DRAFT

Petition No. 1651
Fairy Lake, LLC
380 New London Road, Salem, Connecticut

Staff Report
May 9, 2025

Notice

On December 11, 2024, the Connecticut Siting Council (Council) received a petition from Fairy Lake LLC (FLL)[1] for a declaratory ruling pursuant to Connecticut General Statutes (CGS) §4-176 and §16-50k for the construction, operation and maintenance of a 4.99-megawatt (MW) alternating current (AC) battery energy storage facility (BESF) and associated equipment located at 380 New London Road, Salem, Connecticut, and associated electrical interconnection (Petition or Project).

Pursuant to Regulations of Connecticut State Agencies (RCSA) §16-50j-40, on or about December 11, 2024 FLL notified abutting property owners, Town of Salem (Town) officials, state officials and agencies of the proposed Project. No comments were received.

On December 12, 2024, the Council sent correspondence to the Town stating that the Council has received the Petition and invited the Town to contact the Council with any questions or comments by January 10, 2025. No comments were received.

The Council issued interrogatories to FLL on February 5 and March 19, 2025. FLL submitted responses to the Council's interrogatories on February 26, March 25 and April 7, 2025.

Pursuant to CGS §4-176(e) of the Uniform Administrative Procedure Act, an administrative agency is required to take an action on a petition for a declaratory ruling within 60 days of receipt. During a regular meeting held on February 6, 2025, pursuant to CGS §4-176(e), the Council voted to set the date by which to render a decision on the Petition as no later than June 9, 2025, which is the 180-day statutory deadline for a final decision under CGS §4-176(i).

On February 26, 2025, FLL filed a Motion for Protective Order related to the disclosure of project costs, cost recovery mechanisms and energy pricing contained within the response to Council interrogatory No. 10 for the proposed facility, pursuant to CGS §1-210(b) and RCSA §16-50j-22a(d) on the basis that it contains confidential, proprietary information. During a regular meeting held on March 6, 2025, the Council issued a Protective Order related to the disclosure of project costs, cost recovery mechanisms and energy pricing.

Jurisdiction

Under CGS §16-50x, the Council has exclusive jurisdiction over energy storage facilities. CGS §16-50i(a)(3)(C) specifically exempts facilities with a capacity of 1 MW of electricity or less utilizing ***renewable energy sources***. Under CGS §16-1, renewable energy sources include, but are not limited to, wind, solar, fuel cells, geothermal or biogas. The definition of renewable energy sources does not include BESF.

[1] FLL is a wholly owned indirect subsidiary of BlueWave Public Benefit Corporation.

Pursuant to CGS §16-50k, the Council shall in the exercise of its jurisdiction over the siting of energy storage facilities, approve by declaratory ruling any distributed resources facility with a capacity of not more than 65 MW unless the Council finds a substantial adverse environmental effect.

The capacity of a BESF is determined by the amount of stored energy that could be injected into the grid as electricity, or alternatively, when the BESF acts like a generating facility during discharge. CGS §16-50k(a)(B) directs the Council to approve by declaratory ruling the construction of any customer-side distributed resources facility or grid-side distributed resources facility with a capacity of not more than 65 MW. This includes BESF with output capacities of 1 MW or less. Therefore, pursuant to CGS §16-50i(a)(3)(C) and §16-50k(a)(B), BESF of any output capacity are under the Council's jurisdiction, including the BESF proposed in this Petition.[2]

Community Outreach

Between February 2023 and December 2024, FLL presented Project information to the Town Planner, Zoning & Wetlands Enforcement Officer, Inland Wetlands and Conservation Commission (IWCC), and Fire Marshal. FLL attended an IWCC meeting on October 23, 2024. Concerns include, but are not limited to, the type of liquid cooling used inside the BESF module, secondary containment, on-site water supply, costs to ratepayers, and Project benefits to the Town. These concerns, among others, are addressed in the Public Benefit; Public Health and Safety; and Environmental Effects and Mitigation Measures sections of this document, pursuant to CGS §16-50p.

FLL met with the Town Fire Department on December 9, 2024. The Fire Department requested information regarding site access, procedures for contacting FLL representatives, the supervisory control and data acquisition (SCADA) operations center or other third-party dispatch, and monitoring entities. FLL will continue its consultations with the Fire Department.

State Agency Comments

On December 12, 2024, pursuant to RCSA §16-50j-40, the Council sent correspondence requesting comments on the proposed Project from the following state agencies by January 10, 2025: Department of Energy and Environmental Protection (DEEP); Department of Agriculture (DOAg); Department of Public Health (DPH); Council on Environmental Quality (CEQ); Public Utilities Regulatory Authority (PURA); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Emergency Services and Public Protection (DESPP); Department of Labor (DOL); Department of Administrative Services (DAS); Department of Transportation (DOT); the Connecticut Airport Authority (CAA); the State Historic Preservation Office (SHPO); and the Office of Consumer Counsel (OCC).

On December 19, 2024, CEQ submitted comments related to public water supply and spill prevention, wildlife, noise, and emergency response.[3] These concerns, among others, are addressed in the Public Health and Safety and Environmental Effects and Mitigation Measures sections of this document, pursuant to CGS §16-50p.

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[2] See Council Declaratory Ruling for Petition No. 1646, available at pe1646_dcltr_022125_a.pdf

[3] https://portal.ct.gov/-/media/csc/3_petitions-medialibrary/petitions_medialibrary/mediapetitionnos1601-1700/pe1651/sac_municipal_official_comments/pe1651_ceq-commentsrecd_121924_a.pdf?rev=85b34148cdf54c039a0f02514995d431&hash=0D8D004C307BD4019C1819B8AE23B557

On January 29, 2025, DPH submitted comments related to public water supply, erosion control, spill prevention plan, points of contact, access to information, site inspection rights, and a fire plan.[4] These concerns, among others, are addressed in the Public Health and Safety and Environmental Effects and Mitigation Measures sections of this document, pursuant to CGS §16-50p.

Public Act 21-53

Public Act 21-53 "An Act Concerning Energy Storage" established a statewide goal to deploy 1,000 MW of energy storage in Connecticut by the end of 2030. It requires the PURA to develop programs for customer-side and grid-side energy storage systems connected to the electric distribution system and enables DEEP to issue requests for proposals for energy storage systems paired with renewable energy sources and stand-alone energy storage systems connected to the electric transmission or distribution system.[5]

On July 28, 2021, PURA developed a nine-year electric storage program, the Energy Storage Solutions (ESS) program[6], that is administered by the Connecticut Green Bank, Eversource Energy (Eversource) and the United Illuminating Company (UI). It offers performance incentive payments to residential, commercial, and industrial customers who host on-site battery energy storage systems as follows:

1. Behind the Meter (BTM): customer-side distributed resource that serves on-site load (paired or stand-alone) behind a customer meter; and
2. Front of the Meter (FTM): grid-side distributed resource that does not serve on-site load behind a customer meter.[7]

A paired BTM or FTM storage system has a separate input and output source. For example, a paired system could have a solar facility-generated input and a 23-kV electric distribution line output. A stand-alone BTM storage system has the same input and output source, such as a 23-kV electric distribution line. Among the technical requirements for storage systems in the ESS program is the capability of the system to provide backup power or island from the grid during outage events.

The proposed BESF is a stand-alone FTM system that was designed in response to the goals of the ESS program.

Public Benefit

Pursuant to CGS §16-50p(c), a public benefit exists when a facility is necessary for the reliability of the electric power supply of the state or for the development of a competitive market for electricity.

The state Comprehensive Energy Strategy (CES) examines future energy needs and identifies opportunities to reduce ratepayer costs, ensure reliable energy availability, and mitigate public health and environmental impacts. CES Strategy No. 8(B) is "Integrate efficiency, storage, and renewables to meet peak demand." The state Integrated Resource Plan (IRP) assesses the state's future electric needs and a plan to meet those future needs. IRP No. 13 is "Support the development of energy storage resources that can support the reliable integration of variable renewables and avoid fossil peaking generation."

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[4] https://portal.ct.gov/-/media/csc/3_petitions-medialibrary/petitions_medialibrary/mediapetitionnos1601-1700/pe1651/sac_municipal_official_comments/pe1651_dphcommentsrecd_012925_a.pdf?rev=f0a1351e3ecb464b92ec67e67788810e&hash=AEB589E3A0162E75A4E0A59D9DF36300

[5] The interim goals of the program are 650 MW by year-end 2027.

[6] https://energystoragect.com/

[7] Energy Storage Solutions Program Manual, CT Green Bank, Eversource and UI, dated January 20, 2023, *available at* https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/a3ee00544b1b1fc285258940006564b7/$FILE/ESS%20Program%20Manual_Updated%201.20.2023_CLEAN.pdf

A "customer-side distributed resources" facility is defined under CGS §16-1(a)(34) as "generation of electricity from a unit with a rating not more than 65 MW at customer premises within the transmission and distribution system or a reduction in the demand for electricity at customer premises through conservation and load management. A "grid-side distributed resources" facility, is defined under CGS §16-1(a)(37) as "generation of electricity from a unit with a rating not more than 65 MW that is connected to the transmission or distribution system."

The proposed BESF is a grid-side distributed resource facility. It would benefit the reliability of the electric power supply of the state by drawing energy from generation resources at times of low demand and subsequently injecting that energy back into the system at times of high demand.

The Project would participate in the regional electricity market, contributing to a competitive electric supply by storing energy when prices are the lowest and dispatched to provide electricity during peak hours at a cheaper price than fossil fuel power plants, thus leading to reduced electricity prices for Connecticut residents and reduced reliance on imported energy resources.

FLL would either participate directly in the ISO-NE England, Inc. (ISO-NE) Forward Capacity Market by providing additional capacity or participate as a 'load reducer' for Connecticut's public utility companies by reducing peak energy demand and costs. It would enhance the electric grid's capability to respond to extreme weather and high energy demand events.

The proposed facility would provide winter reliability benefits in the event that natural gas supplies are curtailed and/or backup oil supplies are limited.

The proposed facility is designed to achieve the goals of the state Conservation and Load Management Plan, including, but not limited to, shifting energy demand and servicing system load. It is located on a "grid edge" circuit, which are identified as circuits that experience higher than usual disruptions to electric service. PURA encourages the siting of resources on these circuits to balance the supply and demand for reliability.

PURA is developing a program to compensate FTM energy storage resources for load reduction benefits on the electric grid. On January 10, 2025, PURA initiated Docket 25-01-15, entitled "Front of the Meter Storage Program" (FTM Program). BlueWave, FLL's parent company, is an active participant in the PURA docket.

FLL would participate in the ISO-NE FCM if allowed by PURA under FTM Program rules.

The proposed facility would be dispatched based on, but not limited to, the following: a) ISO NE market signals, real-time and day-ahead market prices, and grid needs; b) FTM Program incentives to dispatch during peak grid demand periods or at predetermined, specific times; c) peak demand hours to reduce energy costs or maximize revenue; and d) grid stability needs during extreme weather or electric grid stress events.

The Project would meet Town Plan of Conservation and Development priorities by being sited in a business zone, contributing to the tax base and providing grid reliability services to ratepayers, including Town residents.

Proposed Site

Pursuant to CGS §16-50x, the Council has exclusive jurisdiction over the BESF "site." Under RCSA §16-50j-2a(29), "site" means a contiguous parcel of property with specified boundaries, including, but not limited to, the leased area, right-of-way, access and easements on which a facility and associated equipment is located, shall be located or is proposed to be located. The Council does not have jurisdiction or authority over any portion of the host parcel beyond the boundaries of the facility "site." This includes portions of the host parcel retained by the property owner and portions of the host parcel the property owner may lease to third parties. Once a facility is decommissioned, the Council no longer has jurisdiction or authority over the "site."

Under a lease agreement with the host parcel owner, FLL proposes to construct the BESF on an approximately 0.38-acre site within a 14.48-acre parcel owned by 380 New London Road Holdings, LLC. The host parcel is zoned Special Business A and is operated as a commercial garden center with several greenhouses, outbuildings, material storage areas and garden areas.

The surrounding area consists of low density residential to the north and west, residential to the south, across New London Road (Route 85) and commercial property to the east and southeast.

The lease term is for 20 years with options for four 5-year extensions. The site lease grants FLL a non-exclusive access easement. At the end of the lease, FLL would decommission the Project and restore the site substantially to pre-existing conditions.

FLL selected the site due to availability, environmental factors, commercial zoning, size, proximity to an electrical interconnection, and location in an area that needs grid stability. Pursuant to CGS §16-50p(g), the Council has no authority to compel a parcel owner to sell or lease property, or portions thereof, for the purpose of siting a facility.[8]

The proposed BESF would be located on a hill in the northern corner of the host parcel.

Proposed Facility and Associated Equipment

The Project would consist of the initial deployment of five 5.0 MWh Canadian Solar SolBank 3.0 lithium-iron phosphate battery storage units. An additional battery storage unit would be deployed after 5 and 15 years of facility operation to counteract battery degradation and maintain the nameplate output of the facility.

The BESF would be capable of providing a maximum of 19.6 MWh of electrical energy to the grid based on 4.99 MW AC at the point of interconnection. Each of the battery storage units/battery container has a maximum storage capacity of approximately 4.8 MWh for a total maximum storage capacity of approximately 24 MWh. The facility is designed with five inverters, each de-rated to 998kW, with the BESF charging up to 19,960 kWh. The remaining balance of 4 MWh is due to electrical losses from the charging/discharging cycle and degradation of the battery cells. The battery has a rated round-trip efficiency of 94 percent.

Each battery storage unit would consist of 12 battery racks, each rack would consist of 4 battery modules and each module would consist of 104 battery cells. The hermetic seals of the battery packs are designed to last for the lifetime of the Project, typically 20 years. The manufacturer performs quality control inspections of all battery packs before they are installed into the battery container.

Other equipment associated with the BESF includes, but is not limited to, five inverters, two transformers (one 2,000 kVA, one 3,000 kVA), one equipment building, two switchgear and one auxiliary transformer. All equipment would be mounted on concrete pads.

[8] *Corcoran v. Conn. Siting Council*, 284 Conn. 455 (2007); CGS §16-50p(g) (2024)

Each battery storage unit measures 19.5 feet long by 8 feet wide by 9.52 feet high. Each unit would include batteries, a thermal management system, a battery management system, and electrical equipment. The thermal management system includes a liquid coolant system for battery cells and electrical components, reducing auxiliary consumption by up to 30%. The thermal management system is powered by the battery cells via the auxiliary transformer. The battery storage units operate normally between temperatures of -22° F to 113° F.

Distances from the BESF and the nearest property lines are as follows:

a) The nearest property line from the BESF perimeter fence is 41.5 feet to the northeast at 412 New London Road (zoned Special Business).
b) The nearest residential property line from the BESF perimeter fence is 43.5 feet northwest at 47 Emerald Glen Lane.
c) The nearest property line from the nearest portion of the battery containers is 67 feet to the northeast at 412 New London Road (zoned Special Business).
d) The nearest residential property line from the nearest portion of the battery containers is approximately 75 feet to the northwest at 47 Emerald Glen Lane.
e) The nearest structure open to the public is a commercial building on the host parcel 268 feet to the south.

The BESF would be within an approximate 122-foot by 140-foot compound enclosed by a 7-foot chain-link fence. A 6.6-foot tall, 2.3-foot wide and 3.9-foot long control house would be installed within the compound.

Access to the BESF compound would utilize an existing gravel drive extending north and northeast from the existing paved parking lot on the property. FLL would extend the existing drive by 110 feet to the BESF access gate. In total, the existing and extended access drive would be approximately 645 feet long and 15 feet wide and attain a maximum grade of 15 percent.

The existing access drive crosses a narrow wetland/intermittent watercourse via a nine-foot wide twin culvert crossing. FLL would upgrade the crossing for construction and post-construction access by installing a 50-foot long, 15-foot wide modular bridge over the culvert crossing. The modular bridge would remain in place for the life of the Project.

Construction of the facility, including the access drive, BESF compound and electrical interconnection, would disturb an approximate 2.2-acre area.

The facility would interconnect to an existing 23-kV distribution circuit on New London Road which connects to the Eversource Flanders 11Y1 Substation.

The interconnection route would extend underground and outside of the BESF compound, transitioning to overhead supported on six utility poles and parallel with the north property line. The wood utility poles would be approximately 35 feet in height. The overhead line crossing above an existing shed would comply with line clearance standards.

Eversource's distribution impact study was completed on November 12, 2024, based on a 4.99 MW BESF. The study concluded that the Project would have no adverse impacts on voltages, power quality or capacitor bank operations. An Affected System Operator study is underway to determine the effect of the Project on regional transmission service.

The estimated cost of the facility and cost recovery mechanisms is subject to a Protective Order issued by the Council on March 6, 2025.

Public Health and Safety

Noise

The primary sources of equipment noise for the proposed BESF are the battery storage units, inverters and transformers. Noise would also be produced during full charge and discharge. When the BESF is neither charging nor discharging, the BESF would continue to generate noise through operation of the temperature management system.

A noise analysis determined the facility, with noise mitigation measures, would meet state noise control standards. Noise mitigation includes a 15-foot tall, 135-foot long metal noise mitigation barrier at the northwest end of the BESF to reduce operational noise to 49 dBA at the residential property line to the north, in compliance with the 51 dBA state noise control standard.

Construction noise is exempt from the DEEP Noise Control Regulations.

Operation of the BESF would not cause discernible vibrations at off-site locations.

Electric and Magnetic Fields

During operation of the BESF, electric and magnetic fields (EMF) would be produced by the power inverters and the overhead distribution circuit extends to the nearby substation. EMF levels from these sources would dissipate quickly with distance and therefore would be similar to pre-existing EMF background levels at the property lines.

Security

The facility would be monitored on a 24/7 basis by a SCADA operations center and third-party operator to detect abnormalities in operations**.** The facility can be automatically and remotely shut down if abnormalities are detected. Additionally, the facility is designed with manual shutdown switches.

The proposed site would comply with the Council's White Paper on the Security of Siting Energy Facilities. Security measures include, but are not limited to, a locked security fence and compliance with North American Electric Reliability Corporation operational and reliability standards.

The 7-foot tall perimeter fence would comply with the National Electrical Code [9] and feature anti-climb mesh. The site will have a locked gate, limiting access to authorized personnel only. High voltage warning signs would be posted at the site. The equipment would have small fixture lighting. No nighttime lighting of the compound is proposed.

Fire Protection

The BESF would be designed in accordance with the National Fire Protection Association (NFPA) 855 – Standard for the Installation of Stationary Energy Storage Systems and the 2022 Connecticut State Fire Code Chapter 52- Energy Storage Systems.

[9] Section 110.31 of the National Electrical Code (NEC), 2020 Edition notes that for over 1,000 Volts, "…a wall, screen, or fence shall be used…A fence shall not be less than 7 feet in height or a combination of 6 feet or more of fence fabric and a 1 foot or more…utilizing barbed wire or equivalent."

Lithium iron phosphate batteries utilize an iron-based chemistry that do not contain toxic heavy metals such as cobalt or nickel, which can be found in other battery chemistries. Lithium iron phosphate batteries are less prone to thermal runaway and have a higher tolerance for extreme temperatures. Other BESF safety factors include module design, module configuration, battery management and safety features, fire protection systems, and the location of the BESF.

Battery fires are typically caused by electrical issues (i.e., short circuit, overcharge, etc.), mechanical issues (i.e., physical damage, excessive heating both internally and from external fire sources, etc.), or manufacturing defects which can cause a cell to go into thermal runaway. A full state of charge will likely increase the duration of an emergency.

The SolBank 3.0 is certified to UL 9540, which ensures the batteries are designed and assembled with quality materials and methods reducing the likelihood of manufacturing defects.

The facility would be monitored on a 24/7 basis by multiple integrated management systems to continuously monitor system voltage, temperature, and insulation of each battery cell. An BESF Battery Management System (BMS), one for each string of battery cells, is included within each battery unit. The BMS ensures early detection of pre-fault conditions and rapid detection of potential fault events. If parameters exceed pre-determined operational values, the BMS would automatically disconnect the affected rack or module and send an alarm to the operations center, in accordance with the Connecticut State Fire Prevention Code and NFPA 72 – National Fire Alarm and Signaling Code.

Each battery cabinet contains one smoke and one heat detector, two gas detectors, strobes, and bells which are monitored by both the Fire Alarm Control Panel (FACP) and the BMS. When the FACP receives an alarm, such as combustible gas, heat or smoke, the notification is routed to the BMS, which autonomously isolates the respective battery cabinet.

In accordance with NFPA 69 - Standard on Explosion Prevention Systems, each battery storage unit would be equipped with a pressure-controlled ventilation system that would exhaust flammable gases during a thermal event. Battery gas from a single cell can be vented within a 1-3 minute time frame. Gases would be detected by the gas detection system installed inside the cabinet, activating the venting system to exhaust the gases from the cabinet to outside ambient air.

To prevent the likelihood of fire propagation between containers, SolBank recommends a minimum clearance of 11.5 feet from the front side of the battery containers. FLL would install the containers with a clearance of 15 feet.

SolBank offers an optional aerosol or dry pipe sprinkler battery fire suppression system within each battery container; however, FLL does not intend to install either of these optional systems as they are considered ineffective in containing a battery fire.

Current guidance from the International Association of Fire Chiefs (IAFC) suggests that BESF fire events should be allowed to burn out in a controlled, contained manner while nearby resources are monitored and protected using water as a proactive cooling agent exterior to the battery containers.[10] Water is considered the preferred agent for managing lithium-ion battery fires, wetting nearby combustibles/vegetation, cooling nearby exposures, and controlling smoke. Water applied directly to compromised battery racks may generate water run-off concerns and the potential for water damage to other battery units. Other traditional fire protection suppression methods, such as gaseous agents, dry chemicals, aerosols, or foams, have been demonstrated not to be effective.

[10] https://www.safetystanddown.org/wp-content/uploads/2023/06/Training-Sheet-Day-2-Firefighting-Operations.pdf

The nearest firefighting water source is a dry hydrant connected to the pond on the host parcel.

NFPA 855 and International Fire Code 1207 - Electrical Energy Storage Systems, require the facility owner/operator to designate and train staff to respond 24/7 within a timely manner to investigate emergency BESF incidents.

FLL has developed a draft Emergency Response Plan (ERP) for the site with information regarding the battery units and response procedures. FLL would finalize the ERP in collaboration with the Town Fire Department and provide training to local emergency responders prior to facility operation. In the event of a fire, the ERP recommends a unified command structure composed of the fire department, police department and a FLL/Bluewave representative to assess and mitigate risk.

FLL would maintain emergency contact information on signage at the entrance to the site and keep written copies of the ERP in a weatherproof box at the entrance to the site. Additionally, FLL would provide the fire department with a copy of the ERP and train fire department personnel on the ERP prior to site operation.

Fire response and command would be the responsibility of the Town Fire Department. In the event of a fire that includes a battery burst/rupture, decomposition products or gases could potentially emit toxic fumes similar to that of fires of plastic materials such as sofas, mattresses or office furniture. The potential impact of toxic gases from a BESF fire event is expected to be limited to the site.

Per IAFC guidance on fire response, persons should maintain a distance of at least 150 feet from the battery storage unit involved.

If one battery unit is involved with a fire incident, the FLL ERP recommends emergency responders establish a minimum 100-foot buffer zone around the affected unit. The buffer would be expanded if an exposure alarm is signaled, or if more than one unit is involved. Emergency responders should use self-contained breathing apparatus to mitigate respiratory risk associated with any downwind tactical operations.

During a fire event, industry guidance recommends real time monitoring at the BESF fence/property line and at nearby receptors to help develop emergency response decisions including, but not limited to potential evacuation zones.

First responders would assess the emergency and determine if real-time monitoring of any smoke/plume is warranted. Monitoring could be performed by emergency responders, or a third-party contractor dispatched to the site. Procedures for real-time monitoring would be included in the ERP. Based on results from real-time monitoring, first responders can adjust the exclusion zone around the involved battery unit(s).

Based on water sampling from other fire events at other BESS facilities, fire water runoff is not expected to contain contaminants that exceed regulatory criteria. Water testing would be based upon the actual event conditions and assessed hazards and coordination with the owner/operator of the facility, local emergency responders, and appropriate agencies.

In the event of a fault or other electrical disturbance, the facility would be able to disconnect from the grid automatically via the main disconnect switch and manual shutdown mechanisms. Although disconnected, the battery units would remain energized and can pose an electrical hazard to emergency responders.

The 2022 Connecticut State Fire Prevention Code requires the BESF to have a minimum 10-foot clearance from any public right-of-way or lot line. The BESF perimeter fence would be 41.5 feet from the nearest property line. The nearest residential structure is over 300 feet northwest of the BESF.

Aviation Safety

The nearest airport is Devils Hopyard Airfield – a private airfield located approximately 5.1 miles to the west in East Haddam. Based on the Federal Aviation Administration's (FAA) Obstruction Evaluation Tool, the Project would not to be an aviation hazard. If a temporary crane is used, it would require FAA notification and lighting/marking only if it exceeded 185 feet in height.

Environmental Effects and Mitigation Measures

Air and Water Quality

The facility would not require a DEEP Air Permit. No hazardous air emissions would be produced during the operation of the facility.

Water would not be used during operation of the facility.

Groundwater at the site is classified as GAA defined as, "…existing private and potential public or private supplies of water suitable for drinking without treatment…". Construction and operation of the BESF is not anticipated to have an impact on groundwater.

The site is not located within a DEEP-designated Aquifer Protection Area. The site is not located within a Federal Emergency Management Agency-designated flood zone.

The site is within the New London Department of Public Utilities Public Lake Konomoc Reservoir Drinking Supply Watershed. The nearest mapped waterbody within the watershed is Horse Pond Brook, a Class AA surface waterbody, which flows southward through the host parcel. The brook is approximately 160 feet southwest and downgradient of the BESF.

The host parcel and abutting properties are served by private water wells. The Project requires relatively shallow construction and, thus, implementation of erosion and sedimentation (E&S) controls would be protective of water quality.

FLL developed a Spill Prevention Control Plan that includes spill response procedures, reporting protocols and contact information to state and local agencies and the New London Department of Public Utilities. Fuels would not be stored at the site.

The BESF units utilize a 50/50 ethylene glycol-water coolant, which is monitored by a liquid level gauge. The battery containers serve as a containment system for any possible coolant leaks.

FLL performed a wetland and watercourse survey on March 12 and April 17, 2024, identifying three wetlands in proximity to the site, as follows:

Wetland 1 – a large wetland located along the western parcel boundary, draining north and then east across the central portion of the host parcel. The western extent is forested while the eastern portion consists of a channelized area with an intermittent watercourse connecting to Horse Pond Brook.

Wetland 2 – a depressional area formed by past excavations in the northwest portion of the host parcel, surrounded by nursery activities. It contains standing water from seeps, supporting reed and shrub vegetation.

Wetland 3 - an irrigation pond with reinforced stone sidewalls and no bordering vegetation located in the northeast portion of host parcel.

A small vernal pool supporting wood frog and spotted salamander is at the western extent of Wetland 1. It is considered suboptimal habitat because it abuts developed plant nursery areas to the south and supports green frog, a predator to wood and spotted salamander larvae.

The BESF compound would be approximately 60 feet from Wetland 2. Although the BESF stormwater basin would be constructed adjacent to the southwest side of Wetland 2, no negative effect to Wetland 2 is anticipated given it is a man-made excavation that intercepted the water table.

Development of the Project would maintain upland forested areas and vernal pool species migratory corridors that may exist to the north, east and west in accordance with the 2015 U.S. Army Corps of Engineers (USACE) Vernal Pool Best Management Practices. A 100-foot minimum buffer would remain between the vernal pool and the proposed access drive, stormwater basin and BESF compound. The stormwater basin would be designed to retain a maximum six inches, draining within 48 to 72 hours. Given the short hydroperiod, it is unlikely it would act as a decoy pool for vernal pool species.

Pursuant to C.G.S. §22a-430b, a DEEP Stormwater Permit is required for any disturbance greater than 1 acre. The construction limit of disturbance for the proposed facility is approximately 2.2-acres, therefore the Project would require a DEEP Stormwater Permit.

Stormwater flows to the west would be diverted via a berm and two swales. Stormwater flows to the east would be diverted into a stormwater basin for controlled discharge.

E&S controls for the proposed facility would comply with the *2024 Connecticut Guidelines for Soil Erosion and Sediment Control.*

The proposed transformers would utilize a biodegradable food grade oil. A specific low-level oil alarm is not proposed as the transformers would be monitored for any malfunctions.

Forests and Parks

Development of the site would require the clearing of 1.1 acres of trees, primarily in the BESF compound area.

There are no state parks within 0.25-mile of the site.

Scenic, Historic and Recreational Values

The State Historic Preservation Office determined the Project would have no impact on historic or archeological resources.
There are no State-designated scenic roads or recreational resources within 0.25 mile of the site.

The BESF would be visible year-round from the garden center and from a short section of New London Road in front of the host parcel.

Seasonal visibility would extend up to 0.12 miles and would include portions of residential properties on New London Road to the north and west.

No landscaping is proposed.

Fish, Aquaculture and Wildlife

The site is not within a DEEP Natural Diversity Database (NDDB) buffered area.

The northern long-eared bat (NLEB) and tricolored bat (TCB), both federal-listed and state-listed Endangered Species are known to occur in the area of the site.

FLL performed a NLEB and TCB impact analysis using a U.S. Fish and Wildlife Service (USFWS) determination tool which indicated the project "may affect, not likely to adversely affect" NLEB and TCB. The determination included a time of year restriction for tree clearing, with tree clearing to occur during the inactive periods for NLEB and TCB, October 1 through April 14. FLL developed a Bat Protection Plan which includes the tree clearing restriction as well as the installation of two bat boxes to provide potential bat roosting locations.

Disturbed areas around the BESF would be seeded with a steep slope seed mix consisting mainly of grass species with a wildflower component. The stormwater detention basin would be seeded with a raingarden plant mix.

Agriculture

No prime farmland soils would be disturbed by the development of the site.

Facility Construction

Construction would proceed with the installation of E&S controls, the modular bridge and the stormwater management system. After disturbed areas are stabilized, tree clearing and grubbing would occur, followed by installation of BESF infrastructure.

Construction of the facility, including the access drive, BESF compound and electrical interconnection, would disturb an approximate 2.2-acre area.

Development of the site would require 845 cubic yards of fill, and 1,458 cubic yards of gravel for the compound/access drive. A temporary gravel turnaround/staging area would be established south of the BESF compound.

Soils at the site consist of thin deposits of glacial till over bedrock. FLL does not anticipate construction would reach the bedrock layer; however, if bedrock is encountered, it would be removed by mechanical methods. Blasting is not anticipated. A geotechnical engineer would be on-site to certify the backfill is properly installed to support the BESF equipment pad.

Construction of the BESF is expected to begin in the second quarter of 2026 with completion in the fourth quarter 2026. Construction hours would be from 7:00 a.m. to 5:00 p.m. Monday through Friday.

Operation and Maintenance

Once operational, the facility would require routine maintenance visits at least twice per year. The BESF would be out of service for a total of up to 3 weeks a year for the annual and semi-annual inspections. In addition to the scheduled inspections, FLL anticipates visiting the site three times per year for corrective actions. Vegetative maintenance would occur on an as needed basis.

The access road would be cleared of snow to maintain access to the site. Snow would also be removed from the BESF compound to ensure safe operation.

The modular bridge would feature pressure treated timber decking. Damaged timbers would be replaced as necessary.

The anticipated annual degradation of the battery units would vary between 1 percent and 3 percent annually, with slightly higher anticipated degradation in the first year of operation. To maintain the facility output of 19.96 MWh, an additional battery unit would be installed in operational years 5 and 15, depending on actual facility output at that time.

The Project has a lifespan of 20 years with the possibility of extending Project life for another 20 years through battery replacements. The inverters may require repair or replacement after 10 years of service. The transformers and switchgear are anticipated to last for 20 years.

Decommissioning

At the end of the Project's service life, the BESF would be dismantled and removed, including but not limited to, BESF mechanical infrastructure, concrete pads, sound barrier, fencing and utility connection. Underground infrastructure would be removed to a depth of two feet. Modular equipment would be removed as modular components. Equipment would be recycled or sold as scrap to the greatest extent possible.

The new section of gravel road and the modular bridge would be removed. The stormwater management system would remain in place. All disturbed areas would be graded, if necessary, and reseeded for soil stabilization.

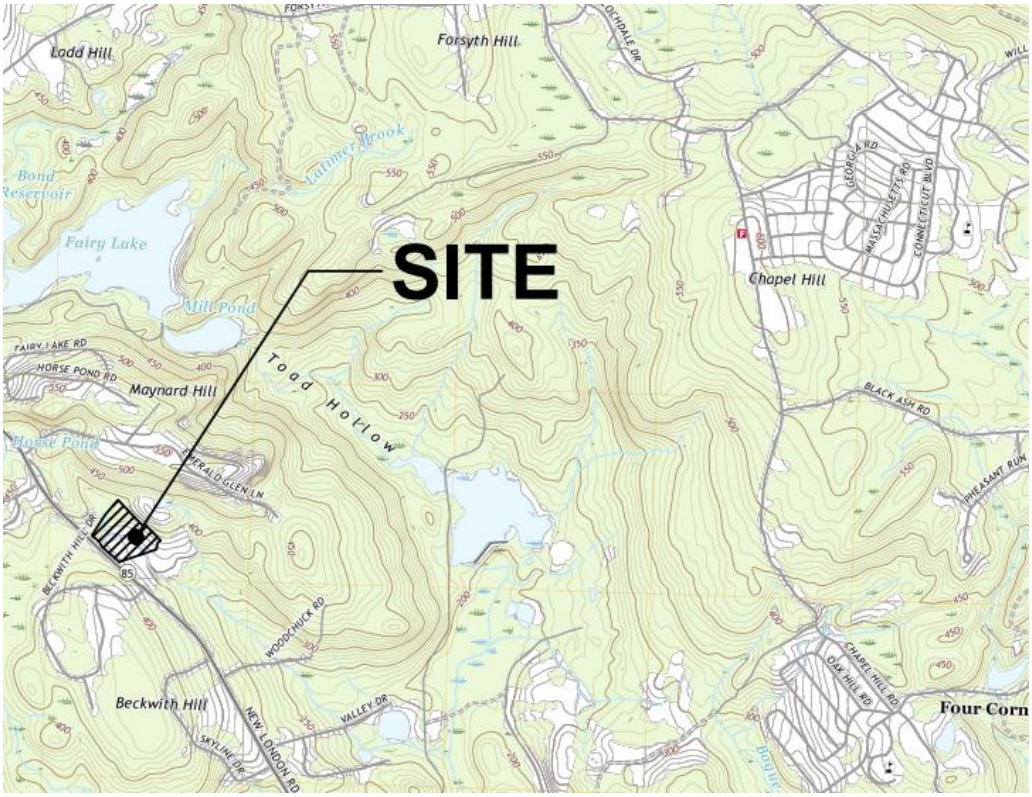
Conclusion

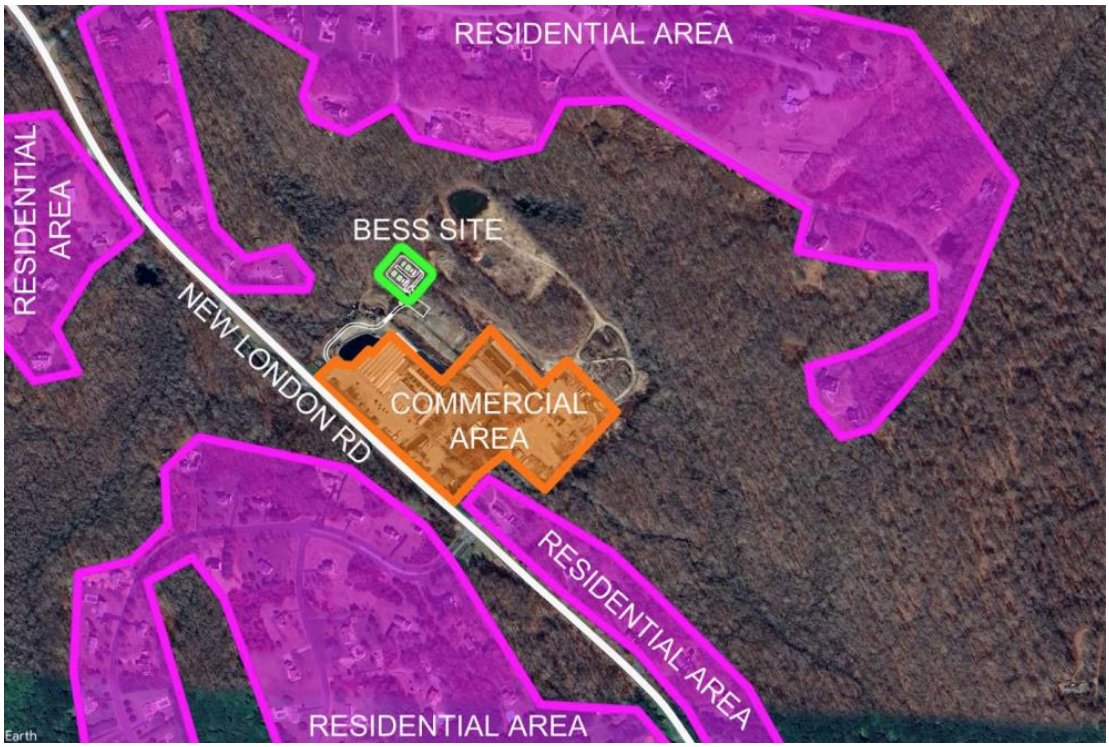
The BESF is a grid-side distributed energy resource with an output capacity of not more than sixty-five megawatts, meets air and water quality standards of the DEEP, and would not have a substantial adverse environmental effect. The proposed Project would further the State's energy policy by integrating storage to meet peak demand and support the reliable integration of variable renewable resources.

If approved, staff recommends the following conditions:

1. Approval of any Project changes be delegated to Council staff;
2. Submit a copy of the DEEP Stormwater Permit prior to the commencement of construction;
3. Implement the Bat Protection Plan and USFWS-recommended bat protective measures;
4. Provide a copy of the final Emergency Response Plan that includes an itemized list of necessary fire suppression equipment to the Council and local emergency responders prior to facility operation, and provide emergency response training;
5. Provide a signed certification by the Fire Chief that training has been completed and the ERP is approved prior to commencement of operation;
6. Submit a copy of the building permit prior to commencement of operation; and
7. Submit a post-construction operational noise study that documents compliance with state standards, and if necessary, the identification of any noise mitigation measures that are employed to adhere to the standards.

Site Location and Area Land Use





Host Parcel - Existing Conditions

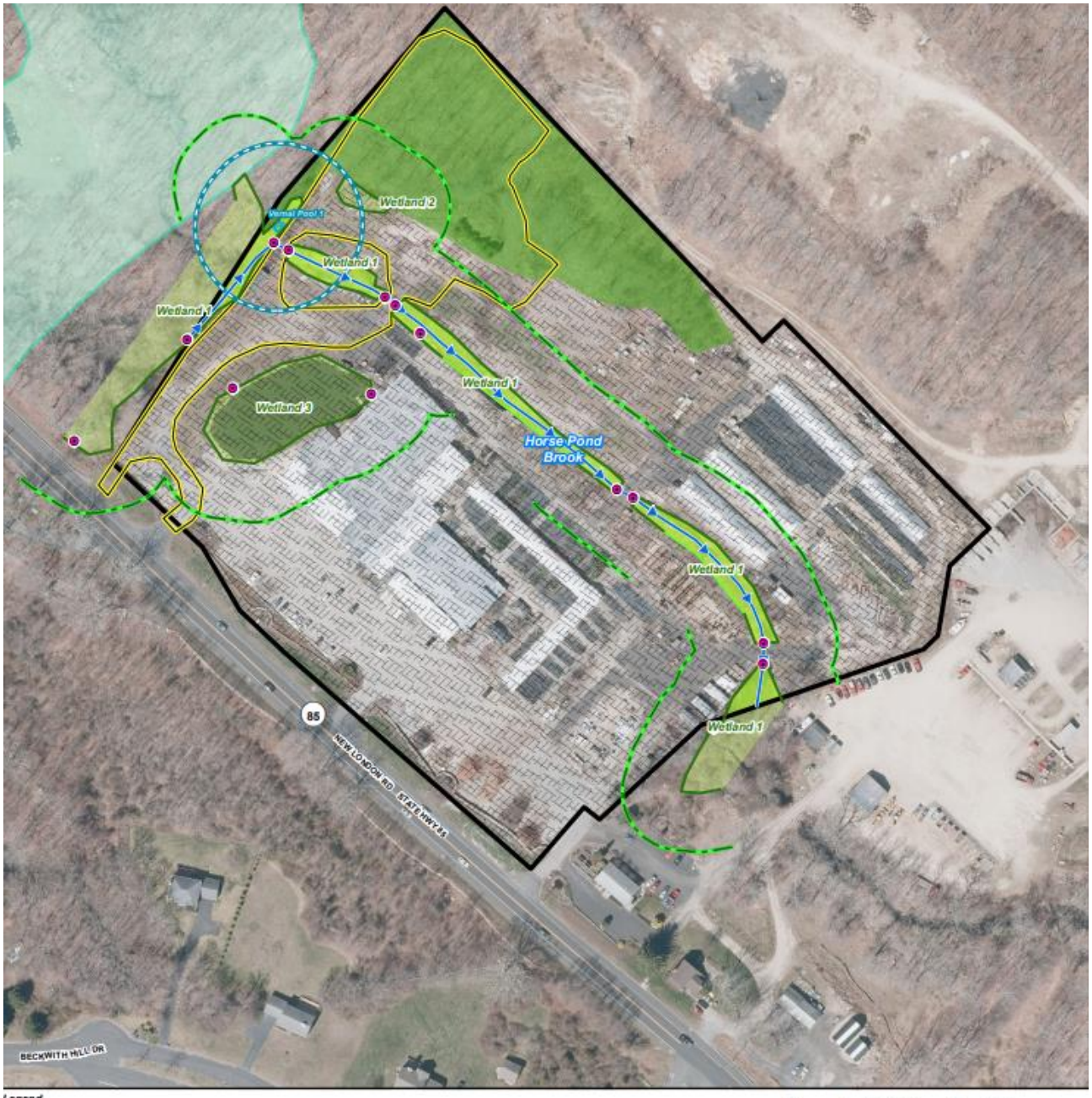


Figure 2 - Existing Conditions
Proposed Battery Storage Facility
CT Salem New London Rd
380 New London Road
Salem, Connecticut

ALL-POINTS TECHNOLOGY CORPORATION

Host Parcel- Proposed Conditions

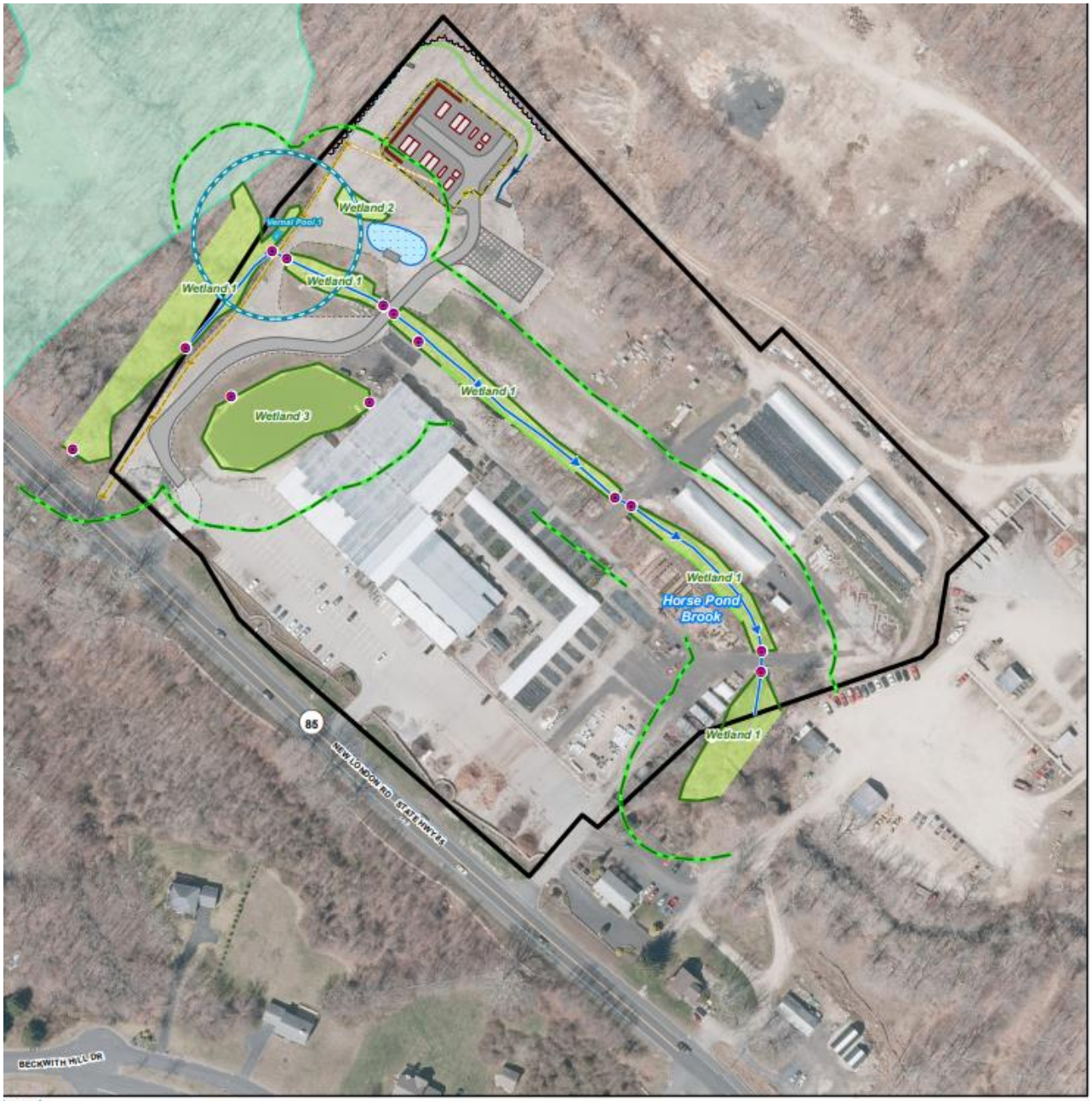
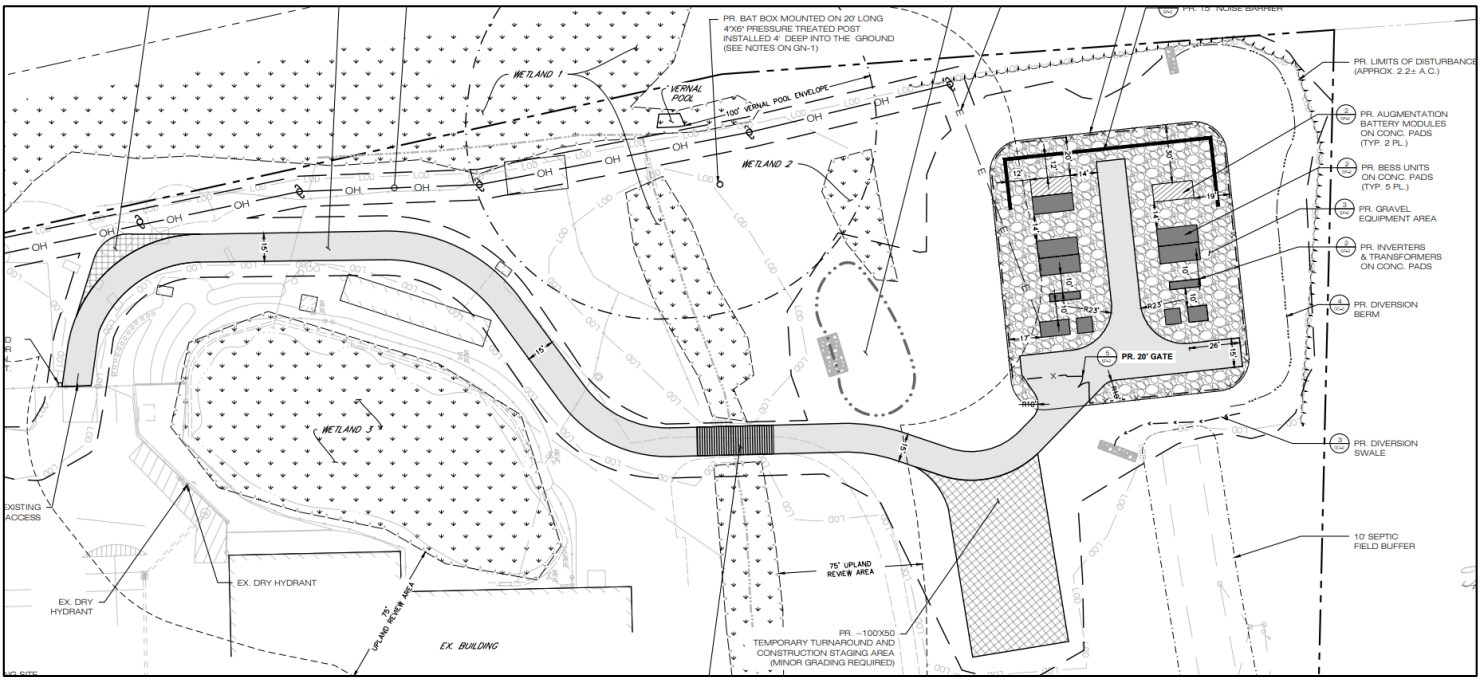


Figure 3 - Proposed Conditions
Proposed Battery Storage Facility
CT Salem New London Rd
380 New London Road
Salem, Connecticut

ALL-POINTS TECHNOLOGY CORPORATION

Proposed Site Layout



Facilty Rendering from Route 85