aquifer Protection Area (Level A)
Major Basin Boundary

EXPLANATION

WATER QUALITY CLASSIFICATIONS (WQC) MAPS are one of the elements of the Water Quality Standards (WQS) for the State of Connecticut. The WQS are a part of Connecticut's clean water program and are essential for protecting and improving water quality. The WQS follow the principles of Connecticut's Clean Water Act which is in Chapter 446K of the Connecticut General Statutes. The WQS provide policy guidance in many areas, for example decisions on acceptable discharges to water resources, siting of landfills, remediation or prioritization of municipal sewerage system projects. The first two elements of the WQS are the Standards, which set an overall policy for management of water quality, and the Criteria, which are descriptive and numerical standards that describe the allowable parameters and goals for various water quality classifications. A discussion of these two elements is found on the Water Quality Standards document available on the CT DEEP website. The third element is the Classifications and the Water Quality Classification Maps which show the Classification assigned to each surface and groundwater resource throughout the State. The WQS are adopted using a public participation process. The WQC maps are also adopted using a public participation process that get through hearings separately from the Standards and Criteria hearings. Revision and adoption of the WQC data occurs in accordance with the public participation procedures contained in Section 22a-426 of the Connecticut General Statutes. Ground WQC is subject to Connecticut regulations and changes must be reviewed and adopted. All changes to the Surface WQC receive an adoption process which is subject to federal review and approval in addition to CT regulation. The adoption dates for the WQC by major drainage basin are: Housatonic River, Thames River and Southwest Coastal Basins - March 1998; Connecticut River and South Central Coastal Basins - February 1993; Thames River, Pawcatuck River and Southeast Coastal Basins - December 1996. Surface Water Classifications do not change after the adoption date until the next review occasion. Ground Water Classifications may change after the adoption date under specific circumstances. The map may have more than one WQC adoption date because a town may be in more than one major drainage basin.

SURFACE WATERS in Connecticut are divided into freshwater classified as AA, A, B or B* and saline waters classified as SA or SB. Class AA designated uses are existing or proposed drinking water supplies, habitat for fish and other aquatic life and wildlife, recreation, and water supply for industry and agriculture. Class A designated uses are habitat for fish and other aquatic life and wildlife, potential drinking water supplies, recreation, navigation, and water supply for industry and agriculture. Class SA designated uses are habitat for marine fish, other aquatic life and wildlife, shellfish harvesting for direct human consumption, recreation, industrial water supply, and navigation. Class B designated uses are habitat for fish and aquatic life and wildlife, recreational activities, navigation, industrial and agricultural water supply. Class B*, applicable to Candlewood Lake, is a subset of Class B and is identical in all ways to the designated uses, criteria and standards for Class B waters except for the restriction on direct discharges. Class SB designated uses are habitat for marine fish and aquatic life and wildlife, commercial shellfish harvesting, recreation, industrial water supply, and navigation.

Surface waters which are not specifically classified shall be considered as Class A or Class AA. Surface waters in GA ground water areas are assumed Class A or Class SA unless otherwise indicated. Surface waters in GAA ground water areas are assumed Class AA unless otherwise indicated.

On the WQC map a surface water quality goal of A is represented by blue colored water bodies. Surface water quality goal of AA is represented by purple colored water bodies. Surface water quality goal of B is represented by gold colored water bodies.

GROUND WATERS in Connecticut are classified as GAA, GA, GB and GC. Class GAA designated uses are existing or potential public supply of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. The Class GAAs is a subclass to GAA for ground water that is tributary to a public water supply reservoir. The area of contribution to a public water supply well is represented by a 500-foot radius around the well and is assumed to be Class GAA unless otherwise classified. Class GA designated uses are existing private and potential public or private supplies of water suitable for drinking without treatment and baseflow for hydraulically-connected surface water bodies. All ground waters not specifically classified are considered as Class GA. Class GB designated uses are industrial process water and cooling waters and baseflow for hydraulically-connected water bodies and is presumed not suitable for human consumption without treatment. Class GC designated uses are assimilation of discharges authorized by the Commissioner pursuant to Section 22a-430 of the General Statutes.

On the WQC map GA is represented by white colored land areas. Class GAA and class GAAs are represented by blue colored land areas. The area of contribution to a public water supply well is shown by a blue cross-hatch overprint. A notation of GAA followed by a state abbreviations indicates a watershed that contributes to the public water supply for a state other than Connecticut. Class GA or Class GAA areas that currently may not be meeting the GA or GAA standards are represented on the WQC maps by tan colored land areas. Class GB is represented by green colored land areas. Class GC is represented by magenta colored land areas.

FINAL AQUIFER PROTECTION AREAS (Level A) are included on the WQC maps for informational purposes. These areas are anticipated to be reclassified GAA during the next major basin updates, subject to public participation. The Aquifer Protection Program helps protect Connecticut's public drinking water resources by delineating aquifer protection areas (also called wellhead protection areas) for public supply wells and establishing land use regulations within these areas. These areas represent the land area contributing ground water to active public water supply wells or well fields that serve more than 1000 people and are set in sand and gravel aquifers (stratified drift deposits).

DATA SOURCES

WATER QUALITY CLASSIFICATIONS DATA – Water quality classifications shown on this map are based on information from the following digital spatial datasets that are typically shown together – Ground Water Quality Classifications Poly, Surface Water Quality Classifications Line, and Surface Water Quality Classifications Poly. The map legend above reflects the contents of these three data sources. These WQC data were initially compiled on 1:24,000-scale 7.5 minute USGS topographic quadrangle maps and later digitized at 1:24,000 scale. For example, the Surface Water Quality Classifications Line and Surface Water Quality Classifications Poly digital data assigns surface water quality classifications to water bodies such as rivers, streams, reservoirs, lakes, ponds and coves found in 1:24,000-scale hydrography data available from CT DEEP. The hydrography may not include all the waterbodies in Connecticut. The Ground Water Quality Classifications Poly data assigns ground water quality classifications at 1:24,000 scale to the remaining land areas in Connecticut.

AQUIFER PROTECTION AREA DATA – Aquifer Protection Areas shown on this map are from the Aquifer Protection Area digital dataset which contains polygon data intended to be used at 1:24,000 scale. The dataset contains regulated areas classified as Level A Aquifer Protection Areas (Final) and Level B Aquifer Protection Area (Preliminary). The Level B areas are not shown on the WQC maps. The data was collected from 1991 to the present and is actively updated as Final area mapping replaces earlier Preliminary areas. The Aquifer Protection Areas are delineated by the individual water companies meeting the well fields and submitted to the CT DEEP for approval. Preliminary mapping provides a general estimate of the area contributing ground water to the well field. Final mapping is based on extensive site-specific, detailed modeling of the ground-water flow system. CT DEEP may adjust Final area boundaries to be consistent with 1:24,000 scale topography and base map data where appropriate during the approval process.

MAJOR DRAINAGE BASIN DATA – Major drainage basins shown on this map are from Major Basin Line data developed by CT DEEP and intended to be used at 1:24,000 scale.

BASE MAP DATA – Based on data originally from 1:24,000-scale USGS 7.5 minute topographic quadrangle maps published between 1969 and 1992. It includes political boundaries, railroads, airports, hydrography, geographic names and geographic places. Streets and street names are from Tele Atlas,® copyrighted data. Base map information is neither current nor complete.

RELATED INFORMATION
This map is intended to be printed at its original dimensions in order to maintain the 1:24,000 scale (1 inch = 2000 feet).
WATER QUALITY STANDARDS – Go to the CT DEEP website for a summary and the full text of the "Water Quality Standards" and for other information on water quality.
AQUIFER PROTECTION AREAS – Go to the CT DEEP website for more information.

ADOPTED DATES

Water Quality Standards
February 25, 2011

Thames River, Pawcatuck River and Southeast Coastal Basins: December 1996

Connecticut River and South Central Coastal Basins: February 1993

Housatonic River, Hudson River and Southwest Coastal Basins: March 1999

MAJOR BASINS
1. Pawcatuck
2. Southeast Coast
3. Thames
4. Connecticut
5. South Central Coast
6. Housatonic
7. Southwest Coast
8. Hudson

MAP LOCATION

SCALE 1:24,000 (1 inch = 2000 feet) when maps is printed at intended size

STATE OF CONNECTICUT
DEPARTMENT OF
ENERGY & ENVIRONMENTAL PROTECTION
79 Elm Street
Hartford, CT 06106-5127

Map created by CT DEEP
October 2018
Maps are not to be used
Printed from digital data

SPRAGUE
FRANKLIN
LISBON
VOLUNTOWN
GRISWOLD
NORWICH
PRESTON
MONTVILLE
LEDYARD
NORTH STONINGTON
STONINGTON
WATERFORD

EXHIBIT 12

Exhibit 12

SHPO Project Review and Findings

Connecticut

State Historic Preservation Office
Department of Economic and Community Development

August 2, 2022

Mr. Brandon Smith
Borrego Solar Systems, Inc.
55 Technology Drive, Suite 102
Lowell, MA 01851
(sent via email only to bsmith@borregosolar.com)

Subject: Tunnel Jet BESS
72 Roosevelt Avenue Extension
Preston, Connecticut

Dear Mr. Smith:

The State Historic Preservation Office (SHPO) has reviewed the potential effects of the referenced project on historic properties. The proposed project consists of the installation of a 17-Mw energy storage system that is comprised of battery units, inverters, transformers, interconnection equipment, fencing, and an access gate. Because the proposed project will require a Stormwater Discharge permit issued by DEEP through the authority of the Environmental Protection Agency, it is subject to review by this office pursuant to Section 106 of the National Historic Preservation Act.

There are no properties listed on the National Register of Historic Places recorded within or in the immediate vicinity of the Area of Potential Effects (APE) for this project. However, several previously recorded archeological sites have been reported in the general vicinity of the APE. Based on the known archaeological resources in the vicinity and the environmental characteristics of the project site, it is SHPO's opinion that intact and well-drained soils within the project area have an elevated potential to contain significant archaeological resources. We are therefore requesting that a professional archaeological assessment survey be completed prior to construction. Areas that will not be developed do not need to be tested. Subsurface testing should assess all areas of anticipated ground disturbance that are considered to have a moderate/high sensitivity for containing significant archeological deposits unless sufficient research or fieldwork documents that this level of effort is unwarranted. All work should be in compliance with our *Environmental Review Primer for Connecticut's Archaeological Resources* and no construction or other project-related ground disturbance should be initiated until SHPO has had an opportunity to review and comment upon the requested survey. A list of qualified consultants is attached for your convenience.

SHPO appreciates the opportunity to comment upon this project and we look forward to continuing consultation. Do not hesitate to contact Cory Atkinson, Staff Archaeologist and Environmental Reviewer, for additional information at (860) 500-2458 or cory.atkinson@ct.gov.

Sincerely,

Jonathan Kinney

Jonathan Kinney
State Historic Preservation Officer

May 12, 2023

Mr. David George
Heritage Consultants, LLC
830 Berlin Turnpike
Berlin, CT 06037
(sent only via email to dgeorge@heritage-consultants.com)

Subject: Quinebaug Falls Site Data Recovery Technical Proposal
17-Mw Tunnel BESS Project
Preston, Connecticut

Dear Mr. George:

The Connecticut State Historic Preservation Office (SHPO) reviewed *Technical and Cost Proposal for Data Recovery Excavations at the Quinebaug Falls Site Associated with the Proposed FirstLight 17-Mw Tunnel BESS Project at 72 Roosevelt Avenue Extension in Preston, Connecticut* (Data Recovery Plan), dated April 20, 2023. The Data Recovery Plan was prepared by Heritage Consultants, LLC (Heritage) for the referenced project in response to a letter from our office dated March 24, 2023. As stated in prior correspondence, SHPO concurs that the Quinebaug Falls Site is eligible for listing on the National Register of Historic Places (NRHP) and has the potential to yield significant information about the settlement pattern and culture of people utilizing the Quinebaug River drainage through the Middle and Late Woodland Periods. SHPO also understands that although impacts to the site cannot be avoided.

SHPO has reviewed the general research framework prepared by Heritage and finds the research themes presented for the analysis of Quinebaug Fall Site to be sufficient. Further, the proposed field methodologies are commensurate with the site sizes, artifact densities, and research questions described in the technical proposal. SHPO understands that the proposed data recovery plan includes the removal of vegetation from the site area, ground-penetrating radar survey, hand excavation of 200 square meters (four percent of the site area), and soil stripping/cultural feature documentation. The data recovery plan also includes laboratory analysis procedures, an unanticipated discoveries plan, and artifact curation plan. SHPO concurs with the substance of the data recovery plan and finds it consistent with the standards set forth in the *Environmental Review Primer for Connecticut's Archaeological Resources*. SHPO recognizes that the estimated level of effort may have to be re-evaluated in the field based on what may be discovered. If needed, SHPO requests that substantial deviations from the proposed fieldwork be coordinated with this office. Finally, SHPO requests the development and professional implementation of a Memorandum of Agreement (MOA) prior to initiation of the data recovery. SHPO requests that the MOA include the accepted Data Recovery Plan as well as a stipulation providing for the development of a comparative analysis of contemporaneous sites within the Quinebaug River drainage described in a letter from our office dated March 24, 2023.

SHPO appreciates the cooperation of all interested parties in the professional management of Connecticut's archeological resources. We are available, as needed, for technical assistance or guidance as the project moves forward. For additional information, please contact Cory Atkinson, Environmental Reviewer, at (860) 500-2458 or cory.atkinson@ct.gov.

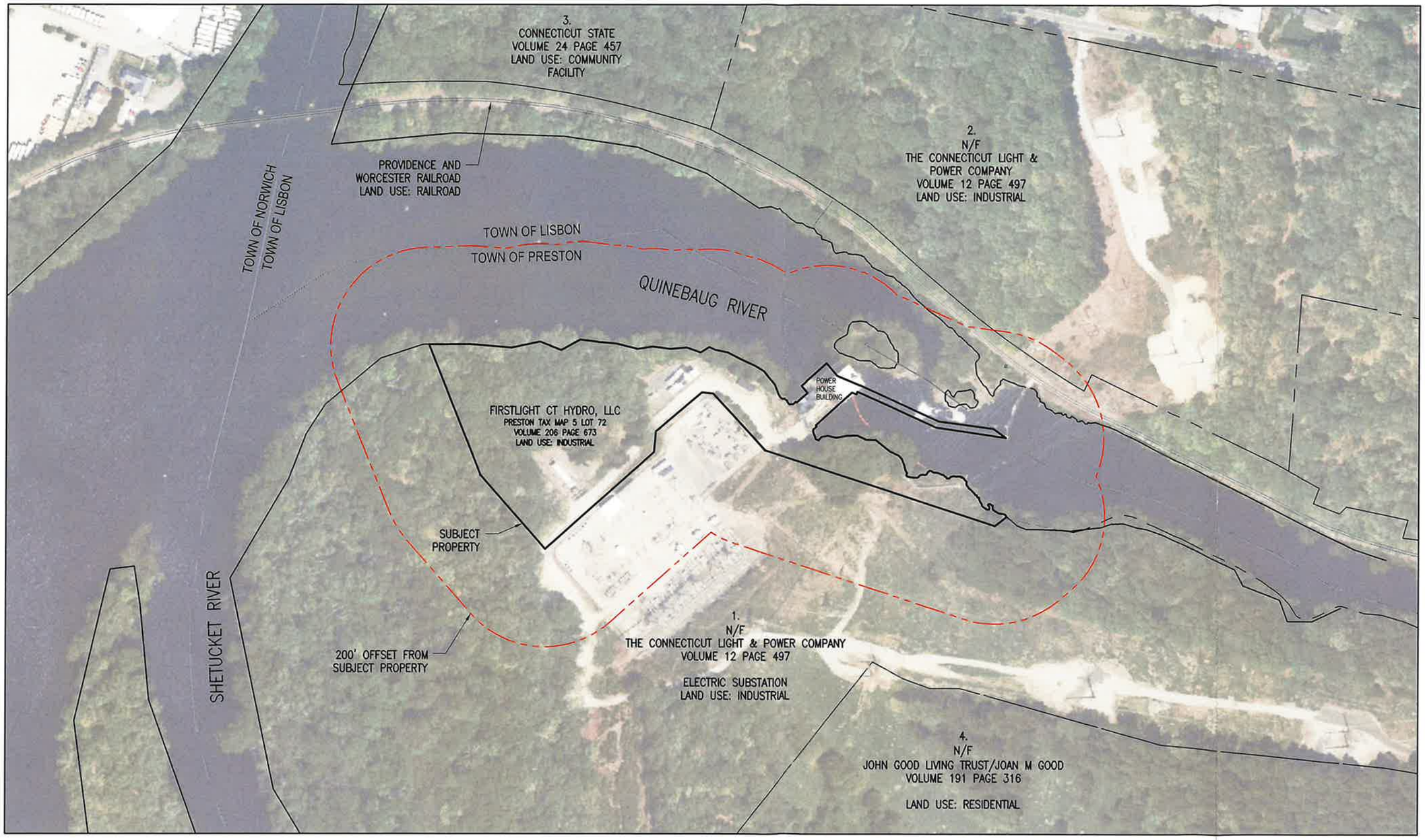
Sincerely,

Jonathan Kinney
State Historic Preservation Officer

EXHIBIT 13

Exhibit 13

Adjacent Land Owners and Use Plan



ADJACENT LAND OWNERS AND USE PLAN

SCALE: 1" = 200'

0 200' 400'

new leaf energy
55 TECHNOLOGY DRIVE, SUITE 102
LOWELL, MA 01851
PHONE: (888) 838-6273
FAX: (888) 843-6778
WWW.NEWLEAFENERGY.COM

TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

PROJECT NUMBER: 120-0319

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
1	01/24/23	CG	BS	LAND OWNER USE PLAN

SCALE:
VALID ONLY WHEN PLOTTED
ANSI FULL BLEED B 11" X 17"

EXHIBIT 14

Exhibit 14

Sound Level Modeling Report

SOUND LEVEL MODELING REPORT

Tunnel Jet Energy Storage Project
Preston, Connecticut

Prepared for:

New Leaf Energy, Inc
55 Technology Drive, Suite 102
Lowell, MA 01851

Prepared by:

Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, MA 01754

April 19, 2024

TABLE OF CONTENTS

LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

The Tunnel Jet Energy Storage Project (the Project) is a proposed energy storage facility with a capacity of approximately 17 megawatts (MW) in Preston, Connecticut. The Project is being developed by New Leaf Energy, Inc (New Leaf). Epsilon Associates Inc. (Epsilon) has been retained by New Leaf to conduct a sound level modeling study for this Project. This report presents results of the sound level modeling from the proposed energy storage system in Preston.

Computer modeling was used to predict worst-case future L_{eq} sound levels from the Project. The Project will include 30 energy storage containers and 6 inverters. The highest predicted project only L_{eq} sound level at the Project property line is 48 dBA which occurs south of the Project parcel. This is below the most restrictive State of Connecticut noise control regulation limit for industrial sources of 51 dBA.

2.0 INTRODUCTION

The proposed Project will consist of 30 energy storage containers and 6 inverters. Figure 2-1 shows the location of the Project over aerial imagery.

This report presents the findings of a sound level modeling analysis for the Project. The Project components were modeled in CadnaA using sound data provided by New Leaf or calculated by Epsilon. The results of this analysis are found within this report.

Tunnel Jet Energy Storage Project **Preston, Connecticut**

Epsilon

Figure 2-1
Aerial Locus Map

3.0 SOUND TERMINOLOGY

There are several ways in which sound levels are measured and quantified. All of them use the logarithmic decibel (dB) scale. The following information defines the sound level terminology used in this analysis.

The decibel scale is logarithmic to accommodate the wide range of sound intensities found in the environment. A property of the decibel scale is that the sound pressure levels of two or more separate sounds are not directly additive. For example, if a sound of 50 dB is added to another sound of 50 dB, the total is only a 3-decibel increase (53 dB), which is equal to doubling in sound energy, but not equal to a doubling in decibel quantity (100 dB). Thus, every 3-dB change in sound level represents a doubling or halving of sound energy. The human ear does not perceive changes in the sound pressure level as equal changes in loudness. Scientific research demonstrates that the following general relationships hold between sound level and human perception for two sound levels with the same or very similar frequency characteristics[1]:

- 3 dBA increase or decrease results in a change in sound that is just perceptible to the average person,
- 5 dBA increase or decrease is described as a clearly noticeable change in sound level, and
- 10 dBA increase or decrease is described as twice or half as loud.

Another mathematical property of decibels is that if one source of sound is at least 10 dB louder than another source, then the total sound level is simply the sound level of the higher-level source. For example, a sound source at 60 dB plus another sound source at 47 dB is equal to 60 dB.

A sound level meter (SLM) that is used to measure sound is a standardized instrument.[2] It contains "weighting networks" (e.g., A-, C-, Z-weightings) to adjust the frequency response of the instrument. Frequencies, reported in Hertz (Hz), are detailed characterizations of sounds, often addressed in musical terms as "pitch" or "tone". The most commonly used weighting network is the A-weighting because it most closely approximates how the human ear responds to sound at various frequencies. The A-weighting network is the accepted scale used for community sound level measurements; therefore, sounds are frequently reported as detected with a sound level meter using this weighting. A-weighted sound levels emphasize middle frequency sounds (i.e., middle pitched – around 1,000 Hz), and de-emphasize low and high frequency sounds. These sound levels are reported in decibels designated as "dBA". The C-weighting network has a nearly flat response for frequencies between 63 Hz and 4,000 Hz and is noted as dBC. Z-weighted sound levels are measured sound levels without any weighting curve and are otherwise referred to as

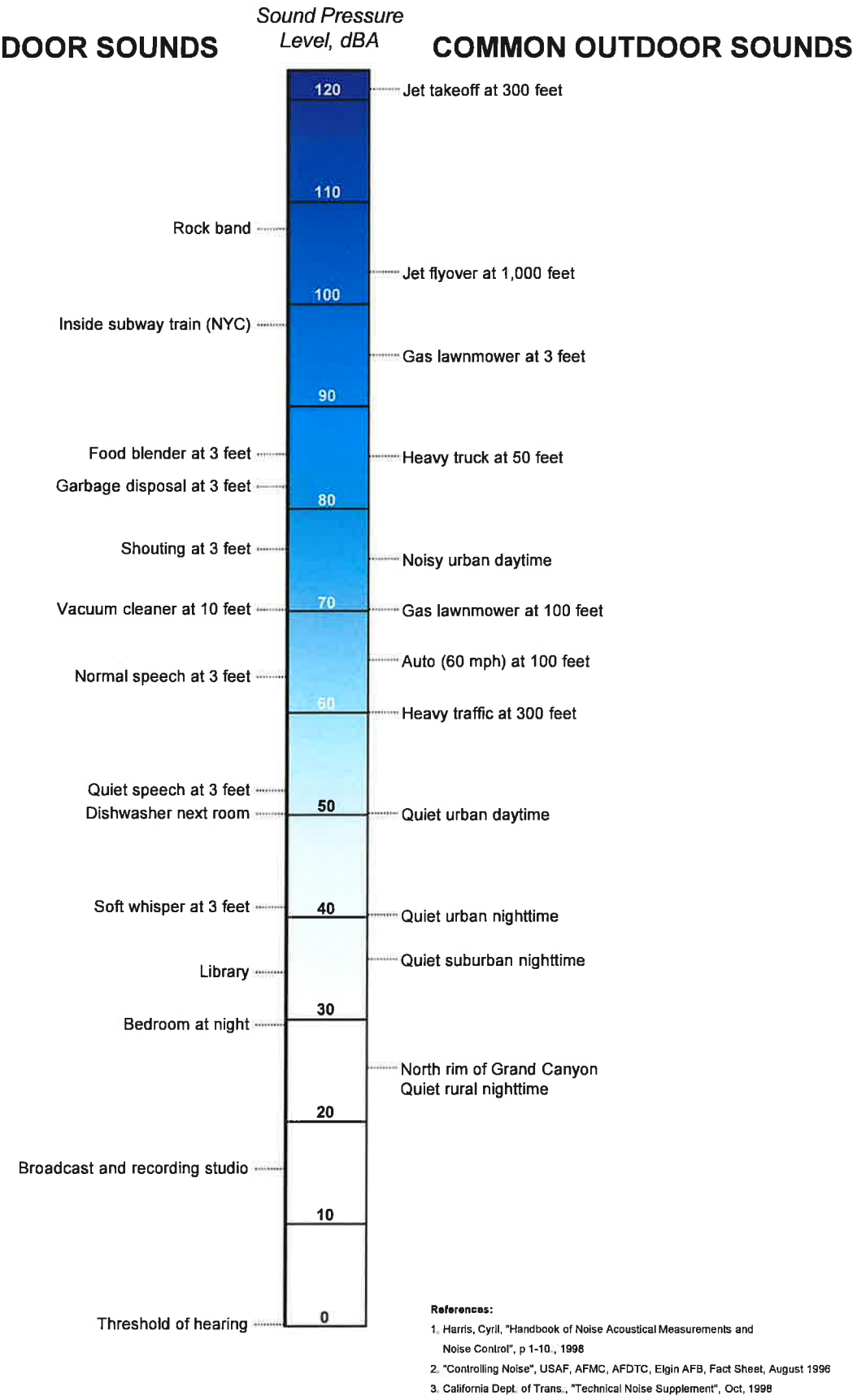
---

1 Bies, David, and Colin Hansen. 2009. *Engineering Noise Control: Theory and Practice*, 4th Edition. New York: Taylor and Francis.

2 *American National Standard Specification for Sound Level Meters*, ANSI S1.4-1983 (R2006), published by the Standards Secretariat of the Acoustical Society of America, Melville, NY.

"unweighted". Sound pressure levels for some common indoor and outdoor environments are shown in Figure 3-1.

Sounds in our environment vary with time. There are several sound level metrics that are reported in community sound monitoring. The requirements in the Connecticut noise control regulation rely on the L_{eq} sound level metric. The L_{eq} is referred to as the equivalent level and is the level of hypothetical steady state sound that would have the same energy (i.e., the same time-averaged mean square sound pressure) as the actual fluctuating sound observed. The equivalent level is designated L_{eq} and is typically A-weighted. The equivalent level represents the time average of the fluctuating sound pressure, but because sound is represented on a logarithmic scale and the averaging is done with linear mean square sound pressure values, the L_{eq} is mostly determined by loud sounds if there are fluctuating sound levels.



References:

1. Harris, Cyril, "Handbook of Noise Acoustical Measurements and Noise Control", p 1-10., 1998
2. "Controlling Noise", USAF, AFMC, AFDTC, Elgin AFB, Fact Sheet, August 1996
3. California Dept. of Trans., "Technical Noise Supplement", Oct, 1998

Epsilon Associates Inc.

Figure 3-1

Common Indoor and Outdoor Sound Levels

4.0 NOISE REGULATIONS

The Project is located on industrial zoned land within the Town of Preston and is required to comply with the State of Connecticut noise control regulation issued by the Connecticut Department of Environmental Protection. Industrial zoned land corresponds to a Class C designation in the Connecticut noise control regulation. Section 22a-69-3.5(a) of the regulation states:

> No person in a Class C Noise Zone shall emit noise exceeding the levels stated herein and applicable to adjacent Noise Zones.

The sound level limits for Class C sources are shown in Table 4-1.

Table 4-1 Connecticut Noise Limits for Industrial Sources

Emitter's Zone: Class C (Industrial)	
Receptor's Zone	**Maximum Level (dBA)**
Class C (Industrial)	70
Class B (Commercial)	66
Class A (Residential) / Day	61
Class A (Residential) / Night	51

Since the project may be operational during the night, the most restrictive residential nighttime limit of 51 dBA was applied for evaluating Project sound levels at the property line.

5.0 MODELED SOUND LEVELS

5.1 Sound Sources

The primary sources of sound from the Tunnel Jet Energy Storage facility will be the inverters and energy storage containers. Sound power level or sound pressure level data for this equipment was provided by New Leaf. Sound level data and source quantities are presented in Table 5-1.

Table 5-1 Sound Level Data

Sound Source	Sound Power (per unit)	Number of Units Modeled
Inverter[1]	94 dBA	6
BESS Unit[2]	90 dBA	30

Notes: 1) SMA SCS 3950-UP-US unit.
2) Hithium ESS Container 1.0 10P384S2800Ah

5.2 Modeling Methodology

The sound impacts associated with the proposed energy storage systems were predicted using the CadnaA sound level calculation software developed by DataKustik GmbH. This software uses the ISO 9613-2 international standard for sound propagation.[3] The software accounts for topography, ground attenuation, multiple building reflections (if applicable), drop-off with distance, and atmospheric absorption. The CadnaA software allows for octave band calculation of sound from multiple sources as well as computation of diffraction.

Inputs and significant parameters employed in the model are described below.

- *Project Layout:* This analysis is for the layout provided to Epsilon on November 20, 2023. The proposed Project layout is shown in Figure 5-1.
- *Modeling Grid:* A modeling grid with 5-meter spacing was calculated for the entire region surrounding the Project. The grid was modeled at a height of 1.5 meters above ground level which is the approximate ear height of a standing adult. The resulting sound isopleths are shown in Figure 5-2.
- *Terrain Elevation:* Elevation contours for the modeling domain were imported into CadnaA which allowed for consideration of terrain shielding where appropriate. The terrain height contour elevations for the modeling domain were generated from elevation information derived from the National Elevation Dataset (NED) developed by

[3] *Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation,* International Standard ISO 9613-2:1996 (International Organization for Standardization, Geneva, Switzerland, 1996).

the U.S. Geological Survey. Grading contour lines for the future project site were provided by New Leaf.

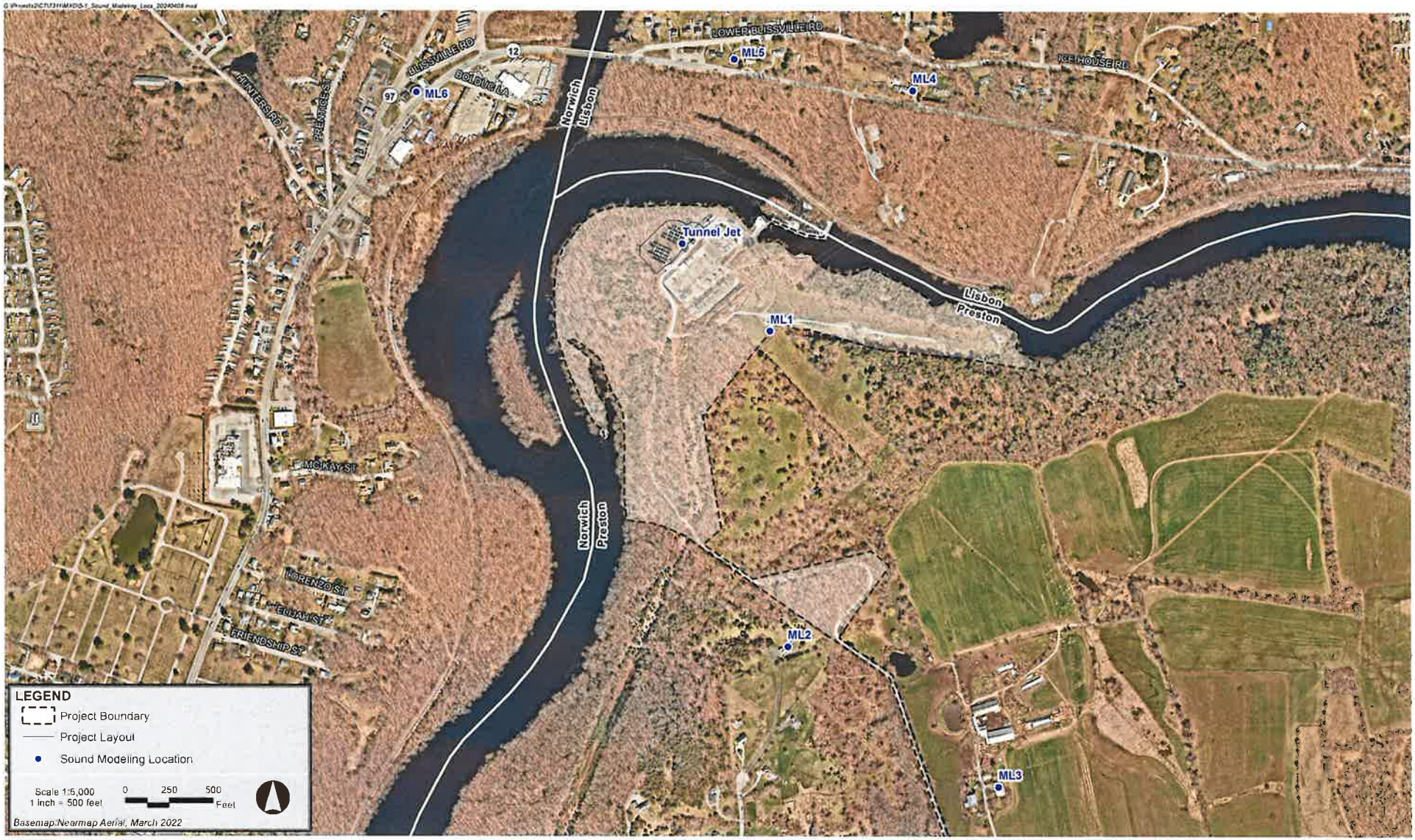
- *Source Sound Levels:* Sound pressure levels used in the modeling were described in Section 5.1. These sound power levels were provided to Epsilon by New Leaf or calculated from sound pressure levels provided by New Leaf.
- *Ground Attenuation:* Consistent with the standard, the model allows inputs between 0 (hard ground) and 1 (porous ground). Spectral ground absorption was calculated using a G-factor of 0 for the Quinebaug River and the BESS site and 0.5 for the rest of the area. An absorption of 0.5 corresponds to "mixed ground" consisting of both hard and porous ground cover. This is a conservative approach as the majority of the area is heavily vegetated.

Several modeling assumptions inherent in the ISO 9613-2 calculation methodology, or selected as conditional inputs by Epsilon, were implemented in the CadnaA model to ensure conservative results (i.e., higher sound levels), and are described below:

- All modeled sources were assumed to be operating simultaneously and at their maximum load corresponding to the greatest sound level impacts. Additionally, a 2 dBA uncertainty was added to all modeled sound sources.
- As per ISO 9613-2, the model assumed favorable conditions for sound propagation, corresponding to a moderate, well-developed ground-based temperature inversion, as might occur on a calm, clear night or equivalently downwind propagation.
- Meteorological conditions assumed in the model (T=10°C/RH=70%) were selected to minimize atmospheric attenuation in the 500 Hz and 1 kHz octave bands where the human ear is most sensitive.
- No additional attenuation due to tree shielding, air turbulence, or wind shadow effects was considered in the model.

5.3 Sound Modeling Locations

The Project parcel is adjacent to the Quinebaug River to the west, north, and east side of the project area. Sound levels were therefore evaluated at the south property line, and at the nearest residences. Modeling receptor locations are shown in Figure 5-1.



Tunnel Jet Energy Storage Project **Preston, Connecticut**

Figure 5-1
Sound Level Modeling Locations

5.4 Sound Level Modeling Results

A summary of the A-weighted broadband sound level modeling results for the sound sources associated with the Project at all modeling receptors are shown in Table 5-2. All modeled sound levels, as output from CadnaA, are A-weighted equivalent sound levels (L_{eq}, dBA). The predicted sound levels range from 26 to 48 dBA. The Connecticut nighttime residential limit of 51 dBA was applied at all locations. The predicted levels at all modeling locations are well below the Connecticut sound limits for industrial sources. Sound level isopleths generated from the model are presented in Figure 5-2.

Table 5-2 Sound Level Modeling Results

Modeling Location	Description	Project Only Sound Level, L_{eq} dBA
ML1	Project Property Line	48
ML2	Residence	29
ML3	Residence	26
ML4	Residence	37
ML5	Residence	46
ML6	Residence	42

Tunnel Jet Energy Storage Project **Preston, Connecticut**

Figure 5-2
Sound Level Modeling Results

6.0 CONCLUSIONS

A sound level modeling assessment was conducted for the proposed Tunnel Street Energy Storage Project. A total of 30 energy storage containers and 6 central inverters are included for this Project. Sound levels resulting from the operation of the Project were calculated at six discrete modeling points, and isopleths were generated from a grid encompassing the area surrounding the Project using the provided layout. The predicted sound levels at the modeling receptors ranged from 26 to 48 dBA which are below the Connecticut nighttime residential limit of 51 dBA.

EXHIBIT 15

Exhibit 15

FAA Notice Criteria Tool

Federal Aviation Administration

« OE/AAA

Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

Latitude:	41 Deg 33 M 17.7 S N
Longitude:	72 Deg 2 M 37.2 S W
Horizontal Datum:	NAD83
Site Elevation (SE):	70 (nearest foot)
Structure Height :	40 (nearest foot)
Traverseway:	No Traverseway (Additional height is added to certain structures under 77.9(c)) User can increase the default height adjustment for Traverseway, Private Roadway and Waterway
Is structure on airport:	(●) No ( ) Yes

Results

You do not exceed Notice Criteria.

EXHIBIT 16

Exhibit 16

Site Operations and Maintenance Plan

Operations & Maintenance Plan

Tunnel Battery Energy Storage System

Project:

Tunnel BESS LLC
For Activities At:
72 Roosevelt Avenue Extension
Preston, CT 06365

Prepared by:

New Leaf Energy
55 Technology Drive, Suite 102
Lowell, MA 01851

Dated: May 8, 2023

1.0 Services

During the Term, Contractor shall perform the following services on each System:

Description of Work	Frequency of Inspection
Battery Replacement and Installs	As defined in the Augmentation Schedule and Manufacturers Recommendations
Vegetation Management	Minimum of once per year
Gravel Access Road	Minimum of once per year
Stormwater System Inspection	Two times per year

Energy Storage electrical system will be maintained per the manufacture specific operations and maintenance plan.

2.0 Scope of Work

Electrical Work

The Battery Energy Storage Facility has been designed to meet a specific electrical output, which must be maintained. Due to natural Lithium-Ion battery degradation, this necessitates the install of additional battery segments throughout the life of the system. During initial construction and permitting, space will be reserved for these future units. When the system output necessitates installing additional batteries, the number of units to be installed and the timing will be coordinated with the Town of Preston. Installation will entail delivering the units to site, craning the units into position, mounting on existing concrete pads, and landing electrical connections.

Electrical components will be inspected and maintained per the individual manufacturer's recommendations.

Equipment Maintenance:

The battery system will require at least one annual preventative maintenance cycle that can span 1-2 weeks, as well as maintenance on a 3, 5, and 15-year cycle (see Section 7.1). Depending on the cycle, system maintenance will include inspecting and repairing all structures and enclosures, testing equipment performance, inspecting safety equipment, maintaining cooling and ventilation systems, and upgrading or maintaining the battery management system. Depending on the long-term owner's structure, this work will either be carried out in-house by local maintenance teams or will be contracted to a qualified third-party O&M company. In addition, all major components will be covered by warranties

(see Section 12.3). The component vendors will be responsible for replacing, in coordination with the facility's O&M team, failed parts that fall within the warranty terms.

Remote Monitoring: The facility will be remotely monitored 24/7 by a dedicated operations team. In the event of equipment failure or other operational concerns, the operations team will alert the local O&M team to provide a rapid response and will contact the supplier to activate a warranty claim as relevant. Depending on the long-term owner's structure, this work will either be carried out in-house by local operations teams or will be contracted out to a qualified third-party O&M company.

Vegetation Management

The site shall be inspected for evidence of erosion and riling in any slopes. If slopes are degraded, they can reduce water quality and/or divert water to unintended areas. Revegetation of slopes helps to stabilize and ensure that storm water runoff behaves as intended. Any such conditions shall be noted in the annual report for re-vegetating.

Growth of trees or other vegetation that could present a danger to the system should be noted in the annual report and removed if it presents a threat to the safe operation of the system. Vegetation growth (saplings, bush, large weeds, etc.) within the perimeter wall shall be removed. The site shall be mowed a minimum of twice per year. Outside of the energy storage facility, vegetation is allowed to grow for longer periods. Maintenance is required when:

- Erosion or riling is found
- Standing water remains longer than 72 hours after a rain event
- Vegetation die-off has occurred resulting in unstable slopes

Gravel Access Roads

Roads should be stable enough that very little sediment is released during weather events. Preventative maintenance is required to avoid erosion to the roadway or roadbed. Inspections of the roadway will check for rill erosion in the road or along the shoulders, and areas of poor drainage resulting from subgrade settlement or poor compaction. These conditions shall be noted and supported with photographs and locations as part of the annual report.

Roadways shall be inspected a minimum of once per year. Maintenance is required when:

- Erosion of the roadway or shoulders is identified
- Clean out roadside ditches when they become clogged with sediments or debris, to prevent ponding, bank overflows, and road washouts

Fill in areas of erosion or settlement with clean washed stone. If erosion is along shoulder, ensure shoulder is properly revegetated.

Stormwater Management Maintenance

Infiltration Basins

Basins only attenuate peak flows when they operate as designed, so regular maintenance is essential. Inspections shall take place after every major storm event during the first 3 months of operation, and every six months after that.

Maintenance is required when:

- Too much sediment accumulates and interferes with volume capacity,
- Trees or other shrub vegetation grow on the embankment,
- The embankment becomes denuded or otherwise presents an erosion problem,
- Animal burrows are present on the embankment, or
- Standing water remains longer than 72 hours after a rain event.

Remediation measures to be taken include:

- Remove sediments
- Repair any riling or gullying
- After removal of sediment, replace any vegetation damaged during the clean-out by reseeding or re-sodding. When reseeding, incorporate practices such as hydroseeding with a tackifier, blanket, or similar practice to ensure that no scour occurs while the seed germinate and develop root

EXHIBIT 17

Exhibit 17

Notice of Intent, Certificate of Service, and Certificates of Mailing

December 19, 2024

Dear Neighbor or Government Official:

Tunnel BESS LLC, a wholly-owned subsidiary of FirstLight Power Inc. ("FirstLight"), is writing to provide you with notice of an upcoming submission to the Connecticut Siting Council ("CSC") for a proposed Battery Energy Storage Project (the "Project") located at the site of the existing Tunnel Jet facility at 72 Roosevelt Avenue Extension in Preston. FirstLight is partnering with renewable energy developer New Leaf Energy on the Project.

About the Project

The Project would repower the existing Tunnel Jet kerosene generator system with battery storage, which would fully eliminate the carbon emissions generated onsite. This Project and others like it are critical to meeting Connecticut's goal of a zero-emissions electric supply by 2040.

Project Timeline

We anticipate that the petition for the Project will be filed with the CSC in the near future, with an anticipated approval by mid-2025. Pending receipt of all necessary approvals and equipment procurement, our goal is to begin preliminary site work in spring 2026, with construction finishing during the spring of 2027.

Contact Information

FirstLight and New Leaf Energy are committed to being good neighbors and answering any questions or addressing concerns you may have. For more information, please contact:

Sandra Brown
FirstLight Power
Sandra.Brown@FirstLightPower.com
(404) 695-0555

Eric Weinstein
New Leaf Energy
eweinstein@newleafenergy.com
(508) 654-8260

If you would like to submit comments regarding our petition to the CSC, please send them to siting.council@ct.gov, or send a letter to the following address: Melanie Bachman, Executive Director, Connecticut Siting Council, Ten Franklin Square, New Britain, CT 06051.

Sincerely,

Andy Brydges
Director, Community Relations

CERTIFICATION OF SERVICE

I hereby certify that on the 23 day of December, 2024, a copy of the foregoing letter was sent by certified mail, return receipt requested to each of the abutting property owners listed below.

Date 12/26/2024

Brandon Smith

ADJACENT PROPERTY OWNERS

	Map/Lot	Property Address	Owner(s) and Mailing Address
1.	5-0-ROO1-72A	72 ROOSEVELT AVE EXT, PRESTON, CT	CONN LIGHT & POWER COMPANY 107 SELDON ST BERLIN, CT 06037
2.	01/002/0000	652 RIVER RD, LISBON, CT	CONN LIGHT & POWER COMPANY PO BOX 270 HARTFORD, CT 06141
3.	01/001/0000	692 RIVER RD, LISBON, CT	STATE OF CONNECTICUT 692 RIVER RD, LISBON, CT 06351
4.	5-0-ROO1-68	68 ROOSEVELT AVE EXT, PRESTON, CT	JOHN GOOD LIVING TRUST % JOAN M. GOOD 68 ROOSEVELT AVE EXT, PRESTON, CT 06365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USPS 03301-9
Connecticut Light & Power
Company
107 Selden St
Berlin, CT 06037
or Instructions


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Connecticut Light & Power
Company
PO Box 270
Hartford, CT 06141
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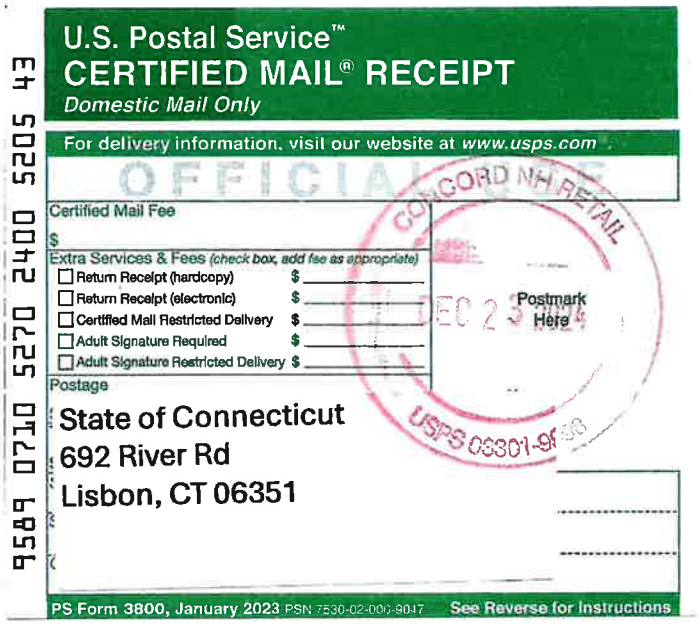
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State of Connecticut
692 River Rd
Lisbon, CT 06351
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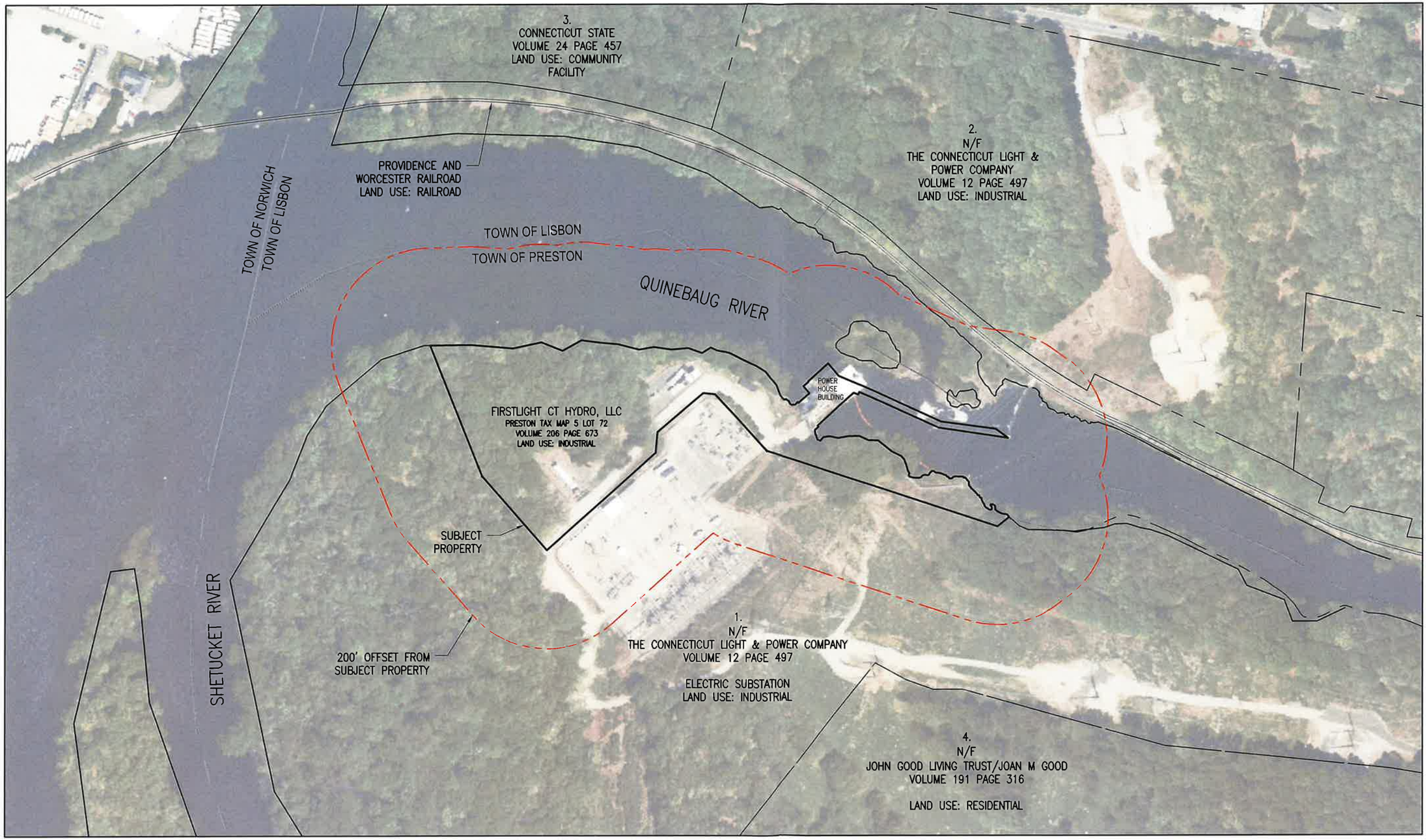
John Good Living Trust c.o. Joan M.
Good
68 Roosevelt Ave Ext
Preston, CT 06365
for Instructions



ADJACENT LAND OWNERS AND USE PLAN

SCALE: 1" = 200'

0 200' 400'

new leaf energy
55 TECHNOLOGY DRIVE, SUITE 102
LOWELL, MA 01851
PHONE: (888) 898-6273
FAX: (888) 843-6778
WWW.NEWLEAFENERGY.COM

TUNNEL BESS
72 ROOSEVELT AVE EXTENSION
PRESTON, CT 06365

PROJECT NUMBER:
120-0319

REV	DATE	DRAWN	CHECKED	RELEASE LEVEL
1	01/24/23	CG	BS	LAND OWNER USE PLAN

SCALE:
VALID ONLY WHEN PLOTTED
ANSI FULL BLEED B 11" X 17"

C:\Users\bsmith_newleafenergy\Box\Salesforce\Opportunities\Tunnel Jet - Preston, CT\Design\Tunnel Jet Working Set\01. Tunnel Jet_SUP_010523\C-1.1

December 19, 2024

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FirstLight Power
Sandra.Brown@FirstLightPower.com
(404) 695-0555

Eric Weinstein
New Leaf Energy
eweinstein@newleafenergy.com
(508) 654-8260

If you would like to submit comments regarding our petition to the CSC, please send them to siting.council@ct.gov, or send a letter to the following address: Melanie Bachman, Executive Director, Connecticut Siting Council, Ten Franklin Square, New Britain, CT 06051.

Sincerely,

Andy Brydges
Director, Community Relations

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I hereby certify that on the 23 day of December, 2024, a copy of the foregoing letter was sent by certified mail, return receipt requested to each of the entities listed below.

Date 12/26/2024

Brandon Smith

TOWN OF PRESTON

Preston Board of Selectmen First Selectwoman Sandra L. Allyn-Gauthier 389 Route 2 Preston, CT 06365	Preston Planning & Zoning Commission Town Planner, Kathy Warzecha 389 Route 2 Preston, CT 06365
Preston Conservation & Agricultural Commission Chairman Gary Piszczek 389 Route 2 Preston, CT 06365	Preston Inland Wetlands & Watercourses Inland Wetlands Agent Len Johnson 389 Route 2 Preston, CT 06365

TOWN OF LISBON

Lisbon First Selectman/Board of Selectmen First Selectman Thomas W. Sparkman Town Hall 1 Newent Rd. Lisbon, CT 06351	Lisbon Conservation Commission Chairman Richard Hamel Conservation Officer Wayne Berardi Town Hall 1 Newent Rd. Lisbon, CT 06351
Lisbon Planning & Zoning Commission Town Planner Michael Murphy Town Hall 1 Newent Rd. Lisbon, CT 06351	Lisbon Water Pollution Control Authority Chairman Kenneth Robb 1 Newent Rd. Lisbon, CT 06351

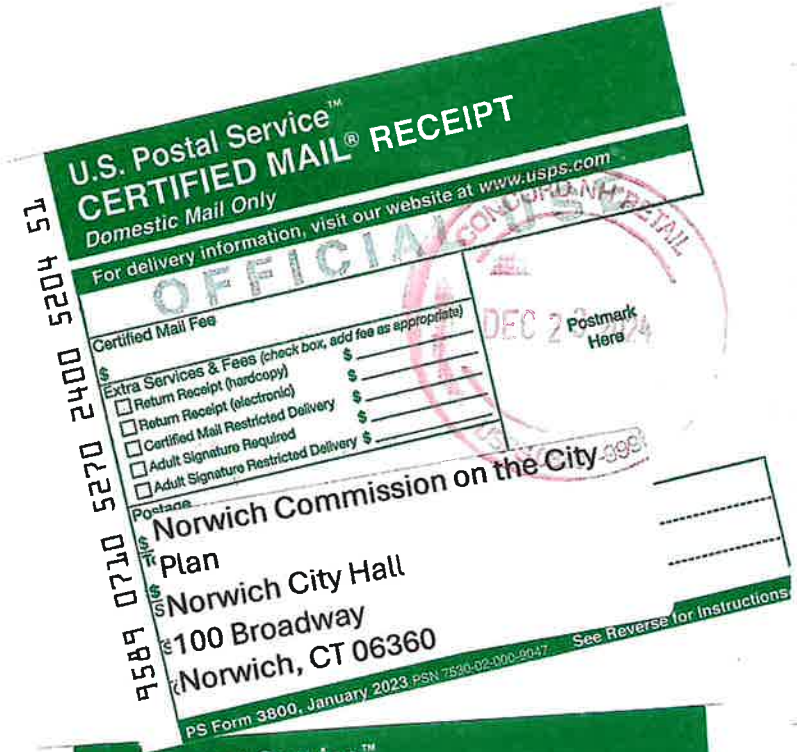
TOWN OF NORWICH

Norwich Mayors Office Mayor Peter Albert Nystrom Norwich City Hall 100 Broadway Norwich, CT 06360	Norwich Inland Wetlands and Watercourses & Conservation Commission Chairman Richard Morell Norwich City Hall 100 Broadway Norwich, CT 06360
Norwich City Council City Manager John Salomone Norwich City Hall 100 Broadway Norwich, CT 06360	Norwich Commission on the City Plan Chair Frank Manfredi Norwich City Hall 100 Broadway Norwich, CT 06360

STATE OF CONNECTICUT

Office of the Attorney General Attorney General William Tong 165 Capitol Avenue Hartford, CT 06106	State Senator Senator Heather Somers Legislative Office Building, Room 3104 300 Capitol Avenue Hartford, CT 06106
State Representative Representative Brian Lanoue Legislative Office Building, Room 4200 300 Capitol Avenue Hartford, CT 06106	Department of Energy and Environmental Protection Commissioner Katie Dykes 79 Elm Street Hartford, CT 06106
Department of Public Health Commissioner Dr. Manisha Juthani 410 Capitol Ave. Hartford, CT 06106	Council on Environmental Quality 79 Elm Street, 6th Floor Hartford, CT 06106
Department of Agriculture Commissioner Bryan Hurlburt 450 Columbus Blvd., Suite 701 Hartford, CT 06106	Public Utilities Regulatory Authority Chair Marissa Gillett Ten Franklin Square New Britain, CT 06051
Office of Policy and Management Secretary Jeffrey Beckham 450 Capitol Ave Hartford, CT 06106	Department of Consumer Protection Commissioner Bryan T. Cafferelli 450 Columbus Boulevard, Suite 901 Hartford, CT 06103
Department of Economic and Community Development Commissioner Daniel O'Keefe 450 Columbus Boulevard Hartford, CT 06103	Department of Transportation Commissioner Garrett Eucalitto 2800 Berlin Turnpike P.O. Box 317546 Newington, CT 06131-7546

Department of Emergency Services and Public Protection Ronnell A. Higgins 1111 Country Club Road Middletown, CT 06457	Department of Administrative Services Commissioner Michelle Gilman 450 Columbus Boulevard Hartford, CT 06103
Department of Labor Commissioner Dante Bartolomeo 200 Folly Brook Blvd. Wethersfield, CT 06109	



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Norwich Commission on the City Plan
Norwich City Hall
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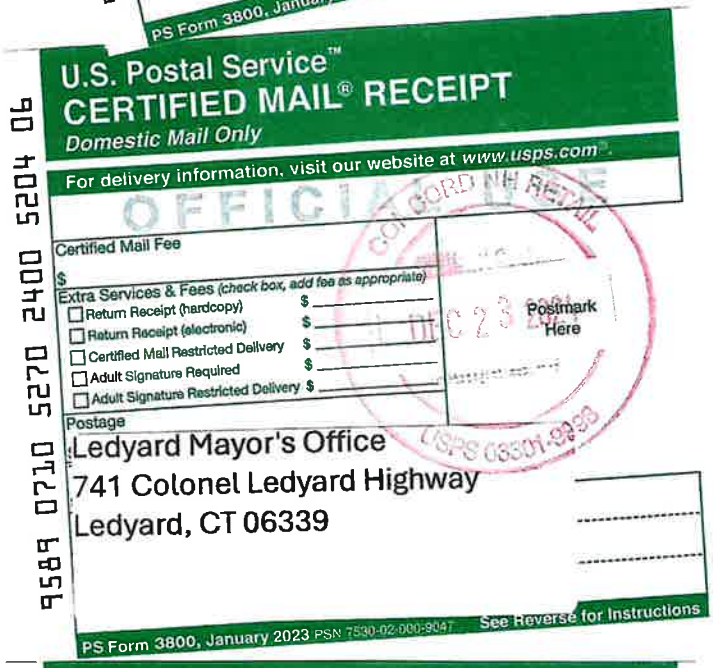

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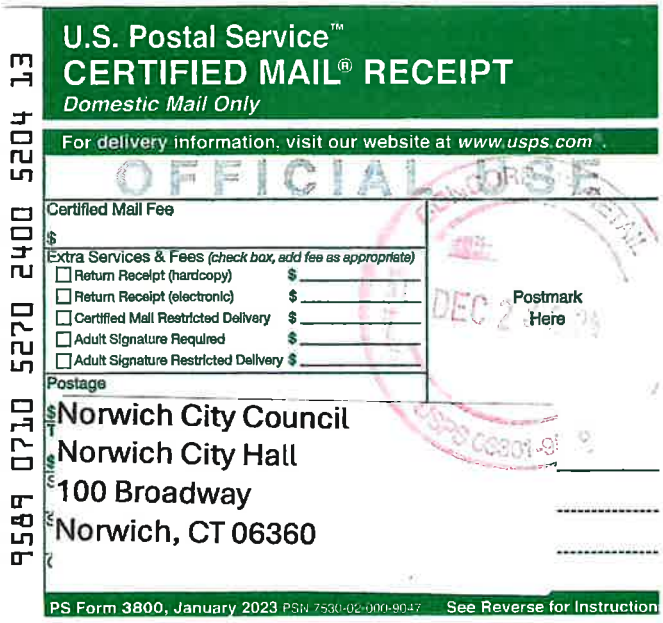

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Norwich Mayors Office
Norwich City Hall
100 Broadway
Norwich, CT 06360

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Preston, CT 06365

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Lisbon Conservation Commission
Town Hall
1 Newent Rd.
Lisbon, CT 06351

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Lisbon Planning & Zoning Commission
Town Hall
1 Newent Rd.
Lisbon, CT 06351

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Preston, CT 06365

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Lisbon, CT 06351

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Norwich Inland Wetlands and Watercourses & Conservation Commission
Norwich City Hall
100 Broadway, Norwich, CT 06360

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1111 Country Club Road
Middletown, CT 06457

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Griswold Board of Selectmen
28 Main Street
Jewett City, CT 06351
CONCORD NH RETAIL
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Department of Consumer Protection
450 Columbus Boulevard
Suite 901
Hartford, CT 06103
CONCORD NH RETAIL
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Council on Environmental Quality
79 Elm Street
6th Floor
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Uncasville, CT 06382
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Suite 701
Hartford, CT 06103
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Hartford, CT 06106

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Public Utilities Regulatory Authority
Ten Franklin Square
New Britain, CT 06051

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Department of Economic and Community Development
450 Columbus Boulevard
Hartford, CT 06103

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Office of the Attorney General
165 Capitol Avenue
Hartford, CT 06106

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Department of Administrative Services
450 Columbus Boulevard
Hartford, CT 06103

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Preston Conservation & Agricultural Commission
389 Route 2
Preston, CT 06365

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P.O. Box 317546
Newington, CT 06131-7546

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Hartford CT 06134

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Wethersfield, CT 06109

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Hartford, CT 06106

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EXHIBIT 18

Exhibit 18

Municipal Outreach Log

Tunnel BESS - Municipal Outreach Log

Who	When	How	What
Preston Fire Chief - Keith Wusik Building Official - Doug Colter Sandra Brown - FirstLight Andy Brydges - FirstLight Eric Weinstein - New Leaf Energy Brandon Smith - New Leaf Energy	3/28/2024	In-Person	Presented the Preston BESS project, at the request of the First Selectwoman
Norwich Fire Chief - Tracy Montoya Director of Training & Safety - Jason Erban Sandra Brown - FirstLight Andy Brydges - FirstLight Eric Weinstein - New Leaf Energy Brandon Smith - New Leaf Energy	4/10/2024	Virtual Meeting	Presented the Preston BESS project to City of Norwich Fire Department.
Chief Executive Officer - Roxanna Booth Chief Operating Officer - Darlene Yule Development Director - Elsa Montero Andy Brydges - FirstLight	4/30/2024	Virtual Meeting	Presented proposed Connecticut BESS projects to Operation Fuel and discussed opportunities to partner to advance their mission to support current and future generations to thrive with secure access to heat, power, and water.

Contacts		
Name	Role	Affiliation
Andy Brydges	Director, Community Relations	FirstLight
Sandra Brown	Director, Project Development	FirstLight
Eric Weinstein	Project Developer	New Leaf Energy
Brandon Smith	Senior Civil Engineer	New Leaf Energy
Keith Wucik	Fire Chief	Town of Preston
Doug Colter	Building Official	Town of Preston
Tracy Montoya	Fire Chief	City of Norwich
Jason Erban	Director of Training & Safety	City of Norwich
Roxanna Booth	CEO	Operation Fuel
Darlene Yule	COO	Operation Fuel
Elsa Monteiro	Development Director	Operation Fuel