

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

NORTHEAST UTILITIES SERVICE COMPANY, ON :
BEHALF OF THE CONNECTICUT LIGHT AND :
POWER COMPANY APPLICATION FOR A : DOCKET NO. 398
CERTIFICATE OF ENVIRONMENTAL :
COMPATIBILITY AND PUBLIC NEED FOR THE :
CONSTRUCTION, MAINTENANCE, AND :
OPERATION OF THE SHERWOOD SUBSTATION :
LOCATED AT 6 NEW CREEK ROAD, WESTPORT, : APRIL 29, 2010
CONNECTICUT :

**THE CONNECTICUT LIGHT AND POWER COMPANY'S
MEMORANDUM IN SUPPORT OF APPLICATION**

I. INTRODUCTION

The Connecticut Light and Power Company ("CL&P") filed an application for a Certificate of Environmental Compatibility and Public Need for the Sherwood Substation with the Connecticut Siting Council ("Council") on December 29, 2009. In its application, CL&P proposes to construct a new substation to be called the Sherwood Substation (the "Substation") on CL&P-owned property located at 6 New Creek Road in Westport (the "Property"). The Substation would improve reliability and add needed distribution capacity to serve the growing electric power demands in the Greens Farms section and immediately adjacent portions of the

southeast area of Westport. Significantly, the Sherwood Substation would also eliminate the need for temporary equipment now in use. (CL&P 1, Vol. I, p. A-1)

The proposed project (the "Project") would include the construction of the Substation, a new bulk-power 115- to 13.8-kV substation, which would be accomplished by connecting two 60-Megavolt-Ampere ("MVA") power transformers to an existing 115-kV transmission line. (CL&P 1, Vol. I, p. F-1) The Substation will be strategically positioned to facilitate connection to the existing 115-kV circuit that is located just north of the Property. CL&P has located and designed the Substation in a manner that minimizes potential visual effects and has incorporated measures to ensure the protection of existing resources during construction and operation of the Substation facilities. (CL&P 1, Vol. I, Sec. L)

Based on the existing conditions of the Property and the Substation's design, the construction and operation of the Substation is not expected to have any significant permanent adverse effects on the environment. CL&P has incorporated measures into all phases of Substation development and operation to ensure that the environment is protected in accordance with federal, state and where possible, taking into account local requirements. (CL&P 1, Vol. I, Sec. L)

(a) Statutory Criteria

The criteria for issuing a certificate for an electric power substation or switchyard, as described in CGS §16-50i(a)(4), i.e., one designed to change or regulate the voltage of electricity at 69-kV or higher or to connect two or more circuits at such voltage, which may have substantial environmental effect, is found chiefly in CGS §16-50p(a)(3)(A) - (C). Such criteria include public need for the facility and the basis for that need, the nature of the environmental impact alone, and cumulatively with other existing facilities, and why the adverse effects are not sufficient reasons to deny the application.

(b) CL&P Met All Filing Prerequisites

Pursuant to CGS §16-50l(e), beginning on October 14, 2009, which was at least 60 days before filing the application with the Council, CL&P undertook a detailed and formal Municipal Consultation with Westport. (CL&P 1, Vol. I, Sec. O) The First Selectman's comments in this docket aptly sum up the process and the Town's position:

The town supports the Sherwood Substation to be located at 6 New Creek Road, in the manner proposed by CL&P....

The town has become aware of the temporary measures undertaken by CL&P at area substations.

We understand that a more permanent solution is essential to ensure that service to CL&P's customers is reliable and that capacity is available to meet future needs in Westport.

We are pleased that CL&P is proposing the Sherwood Substation, a new state-of-the-art facility, to serve Westport customers and that it will replace the aging Greens Farms Substation and the temporary measures in place, including the transformer at Sasco Creek Substation.

CL&P has provided to the town detailed information and plans for the substation design, which has been reviewed by Westport's Conservation Commission, Planning and Zoning Commission and town staff from various departments, including emergency responders. **The town has furnished comments to CL&P at every stage of the process and is satisfied with CL&P's responses and plan changes.** (emphasis added)

(CL&P 1, Vol. II, Exh. 6) The regional planning agency also took note of CL&P's municipal outreach efforts: "It is evident that your office has worked closely with the Town of Westport throughout the preliminary planning process for the proposed substation." (CL&P 4, Attach. 5)

During the period prior to filing the application with the Council, CL&P also consulted with the Westport Conservation Commission ("ConComm") and the Westport Planning and Zoning Commission ("P&Z"), and filed substation "Location Review" submissions with each commission. (CL&P 1, Vol. I, p. O-1) Both land-use agencies issued comments, which were addressed by CL&P. (CL&P 1, Vol. I, Sec. O; CL&P 1, Vol. II, Exh. 6) Significantly, such

agencies also provided final comments directly to the Council, as follows:

- P&Z, December 7, 2009:

“At this time the Planning & Zoning Commission is satisfied with the project as presented and has no additional concerns.”

- ConComm, March 31, 2010:

“The revised planting plan ... prepared by William Kenny Associates LLC has been reviewed by staff and deemed acceptable, therefore, we offer support for the implementation of this plan.

The erosion and sediment plan ... accomplishes adequate protection of the on site inland wetland resources and therefore we offer support for the implementation of this plan.”

(CL&P 1, Vol. II, Exh. 6; Municipal Comments, Item 2)

Previously, the ConComm, in its November 20, 2009 letter to CL&P stated: “The Westport Conservation Commission thanks you for the opportunity to comment on this project and your cooperation in amending the plans to better protect our natural resources.” (CL&P 1, Vol. I, Exh. 6) Finally, the ConComm, in its January 11, 2010 letter to the Council stated: “At this time, the Conservation Commission would like to offer support for this project. They commend CL&P for how **transparent and collaborative the project review process was within the Town of Westport.**” (emphasis added) (Record)

In addition, at the P&Z's request, CL&P met with the Westport Architectural Review Board. CL&P also met with Town emergency personnel to discuss energy security issues. (CL&P 1, Vol. I, p. O-2)

Notices were provided to abutting and nearby property owners and notice of the application was published in The Westport News and Norwalk Hour in accordance with CGS §16-50/(b). (CL&P 1, Vol. I, p. Q-4; CL&P 1, Vol. II, Exh. 9; CL&P 5, p. 29) Significantly, the only true abutters, Robert J. and Lou Ann Giunta, in their letter to CL&P of January 20, 2010 noted that their comments were addressed, their satisfaction with CL&P's efforts to provide enhanced screening and that they have no objections to the Sherwood Substation being located at the 6 New Creek Road site. (CL&P 3) Service of the application was made on all state and local officials and agencies described in CGS §16-50/(b). (CL&P 1, Vol. I, pp. Q-3, Q-4; CL&P 8) A duly noticed hearing was held by the Council in the Westport Town Hall Auditorium, 110 Myrtle Avenue, Westport, Connecticut, on March 31, 2010 at 3:00 p.m. and 7:00 p.m. (Tr. 1; Tr. 2) The Council and its staff inspected the Property on March 31, 2010, beginning at 2:00 p.m. (Record)

II. PROJECT DESCRIPTION

CL&P acquired the Property in 2008 for the purpose of building a bulk-power substation. The Property is 2.56 acres in area and contains an unoccupied house. (CL&P 1, Vol. I, pp. F-1,

H-1). Because of its size, configuration, location and proximity to existing electrical transmission infrastructure, the Property was identified by CL&P as an ideal location for a substation. (CL&P 1, Vol. I, Sec. I)

The Substation would occupy an irregularly shaped area on the Property of 21,370± square feet, measuring approximately 137 feet by 160 feet at its longest dimensions. This area would be covered with a trap rock surface and secured by a seven-foot high chain-link fence with one foot of barbed wire (three strands). (CL&P I, Vol. I, p. F-1) Access to the Property would be provided via a new driveway from New Creek Road in the eastern portion of the Property. (CL&P 1, Vol. I, p. F-3)

Once constructed, the Substation would connect into one of two existing 115-kV-overhead transmission line circuits (the 1890 transmission line circuit), which is the southernmost of the two transmission circuits on the existing right-of-way (ROW) that are located to the north of the northerly border of the Property. (CL&P 1, Vol. I, p. F-1) The existing circuits located on the ROW are supported by steel poles. In order to connect the 1890 transmission circuit to the Substation, two additional single-circuit steel poles (similar in height to the existing structures in the transmission line corridor) will be installed. Within the Substation bus, a 115-kV circuit breaker will be installed to separate the existing 1890 circuit into two circuits. The segment of the existing 1890 circuit to the east of the Property would be

renamed the 1578 circuit; the remaining segment of the existing circuit to the west will retain the 1890 circuit designation. (CL&P 1, Vol. I, p. F-1)

The 115-kV interconnections between the Substation and the new transmission line poles would be accomplished by installing two new line-terminal structures (approximately 50 feet in height) within the Substation. (CL&P 1, Vol. I, p. F-3) The Substation would also be outfitted with a circuit breaker, seven disconnect switches, five circuit switchers and two 60-Megavolt-Ampere (MVA) power transformers that would step down the voltage from 115 kV to 13.8 kV. A third transformer position would be provided to accommodate a temporary, mobile transformer for emergency conditions. (CL&P 1, Vol. I, p. F-3)

Four metal switchgear enclosures will be installed to provide the switching equipment for ten 13.8-kV distribution feeders, of which six will be activated initially. Cables for each distribution feeder will exit the Substation via underground conduits, and rise above ground on wood poles alongside streets near the Substation. Two of the feeders would rise above ground on two existing wood poles on New Creek Road, one would rise above ground on a new pole to be installed on Maple Lane, and three feeders would rise above ground on existing poles located on Greens Farms Road. There will be a total of six overhead distribution feeders exiting the Substation. (CL&P 5, p. 6) Finally, in addition to the four switchgear enclosures, a metal

control enclosure will be installed within the Substation compound, to house the control and charger associated with the transmission equipment. (CL&P 1, Vol. I, p. F-3)

As set forth in Sections J, M.2, and M.3 of the Application (CL&P 1, Vol. I), CL&P has incorporated significant safety/security features into the design of the proposed Sherwood Substation, as follows:

- The Substation would be equipped with measures to ensure continued service in the event of outages or faults on transmission or substation equipment. Protective relaying equipment would automatically detect abnormal system conditions and would isolate the faulted section of the transmission system.
- Additional protection will be provided by a Supervisory Control and Data Acquisition system (“SCADA”). The SCADA system allows for remote control and equipment monitoring by the Connecticut Valley Electric Exchange (“CONVEX”) System Operator, and would be housed in a weatherproof, relay/control enclosure. Moreover, the “loop-through” design configuration for the 115-kV line helps ensure operational reliability.
- The proposed Substation would be designed and constructed in accordance with all applicable national, electric utility industry, State and, to the extent practical, local codes.

- The perimeter of the proposed Substation would be surrounded by a seven-foot high chain-link fence with an additional foot of barbed wire (3 strands) on top to discourage unauthorized entry or vandalism.
- A locked gate would be installed across the driveway entrance.
- Visitors would never be left alone on the Property; they would be accompanied by Company employees and required to adhere to prescribed safety rules including, when required, the wearing of protective equipment.
- CL&P incorporates IEEE, American National Standards Institute and National Fire Protection Association standards for fire protection in its new substation designs and operates these facilities to minimize the occurrence or impact of fire. CL&P also trains its employees and the local fire department on the safe methods to respond to and deal with a substation fire. The relay/control enclosure would be equipped with fire extinguishers, and also be equipped with smoke detectors that would be monitored from a remote location. Smoke detection would automatically activate an alarm at CONVEX and the system operators would then take appropriate action.
- Strict procedures and training for worker safety will be maintained when employees and contractors are on the site.

- CL&P met with law enforcement and emergency response personnel in Westport to discuss the Substation and coordination of efforts to protect its security.
- CL&P will work closely with the Westport Police Department to establish off-duty protection at the site during the course of major construction activity.

(See also CL&P 5, pp. 24-26)

III. NEED

(a) Existing Service Area Conditions

The addition of the Sherwood Substation is essential for creating a stronger and more reliable distribution system. Development of the Sherwood Substation would effectively alleviate loads on the existing substations currently serving the Town of Westport by adding a new capacity source to the distribution system. Currently, the electric load in Westport is served primarily from two small distribution substations: Greens Farms and Westport, and three bulk power substations, two in Westport: Compo and Sasco Creek, and one in Weston (bulk power). The new Sherwood Substation will allow CL&P to maintain reliable service and meet demand, as well as to replace the older, space-constrained Greens Farms Substation and the temporary transformer at Sasco Creek. (CL&P 1, Vol. I, Sec. G)

(b) Temporary Measures

Temporary measures are now in use and required to ensure that the electric demand in Westport can be reliably served. The Sherwood Substation is a permanent solution that would alleviate the need for these temporary measures, described in more detail below. The first temporary modification to increase capacity was the installation of a 9.375-MVA, 27.6- to 13.8-kV power transformer in May 2006 at Greens Farms Substation. The second temporary modification was the installation of a 17.9-MVA, 115- to 13.8-kV power transformer at Sasco Creek Substation in July 2006 to off-load Greens Farms Substation. CL&P received permission from Metro-North/Connecticut Department of Transportation (“CDOT”) to install the power transformer only on a temporary basis at Sasco Creek Substation, until a permanent solution was put in place. Note that Metro-North’s and CDOT’s position is quite clear as to the original intent that CL&P’s transformer be “temporary” and that the space currently occupied by the transformer is needed for railroad purposes. Both CDOT and Metro-North have reiterated their positions that only temporary permission was given for CL&P’s transformer at Sasco Creek and that permanent use will not be authorized:

- In his September 17, 2009 letter to CL&P, Eugene J. Colonese, Rail

Administrator, CDOT Bureau of Public Transportation, states:

“In response to this [CL&P’s] need, the Department has continued to allow CL&P to place a temporary transformer at the Department’s Sasco Creek site

for emergency use subject to Metro-North Railroad's (MNR's) conditions, licenses, etc. **However, the site was constructed for the sole purpose of supplying traction power to MNR and, as such, the Department must deny your request for a long term or permanent use of the Sasco Creek site.**" (emphasis added)

- In his March 17, 2009 letter to CL&P, J. J. Gillies, Director Power Systems, stated Metro-North's position more emphatically:

"It was our understanding from your Don Chamberlain and Richard Servello that this temporary occupancy [by CL&P at Sasco Creek] would be for about 30 months. (That was 54 months ago) In my Sept 23, 2005 letter I also addressed a request for a long term / permanent use of our facilities. There have been a couple of site plan proposals and equipment layouts circulated however our response remains the same. The 51R site was constructed for the sole purpose of supplying traction power to Metro North in 1985-86. This is a public transportation function. The property and equipment is owned by Connecticut DOT. Metro North is the operator who in turn contracts with CL&P to perform operations & maintenance activities. We will not agree to any long term / permanent use of this site for any purpose other than railroad traction power." (emphasis added)

(CL&P 1, Vol. II, Exh. 10) With the Sherwood Substation in place, CL&P will be able to remove its transformer from Sasco Creek by no later than 2012.

Additionally, to address a future overload of the 27.6- to 13.8-kV power transformers at Weston Substation, a temporary 20-MVA, 27.6- to 13.8-kV power transformer was installed within that substation in May 2007. This transformer provides back-up to Greens Farms Substation (approximately 10 MVA) via limited feeder ties from Weston.

(c) Westport's Projected Future Need

Peak electric demand increased substantially from 2004-2006 for the load serving Westport. Based on conservative planning projections of 2% increases per year, Sherwood Substation would allow CL&P to reliably meet this demand. Note that the rationale for CL&P's calculation of future need is more fully set forth in CL&P's Late Filed Exhibit filed with the Council on April 15, 2010.

It is also noteworthy that Table G-3, Area Substation Load and Capacity in MVA – 2012 (CL&P, Vol. I, p. G-7), reflects that summer peak loads in 2012 are expected to be slightly under available capacity in the Westport area: total peak load would be 118.29 MVA, with 120.40 MVA capacity available in 2012. However, as noted in Mr. Gagnon's Pre-filed Testimony, in Table G-2 in the Application, the peak electric load estimate for 2010 (113.69 MVA) reflected a 3 MVA off-load from Westport Substation that first occurred in 2008. In 2008, the 3 MVA off-load from Westport Substation was transferred over to Compo Substation, but the peak loads for Compo Substation shown in Table G-2 for the years 2010 and beyond did not reflect the transfer of 3 MVA to Compo Substation. If that 3 MVA transfer over to Compo Substation were to continue to occur, then the new total for 2012 peak load of 121.41 MVA (118.29 MVA plus the 3 MVA transfer plus 0.12 MVA (2 years of escalation on the 3 MVA)) would exceed the capacity available to Westport (120.40 MVA) in 2012. With the Sherwood Substation in

service, sufficient capacity would be available to Westport in the amount of 167.50 MVA to meet the peak load in 2012, as set forth in Table G-3. (CL&P 1, Vol. I, p. G-7, Table G-3; CL&P 5, p.13)

Significantly, the need for the Sherwood Substation was recognized by the First Selectman of the Town of Westport during the Council's afternoon hearing:

The town has been actively involved in the process of bringing a new substation to Westport. This is something that the town has recognized the need for. And a number of years ago we had outages traced to the fact that we're a growing community, as is the entire southwest Connecticut And so we look forward to more reliable service and the need to provide energy for our homes, our businesses, and all the activities of Westport as a substation will provide.

(Tr. 1, p. 6, Joseloff)

(d) System Alternatives

CL&P has explored system alternatives, including participating in several conservation and demand side management programs as well as system modifications to existing substations.

(i) Non-Facility Based Alternatives

The load reductions provided by the conservation and demand side programs will not relieve the need for the Substation. CL&P develops and manages an array of traditional energy efficiency and Demand Side Management

("DSM") programs statewide through the Connecticut Energy Efficiency Fund ("CEEF"). In 2006, 2007 and 2008, CL&P estimates that through participation in these CEEF programs, customers in the Westport area have achieved summer peak-demand savings of approximately 1.2 MW. Annual savings for the period 2006 through 2008 are 5,142,658 kilowatt hours ("kWh"), and customers will save approximately 68,312,039 kWh of energy over the life of the installed measures. (CL&P 1, Vol. I, Sec. G; CL&P Late Filed Exhibit)

Furthermore, in concept, although the addition of properly sized, properly located, available, and dispatchable distributed generation (interconnected to distribution feeders or customer-side), could mitigate the growing pressure on local electric distribution system capacity, as more particularly explained in Section G of the Application, Westport's customer base does not provide a viable opportunity for significant load reduction and there are no known DG projects under consideration by Westport customers. Moreover, demand response programs have only achieved limited reductions. (CL&P 1, Vol. I, pp. G-11-G-12).

As a result of the Distributed Generation, the Demand Response programs and Conservation and Load Management, the summer peak demand has been reduced in the Westport area by 1.8 MW in 2008, as follows:

1.	Distributed Generation	0.0 MW
2.	Demand Response	0.6 MW
3.	Conservation and Load Management Programs	<u>1.2 MW</u>
	Total	1.8 MW

(CL&P 1, Vol. I, p. G-14)

As noted during the afternoon hearing by Dr. Bell, conservation and load management programs have the potential in theory to achieve significant savings in usage per dollar spent. However, Mr. Gagnon's response to this point reflects the challenges that CL&P faces with its conservation and load management programs:

...these are customer driven incentives. And the customers really have to come to us to look for these incentives. And -- and we try to drive as much as we can people to these. We have websites, we have 1-800 numbers, we do television spots. We actually have -- the DPUC does some awareness programs. We go to the Chamber of Commerce. We try to get the message out. And this is the best we've been able to do, the 1.8. So, I would think it's very difficult to go to that type of level.

(Tr. 1, p. 60, Gagnon)

In fact, the data for Westport's conservation and load management efforts supports Mr. Gagnon's testimony. (See CL&P 1, Vol. I, pp. G-14-G-15) Participation in these programs declined from 2007 to 2008 and the economic incentives previously provided through the Grant Program for Distributed Generation are no longer available. Moreover, the limited savings that have been achieved represents only a fraction of the capacity that would be supplied by the Sherwood Substation. These programs combined would represent approximately 2% of the capacity provided by the Substation. With Westport's projected annual growth rate of 2% a year, the customer side programs would not provide enough relief for the Westport area in lieu of a new substation. (CL&P 1, Vol. I, p. G-15)

Finally, Westport's customer base, which is primarily residential does not lend itself well to efforts to achieve significant load reduction through projects such as distributed generation. (CL&P 1, Vol. I, p. G-12; Tr. 1, p. 56, Gagnon)

(ii) Facility Based Alternatives

CL&P considered modifying existing substations serving the Westport load and determined that none of those substations could be modified to meet the growing Westport load demand as follows:

1. Greens Farms Substation: Built in 1956 on an approximately 17,000 square-foot parcel of land, due to the configuration of the property and its small size, there is no room within the fenced area for additional equipment or to expand at this site. Additionally, this substation is supplied by two 27.6-kV feeders, one from Norwalk Substation and the second from Weston Substation, that are over four miles from the load, which increases the risk of outages due to long feeder lengths; and thus, may adversely affect reliability.
2. Westport Substation: Built in 1930 on an approximately 11,300 square-foot parcel of land, there is no space for expansion. Also, it serves a more unique function in terms of the type of facilities and the area served, specifically the downtown Westport underground network cable system.
3. Compo Substation: Built in 1959 on an approximately 11,700 square-foot parcel of land, due to physical limitations, CL&P is unable to further expand it to provide more capacity.
4. Weston Substation: Built in 1944 on a 96,000± square foot parcel of land, it is not a viable option for extending further into Westport due to its distance from the load center and physical expansion limitations.

5. Sasco Creek Substation: Built in 1983 to exclusively supply electricity to the railroad, it is not a viable option for expansion since CL&P does not own this substation or the property and Metro-North, with CDOT's concurrence, has plans for its use solely for supplying traction power to the railroad.

(CL&P 1, Vol. I, pp. G-8 - G-11)

(e) Site Alternatives

Alternative sites were evaluated to meet Westport's growing load but they were all found to be inadequate. Overall, CL&P examined six sites, five sites and the Property. None of the five alternative sites could provide the reliability and flexibility necessary to meet Westport's increasing electrical need. (CL&P 1, Vol. I, Sec. I)

Selecting an appropriate site for a substation is a careful and multi-faceted process. CL&P's criteria for evaluating a substation site's viability include:

- proximity to distribution load pocket and existing feeders;
- proximity to existing transmission electrical circuits;
- ease of access;
- earthwork requirements;
- sufficient size and shape;
- zoning and land-use constraints;

- wildlife and habitat;
- wetlands, vernal pools, watercourses and floodplains; and
- proximity to public water supply watershed and/or aquifer protection areas.

(CL&P 1, Vol. I, p. I-3)

Five sites in addition to the Property were evaluated:

- Terminus of Post Office Lane (between I-95 and Metro-North Railroad);
- Interstate Right-of-Way, north of Sherwood Island Connector;
- West of existing Sasco Creek Substation;
- Saugatuck Avenue at Exit 17, south side of I-95; and
- Wooded lot across from #247 Greens Farms Road.

(CL&P 1, Vol. I, Sec. I)

CL&P determined that the Property (6 New Creek Road) best satisfies the site evaluation criteria. Development of the Property would not have any long-term adverse effects on the environment and ecology, nor would it affect the scenic, historic and recreational values of the neighborhood. (CL&P 1, Vol. I, Sec. K) The Property is in the center of the distribution load pocket and immediately south of a multi-use transportation and energy infrastructure corridor, and has optimal connection opportunities to the existing distribution feeder network along New Creek Road, Greens Farms Road and Maple Lane. A substation at the Property allows for direct

connection to an adjacent 115-kV transmission circuit. (CL&P 1, Vol. I, Sec. I) The Property has direct access from New Creek Road and is of sufficient size and shape to provide for substantial landscaping for screening. Finally, the Property is zoned AAA Residential under the Town of Westport Zoning Regulations; public utility buildings and facilities necessary for the services of the surrounding residential area are a permitted use in such zone with a special permit and site plan approval. (CL&P 1, Vol. I, Bulk Filing, Westport Zoning Regulations; CL&P 1, Vol. I, p. I-4)

Terminus of Post Office Lane is unsuitable because site configuration would limit the ability to fit all required equipment within the substation; the site could only accommodate two transformers with no room for a mobile transformer position; connections to existing distribution network would require bundling several new overhead circuits onto one existing line on Greens Farms Road; potential wetland impacts would exist; the parcel would require an access/utility easement from third party that is not available. Moreover, this site is not available for purchase. (CL&P 1, Vol. I, p. I-4)

Interstate Right-of-Way, north of Sherwood Island Connector, was rejected due to its location west of the load pocket, its poor connection possibilities to the existing distribution network, the substantial earthwork that would be required and the site's limited access from the highway ramp. (CL&P 1, Vol. I, p. I-5)

West of existing Sasco Creek Substation was rejected because the site was constructed for the sole purpose of supplying traction power to Metro-North and, as such, CDOT will not allow permanent use of the Sasco Creek site for another purpose; and several neighboring residences are located in close proximity. (CL&P 1, Vol. I, p. I-6)

Saugatuck Avenue at Exit 17, south side of I-95, was also rejected because connection to existing transmission circuits would require extensive new infrastructure; numerous neighboring residences are located immediately to the south; and redevelopment would impact an existing business operation. (CL&P 1, Vol. I, p. I-6)

Wooded lot across from #247 Greens Farms Road was not selected as it would require extensive new infrastructure for connection to the existing 115-kV circuit, offer poor connection possibilities to existing distribution network and require substantial clearing and earthwork. A substation at this location would also be visible from several residences in the immediate area. (CL&P 1, Vol. I, p. I-7)

IV. ENVIRONMENTAL EFFECTS

(a) Electric and Magnetic Fields

All alternating current devices produce Electric and Magnetic Fields (“EMF”), which some suspect might cause adverse health effects, particularly for long-term exposures to above-

background magnetic field levels; however, there is no credible evidence of a causal link between such long-term exposures and adverse health effects. For many years, the focus of concern has been on magnetic fields (“MF”) and not on the electric fields. As the Council noted in its *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Lines in Connecticut*, dated December 14, 2007 (“BMP”), “ ... the weight of scientific evidence indicates that exposure to electric fields, beyond levels traditionally established for safety, does not cause adverse health effects ...” With the proposed Substation, the dominant source of MF on and beyond the property boundaries would not be from the Substation, but would continue to be from the existing power transmission lines (the 115-kV circuits numbered 1890 and 1130) and distribution lines. (CL&P 1, Vol. I, p. M-2) MF exposure from the Substation equipment beyond the fence line around the Substation would quickly fall to very low background levels. (CL&P 1, Vol. I, p. M-1) According to the Institute of Electrical and Electronic Engineers (“IEEE”), “[i]n a substation, the strongest fields around the perimeter fence come from the transmission and distribution lines entering and leaving the substation. The strength of the fields from equipment inside the fence decreases rapidly with distance, reaching very low levels at relatively short distances beyond substation fences”. (Council Administrative Notice Item 5, p. 20)

Likewise, any MF levels from the transmission lines and distribution lines would also fall to background levels over short distances because MF decreases as the distance increases from the source. Many locations along the Property line are at relatively long distances from the transmission circuits where MF levels from these circuits are at negligible levels. (CL&P 1, Vol. I, Sec. M)

Consistent with the Council's BMP, the design of the Substation incorporates field management practices as follows:

- The Substation has been located very close to an existing transmission line so that the lengths of Substation entry spans are very short.
- Optimum transmission circuit phasing would be retained to enhance MF cancellation. Under the modeled system conditions specified in the BMP, the magnetic field levels would increase at peak load by 0.08 mG at a point 300 feet south along Line West, and decrease by 0.12 mG at this same point during the seasonal peak average load, five years after the Substation is placed in service.
- The Substation equipment has been located at a sufficient distance from Property lines so that this equipment makes no noticeable contribution to MF levels along these Property lines.

(CL&P 1, Vol. I, p. M-12) Additionally, as shown on the General Arrangement, Plan & Section Views – CSC, the Substation includes more compact bus spacings within the 13.8 metal clad switchgear as compared to open bus. (CL&P 1, Vol. II, Exh. 1, Drawing 25805-92001)

Based on the IEEE and the International Commission on Non-ionizing Radiation Protection guideline limits for long-term public exposures to MF and science peer group reviews of epidemiological and laboratory studies, existing and post-Project, MF levels would not pose an undue safety or health hazard to persons or property at or adjacent to the Property. (CL&P 1, Vol. I, p. M-12)

(b) The Natural Environment and Wildlife

The natural environment will remain substantially unaffected by the development of the Substation. (CL&P 1, Vol. I, Sec. K) Development of the Substation would not result in any temporary or permanent direct impacts to on-site wetland areas. (CL&P 1, Vol. I, Sec. K) However, limited work is anticipated within a small 21,800 ± square foot portion of the area that extends 75 feet out from the unnamed perennial watercourse located on the Property and within a small 13,800 ± square foot portion of the area that extends 50 feet out from the unnamed perennial watercourse located on the Property. (CL&P 1, Vol. I, p. L-2)

After construction is complete, the Project will have no permanent adverse effects on the environment. (CL&P 1, Vol. I, Sec. K) CL&P would implement its Construction Best

Management Practices to minimize or eliminate potential adverse environmental effects during the construction phase of the Project. CL&P's Development and Management ("D&M") Plan for the Substation would also incorporate the mitigation measures outlined in the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. (CL&P 1, Vol. I, Sec. L)

The present site plan is a result of extensive discussions with Westport land-use officials. As previously noted herein, the P&Z and the ConComm provided comments during the location review and MCF processes; CL&P addressed those comments by revising the substation layout and site plan. (See CL&P 1, Vol. I, Exh. 6)

(c) No Adverse Effect on Wildlife in the Area

Construction of the Substation will not have significant adverse effects on vegetation, wildlife or habitat values. The majority of the Substation site will occupy what is currently a developed residential building lot. Any effects on wildlife and wildlife habitat will be minimal and limited to temporary disturbances during construction. The Property is currently used by wildlife species that are typically generalists, commonly found in the area, and adaptable to habitat modifications. The wetland habitat found on the Property would remain intact and the adjoining upland area to its east would be enhanced, ultimately increasing its wildlife value. Considering the habitat types found on the Property and surrounding area, species diversity and

abundance should be maintained after the Substation is completed and operational. (CL&P 1, Vol. I, p. K-5)

Based on current Department of Environmental Protection (“DEP”) Natural Diversity Data Base review criteria, the Substation does not present a potential conflict with any listed species or significant natural community. Moreover, CL&P received confirmation on June 19, 2008 and December 18, 2009 from the DEP that no extant populations of federal or state listed endangered, threatened and special concern species occur at the Property. (CL&P 1, Vol. I, p. K-5; CL&P 1, Vol. II, Exh. 4)

(d) No Effect On Nearby Resources

The development of the Substation will not have significant long-term adverse effects on the scenic, historic or recreational values of the surrounding area. (CL&P 1, Vol. I, Sec. K) In its letter to CL&P, the Connecticut State Historic Preservation Office indicated that (a) it reviewed the reconnaissance survey prepared by Heritage Consultants LLC and found that the archival and archaeological methodologies employed by it were consistent with their *Environmental Review Primer for Connecticut’s Archaeological Resources*; (b) the Property lacks historic and architectural importance and is not eligible for the National Register of Historic Places and it concurs with Heritage Consultants LLC’s assessment that no additional archaeological investigations appear warranted with respect to the proposed undertaking; and

(c) it believes that the proposed undertaking will have no effect upon Connecticut's cultural heritage. (CL&P 1, Vol. I, Sec. K; CL&P 1, Vol. II, Exh. 5)

(e) No Adverse Effect On Public Health And Safety

Overall, the main source of noise in the area is traffic noise from I-95. The increase in Property line sound pressure levels due to the addition of the Substation would be negligible. Due to the existing elevated background levels, the projected noise levels generated by the Substation at the Property boundaries would be below applicable noise regulations. (CL&P 1, Vol. I, p. K-6)

During construction, some large construction equipment will be in use and activities conducted that will generate noise. To the largest extent possible, general site construction hours would be limited to 7 a.m. to 5 p.m., Monday through Friday. Because of the difficulty of scheduling outages for interconnecting to the transmission system, there could be relatively short periods when some work will need to take place outside of normal work hours. This work will occur during off-peak electrical demand hours and be coordinated with Town officials. (CL&P 1, Vol. I, Secs. K and H)

The Substation would have low-level lighting for safety and security purposes. These lights would be recessed or activated manually to minimize visual effects at night. Lighting would not affect existing residences in the vicinity of the Property. Additional lighting

capability would exist in the Substation to allow for work at night under abnormal or emergency conditions. (CL&P 1, Vol. I, p. K-7; Tr. 1, pp. 31-32)

The transformers within the Substation would contain insulating fluid. CL&P would install sumps to serve as oil-spill containment reservoirs around the transformers. The sumps would be sized with sufficient capacity to contain a spill in the event of an inadvertent release of oil. CL&P plans to install an Imbiber Beads Drain Protection System® for the sump, similar to containment systems installed at many other CL&P substations, including Shunock Substation in North Stonington. (CL&P 1, Vol. I, p. J-2)

The Substation would not result in adverse impacts to coastal resources. (CL&P 1, Vol. I, Sec. K)

(f) Efforts to Mitigate the Effects of the New Substation

Section L of the Application sets forth customary mitigation measures that CL&P would adhere to such as the D&M Plan (including CL&P's 2005 Construction Best Management Practices), the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control* and post-construction stabilization with topsoil and seeding with a New England conservation/wildlife mix. In addition, it is noteworthy that CL&P, in its planning process for

the Project, carefully included design features as follows:

1. An extensive landscape plan that involved the collaboration of the Project team, CL&P's environmental consultant VHB and a local landscape architect and wetlands scientist, William Kenny;
2. The lowering of the existing grade on site to reduce the visibility of the substation equipment; and
3. The use of minimal lighting.

(CL&P 1, Vol. II, Exh. 1; CL&P 1, Vol. I, p. K-7)

(g) CL&P's Application Should Not Be Denied

Based on the documents in the Record, the proposed Substation would have a minimal effect on the present environment. More importantly, the Project would provide a permanent solution to temporary measures and meet the present vital electric reliability need that will only intensify as Westport's load continues to grow. The extensive mitigation measures, participation of the local land-use agencies, and the thoughtful design and careful location of the proposed facility meet and exceed all the requirements for a Certificate of Environmental Compatibility and Need.

V. PUBLIC COMMENT

At the hearing, three residents (two of whom were husband and wife) of the Turkey Hill South neighborhood expressed opposition to the siting of the Sherwood Substation at 6 New Creek Road. (Tr. 2, pp. 11-31, Burke, Boyd-Mullineaux and Mullineaux) Significantly, the Turkey Hill South neighborhood is located to the west of the proposed Sherwood Substation site and is naturally buffered by an active railroad (over 200 trains daily), a busy Interstate I-95 and existing transmission line corridor, and a local road. (CL&P 1, Vol. I, Fig. H-2; Tr. 2, pp. 49-51, Dubuque, Libertine) Their opposition was based primarily on lack of personal notice to them, fears about magnetic fields and concerns about property devaluation arising from the visibility of the proposed Sherwood Substation. One other resident, Francis Henkels of 35 Maple Lane, offered some concerns about the site selection that are addressed in the Application; Mr. Henkels indicated that he had not reviewed that information.

(a) Notice / Public Process

As indicated in the Application and during the Council hearings, CL&P provided extensive public outreach and conducted a very open dialogue with town agencies and the

immediate neighborhood. Such outreach included:

- 5/19/09 Letter to 28 abutters and immediate neighbors with information regarding local land use meetings, CL&P telephone number and e-mail contact (CL&P 1, Vol. II, Exh. 10; Tr. 1, p. 48, Gagnon)

4 returned letters – CL&P (Chris Swan) hung door hangers at Increase Lane houses and sent a letter to an owner’s home address in another town (Tr. 1, p. 49, Gagnon)
- 6/9/09 Greens Farms Association meeting (CL&P 1, Vol. I, p. R-1)
- 6/9/09 Greens Farms Academy 1st meeting (CL&P 1, Vol. I, p. R-1); Letter to J. Hartwell, Head of the Academy, dated 12/22/09 (reflects meetings “over the past several months”) (CL&P 3)
- 9/29/09 Preliminary MCF Filing with First Selectman, ConComm, Department of Public Works, Town Librarian (CL&P 1, Vol. I, p. Q-3)
- 10/14/09 MCF Filing with First Selectman & CEAB (CL&P 1, Vol. I, p. R-2)
- 12/17/09 Certified Letter to abutters and nearby residents (25 total) regarding CSC filing (CL&P 1, Vol. II, Exh. 9)
- 12/17/09 Legal notice published in Norwalk Hour (CL&P 1, Vol. II, Exh. 8)
12/22/09
- 12/18/09 Legal notice published in The Westport News (CL&P 1, Vol. II, Exh. 8)
12/23/09
- 12/29/09 Application Filing; Service on First Selectman, P&Z, ConComm (CL&P 1, Vol. II, Exh. 7)
- 2/24/10 Siting Council Legal Notice (Record)
- 3/16 /10 Signs Posted (existing and proposed driveway) (CL&P 5, Attach. 6)

In addition, once CL&P learned of their concerns, Christopher Swan, Director of Municipal Relations, Siting and Permitting, provided prompt responses to e-mail communications and met with neighbors on a Sunday to address their concerns. (Tr. 2, p. 12, Burke)

CL&P also participated in meetings with town agencies, meeting agendas were posted, public hearings held, and all meetings at Town Hall were televised, as follows:

ConComm/P&Z Joint Site Visit	6/8/09
ConComm	6/17/09
	11/18/09 (after MCF filing)
P&Z	6/11/09
	11/19/09 (after MCF filing)
Architectural Review Board (@ P&Z's request)	7/14/09

(CL&P 1, Vol. I, Sec. O; Tr. 2, pp. 49-50, Dubuque)

Several speakers acknowledged the public process. First Selectman Joseloff testified as to the active involvement of town officials and land use agencies, emergency service personnel

and town planning staff. In addition, Mr. Joseloff noted CL&P's public outreach efforts:

And we're grateful for the utilities reaching out as best they could to the municipal government and to residents, the neighborhood associations, and to Greens Farms Academy.

(Tr. 2, p. 7, Joseloff)

Furthermore, Ms. Janet Hartwell, Head of School for Greens Farms Academy, stated:

And I'm – I was very surprised to know that our neighbors did not know of this even though I do know that there's been a process followed by CL&P in terms of meetings and publicity in the newspapers. However, it was a surprise to know that our neighbors did not know.

(Tr. 2, p. 41, Hartwell)

(b) EMF

The Council is well-versed in issues concerning electric and magnetic fields due to the extensive study in the course of the adoption of the Council's BMP in 2007. Although the BMP apply to transmission facilities and not substations, the findings in the BMP as to health issues are instructive:

The Council recognizes that a causal link between power-line MF exposure and demonstrated health effects has not been established, even after much scientific investigation in the U.S. and abroad.

(BMP at p. 4)

Moreover, since that date, in Docket 370A, Exponent, Inc. prepared an update entitled "EMF and Health: Review and Update of the Scientific Research December 2007 – June 2008", concluding:

A systematic literature review was performed and epidemiologic and *in vivo* studies published after the WHO report are evaluated critically in this report. These recent studies do not provide evidence to alter the opinion of the WHO and other health and scientific agencies that the research evidence is insufficient to suggest that electric or magnetic fields are a cause of cancer or any other disease process at the levels we encounter in our everyday environment.

(CL&P Administrative Notice, Item 19, p. 5-1). Most recently, the Council stated in its Opinion in Docket 370A:

There is no evidence that might alter the scientific consensus articulated in the Council's 2007 EMF BMP document.

(Opinion at p. 12) It is also noteworthy that neither the Department of Public Health or the DEP have expressed any concerns in this docket about the effects of any electric or magnetic fields.

Furthermore, Mr. Carberry specifically addressed the concerns about magnetic fields in his testimony concluding, based on his expertise, "one needs only to get at a distance of about 200 feet away from the nearest transmission line ... before fields are below one milligauss under any of our mode 1 scenarios" and that for houses "500 feet away from the line":

They'll have little to nothing for contribution from the transmission lines or the substation.

(Tr. 1, pp. 45-46, Carberry) As shown on Drawing C-1, the houses of both Mr. Burke and Mr. and Mrs. Mullineaux are well in excess of 1,500 feet from the proposed Sherwood Substation, on the opposite side of the railroad, I-95 and Greens Farms Road. (CL&P 1, Vol. II, Exh. 1)

Finally, Ms. Hartwell testified at the evening hearing:

They [CL&P] gave us a fair amount of information. We also did our own – conducted our own research headed up by our science department chair through our physicist Dr. Loftner (phonetic) [sic] and I also have spoken to a medical pediatric oncologist, all of whom have voiced a level of concern, but also have concluded that the studies themselves are inconclusive. Some people draw correlations, but overall I believe that they feel the studies are somewhat inconclusive, but nevertheless that's a concern.

(Tr. 2, p. 40, Hartwell)

(c) Visibility / Property Values

As to the view from the Turkey Hill Road neighborhood, Mr. Libertine testified that other than the “very tops of the new interconnecting poles”:

I don't believe those homes are going to have direct views of the substation proper. I've driven those roads. I've not been on the properties there, but having driven the local road system several times, it's clear that today there are views of traffic along Green Farms Road, and then moving south, I-95, which is elevated, and

the parking area for the rail station, as well as the catenaries and the existing structures that support the overhead lines today.

(Tr. 1, pp. 38-39, Libertine)

There is no evidence in the Record to support claims of property devaluation arising from substations; it is especially doubtful that such claims are valid here where there is significant railroad infrastructure, a transmission line corridor, an active interstate highway and a local road intervening between the Sherwood Substation site and the Turkey Hill South residents.

(See generally CL&P 1, Vol. I, Figures; CL&P 1, Vol. II, Exh. 1)

VI. CONCLUSION

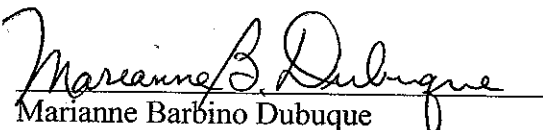
The Connecticut legislature has entrusted the Council with balancing the need for adequate and reliable public utility services with protection of the environment and ecology of the State. CL&P's application in this docket is based on a demonstrated need for a new and larger bulk power substation in Westport where the distribution system is nearing its limit and a permanent solution to replace temporary measures is critical. CL&P's proposal provides a permanent solution and addresses that need in a manner that minimally affects the environment and ecology of the State and minimizes damage to those resources. Significantly, CL&P has undertaken an extensive town and public outreach effort that resulted in meaningful dialogue

with Town officials and, in so doing, CL&P received support from the First Selectman, the P&Z and ConComm for a new substation at the location CL&P proposes in this Application.

Accordingly, CL&P respectfully requests that its Application for a Certificate of Environmental Compatibility and Public Need for the Sherwood Substation be approved.

Respectfully submitted,

APPLICANT,
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