



**Northeast
Utilities System**

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5000

Robert E. Carberry
Manager-Transmission Siting and Permitting
Tel: (860) 665-6774

November 7, 2007

VIA HAND-DELIVERY

Daniel F. Caruso, Chairman
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Dear Judge Caruso:

Pursuant to C.G.S. § 16-50(a), Northeast Utilities Service Company, on behalf of The Connecticut Light and Power Company ("CL&P"), herewith submits an original and 20 copies of an Application for a Certificate of Environmental Compatibility and Public Need ("Certificate") for the construction of a new substation on a 20-acre site located north of Rood Avenue and west of Shelley Avenue in Windsor, Connecticut. The site is centrally located to the Windsor load area and allows for connection into the existing 115-kV transmission line located on the western portion of the property. The Substation will be placed in the center of the property, which is entirely wooded except for the transmission line corridor. The mature trees surrounding the substation will provide screening.

The proposed substation would improve electric distribution reliability and increase the capacity to transform electricity from 115 kV to 23 kV, in response to the increasing peak-load demands for electricity in the Town of Windsor and surrounding areas.

The Application package consists of a report along with maps, drawings, and various exhibits. In accordance with C.G.S. § 16-50/ (b), CL&P is providing you with the following additional items:

- a copy of the cover letter sent with a copy of this application to government officials and agencies;
- an original affidavit of service and service list (see Volume 2, Exhibit 8);
- an affidavit attesting to the fact that public notices were published in newspapers with a circulation in the general vicinity of the proposed substation (see Volume 2, Exhibit 9);
- a copy of the certified letters sent to abutting and nearby property owners informing them of CL&P's Application and a list of those notified (see Volume 2, Exhibit 10); and
- an original affidavit regarding notice to abutters and nearby owners of the project (see Volume 2, Exhibit 10).

CL&P is also enclosing the following:

- Bulk Filing #1, which consists of municipal zoning, planning, planning and zoning, conservation and inland wetlands regulations and by-laws for Windsor;
- Bulk Filing #2, which consists of four sets of full-size Site Plan Drawings (the Application includes reduced plans);
- An electronic copy of the application on disc; and
- Two checks, one in the amount of \$13,800.00, representing the Application Filing Fee and one in the amount of \$25,000.00 representing the Municipal Participation Fee.

CL&P respectfully requests that Bulk Filing #1 and #2 be accepted as a bulk filing.

Please advise us if any additional material is necessary for the Council's review of this application package.

Respectfully submitted,

NORTHEAST UTILITIES SERVICE COMPANY

By

A handwritten signature in cursive script, appearing to read "Ralph Clark", is written over a horizontal line.



**Northeast
Utilities
System**

107 Selden Street, Berlin, CT 06037

Northeast Utilities Service Company
P.O. Box 270
Hartford, CT 06141-0270
(860) 665-5000

Marcella Ferrara
Project Manager
Transmission Siting and Permitting
Tel: (860) 665-2409

November 7, 2007

TO THE FEDERAL, STATE, AND LOCAL GOVERNMENTAL AGENCIES AND
OFFICIALS REFERRED TO IN § 16-50l(b) OF THE CONNECTICUT GENERAL
STATUTES:

Attached is an application the Connecticut Light and Power Company ("CL&P") has filed today, November 7, 2007 with the Connecticut Siting Council. The application requests the issuance of a Certificate of Environmental Compatibility and Public Need for the construction of a new substation in the Town of Windsor on CL&P's 20-acre property located north of Rood Avenue Road and west of Shelley Avenue. The site is centrally located to the Windsor load area and allows for connection into the existing 115-kV transmission line located on the western portion of the property. The mature trees surrounding the substation will provide screening.

If you would like an electronic copy of the application, please contact Marcella Ferrara, Project Manager, at CL&P (860-665-2409).

Section 16-50n(a) of the Connecticut General Statutes provides that each person entitled to receive a copy of an application under § 16-50l may become a party to the proceeding before the Council by giving the Council a notice of intent to be a party.

Respectfully submitted,

NORTHEAST UTILITIES SERVICE COMPANY

AFFIDAVIT OF SERVICE OF APPLICATION

State of Connecticut)
)
County of Middlesex) ss: Middletown, Connecticut

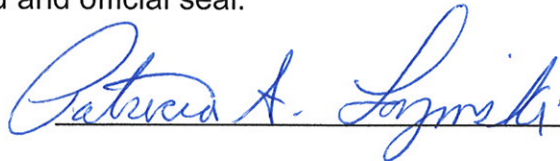
Pursuant to Section 16-50(b) of the Connecticut General Statutes, I hereby certify that on November 7, 2007, I caused a copy of the **Application to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for the Rood Avenue Substation** to be served upon the individuals and agencies set forth on the attached list by first class mail or by courier.



Michael Libertine

On this the 7th day of November, 2007, before me, the undersigned officer, personally appeared Michael Libertine, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I hereunto set my hand and official seal.



Notary Public

My Commission Expires: August 31, 2010

AFFIDAVIT REGARDING PUBLICATION OF LEGAL NOTICE

State of Connecticut)
) ss: Berlin, Connecticut
)
County of Hartford)

Pursuant to section 16-501(b) of the Connecticut General Statutes, on November 2, 2007 and November 5, 2007, in the Hartford Courant newspaper, Legal notices were published of the intent of The Connecticut Light and Power Company to file an Application with the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for the construction of the proposed Rood Avenue Substation and associated facilities at 264 Rood Avenue and 25 Shelley Avenue, Windsor, Connecticut, including a summary of the Application and the date on or about which it would be filed.



David B. Lukehart III
Project Siting and Permitting Specialist
Northeast Utilities

On this the 6th day of November, 2007, before me, the undersigned officer, personally appeared David B. Lukehart III known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I hereunto set my hand and official seal.



Notary Public

My Commission Expires:

My Commission Exp. Mar. 31, 2011

CARMODY & TORRANCE LLP
Attorneys at Law

50 Leavenworth Street
Post Office Box 1110
Waterbury, Connecticut
06721-1110
Telephone: 203 573-1200
Facsimile: 203 575-2600
www.carmodylaw.com

Robert S. Golden Jr.
Of-Counsel

Direct: 203-575-2630
rgolden@carmodylaw.com

**SAMPLE LETTER OF NOTICE TO OWNERS OF PROPERTY
ABUTTING PROPOSED ROOD AVENUE SUBSTATION**

October 31, 2007

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

XXXXXX XXXXX
XXXXXX XXXX
Windsor, CT 06095

Re: Notice to Owners of Property Abutting Proposed Rood Avenue Substation

Dear Sir/Madam:

Pursuant to Connecticut General Statutes Section 16-50/(b), The Connecticut Light and Power Company (CL&P) is providing notice of its intent to apply to the Connecticut Siting Council on or about November 7, 2007 for a Certificate of Environmental Compatibility and Public Need for a proposed Substation, including the construction of associated equipment, in Windsor, on property owned by CL&P, located at 264 Rood Avenue and 25 Shelley Avenue, Windsor, Connecticut, which abuts or is near your property. Details regarding the project are set forth in the enclosed Public Notice.

For further information about this project, please contact:

Ms. Marcella Ferrara
Project Manager, Transmission Business Projects
The Connecticut Light and Power Company
P.O. Box 270
Hartford, CT 06141
(860) 665-2409
www.transmission-nu.com

Very truly yours,

Robert S. Golden, Jr.

Enclosure

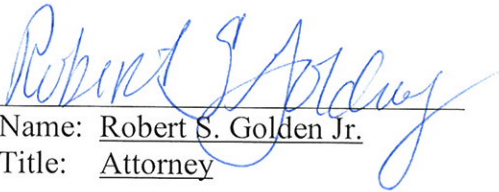
AFFIDAVIT OF ABUTTERS LEGAL NOTICE

STATE OF CONNECTICUT)

) ss: Waterbury, Connecticut

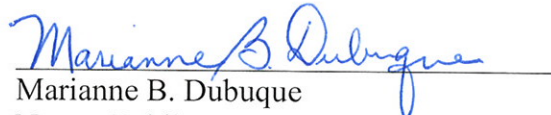
COUNTY OF NEW HAVEN)

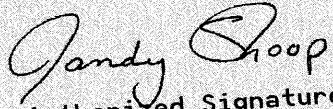
Pursuant to Section 16-501(b) of the Connecticut General Statutes, I hereby certify that on October 31, 2007 I caused notice of the intent of The Connecticut Light and Power Company to file an Application with the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need for the Rood Avenue Substation, 264 Rood Avenue and 25 Shelley Avenue, Windsor, Connecticut, to be sent by certified mail to each person who is appearing of record as the owner of property which abuts and/or is nearby the proposed site at 264 Rood Avenue and 25 Shelley Avenue, Windsor, Connecticut, on which the facility would be located. A summary of the Application and the date on or about which it would be filed was included in said notice.


Name: Robert S. Golden Jr.
Title: Attorney

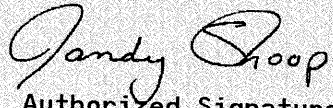
On this the 2nd day of November, 2007, before me, the undersigned officer, personally appeared ROBERT S. GOLDEN JR. known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same for the purposes therein contained.

In Witness Whereof, I hereunto set my hand and official seal.


Marianne B. Dubuque
Notary Public
My Commission Expires: 9/30/2010

NORTHEAST UTILITIES			51-44 119
PAY	Check No.	Date	Payment Amt
THIRTEEN THOUSAND NINE HUNDRED & 00/100***** DOLLAR	0000026592	11/05/07	\$13,900.00 USD
TO THE ORDER OF	STATE OF CONNECTICUT TREASURER CONNECTICUT SITING COUNCIL 10 FRANKLIN SQ NEW BRITAIN CT 06051		 Authorized Signature
Bank of America	THIS CHECK HAS A BROWN BACKGROUND VOID AFTER 6 MONTHS		

⑈026592⑈ ⑆011900445⑆ 000000070786⑈

NORTHEAST UTILITIES			51-44 119
PAY	Check No.	Date	Payment Amt
TWENTY FIVE THOUSAND & 00/100***** DOLLAR	0000026591	11/05/07	\$25,000.00 USD
TO THE ORDER OF	STATE OF CONNECTICUT TREASURER CONNECTICUT SITING COUNCIL 10 FRANKLIN SQ NEW BRITAIN CT 06051		 Authorized Signature
Bank of America	THIS CHECK HAS A BROWN BACKGROUND VOID AFTER 6 MONTHS		

⑈026591⑈ ⑆011900445⑆ 000000070786⑈



**Connecticut
Light & Power**

The Northeast Utilities System

**APPLICATION TO THE
CONNECTICUT SITING COUNCIL**

FOR A

**CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED**

FOR THE

Rood Avenue Substation

**264 Rood Avenue and 25 Shelley Avenue
Windsor, Connecticut**

November 2007

Submitted by:

**The Connecticut Light & Power Company
107 Selden Street
Berlin, CT 06037**

Volume 1 of 2

Volume 1 Application

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CONNECTICUT SITING COUNCIL APPLICATION GUIDELINES CHECKLIST

ELECTRIC SUBSTATION FACILITY

June 2007

This application guide is to assist applicants in filing for a Certificate of Environmental Compatibility and Public Need (Certificate) from the Connecticut Siting Council (Council) for the construction of an electric substation facility. Such facilities are defined in General Statutes

§ 16-50i (a) (4).

Applicants should consult General Statutes §§ 16-50g through 16-50aa and Sections 16-50j-1 through 16-50z-4 of the Regulations of Connecticut State Agencies to assure complete compliance with the requirements of those sections. Where appropriate, statutory and regulatory references are noted below.

Pre-Application Process (General Statutes § 16-50/ (e)) **Refer to Municipal Consultation Filing in separate Bulk attachment**

"....at least 60 days prior to the filing of any application with the Council, the applicant shall consult with the municipality in which the facility may be located and with any other municipality required to be served with a copy of the application under subdivision (1) of subsection (b) of this section [any adjoining municipality having a boundary not more than 2500 feet from such facility] concerning the proposed and alternative sites of the facility....Such consultation with the municipality shall include, but not be limited to, good faith efforts to meet with the chief elected official of the municipality. At the time of the consultation, the applicant shall provide the chief elected official with any technical reports concerning the public need, the site selection process and the environmental effects of the proposed facility. The municipality may conduct public hearings and meetings as it deems necessary for it to advise the applicant of its recommendations concerning the proposed facility. Within 60 days of the initial consultation, the municipality shall issue its recommendations to the applicant. No later than 15 days after submitting the application to the Council, the applicant shall provide to the Council all materials provided to the municipality and a summary of the consultations with the municipality including all recommendations issued by the municipality."

I. Application to Municipal Agencies (General Statutes § 16-50x (d))

Municipal zoning and inland wetland agencies may regulate and restrict the location of an electric substation facility. Such action must be taken within 30 days of application filed with the Council. Orders made by the municipal zoning and inland wetland agencies may be appealed within thirty days by any party or municipality required to be served with a copy of the application.

Refer to Volume 2, Exhibit 11

II. Quantity, Form, and Filing Requirements (Regs., Conn. State Agencies § 16-50j-12)

- A. Except as may be otherwise required, at the time applications are filed with the Council, there shall be furnished to the Council an original and 20 copies. All filings from the applicant, parties, or interveners must consist of original and 20 copies, labeled with the docket number, properly collated and paginated, and bound. An electronic version of all filings, as appropriate, should be provided.

Refer to Volumes 1 and 2 of this CSC Filing

- B. Bulk filing should be provided of not less than four (4) copies of the applicable town zoning and Inland wetlands regulations (including a map showing the location of inland wetlands if relevant) and plan of development and any other publicly available material in support of the application.

Refer to Volumes 1 and 2 of this CSC Filing

- C. Applications filed for the purpose of any proceeding before the Council shall be printed or typewritten on paper cut or folded to letter size, 8 1/2 by 11 inches. Width of margins shall be not less than one inch. The impression shall be on only one side of the papers, unless printed, and shall be double spaced, except that quotations in excess of five typewritten lines shall be single spaced and indented. Mimeographed, multigraphed, photoduplicated, or the like copies will be accepted as typewritten, provided all copies are clear and permanently legible. In accordance with the State Solid Waste Management Plan, all filings should be submitted on recyclable paper, primarily regular weight white office paper. Applicants should avoid using heavy stock paper, colored paper, and metal or plastic binders and separators.

Refer to Volumes 1 and 2 of this CSC Filing

- D. Every original shall be signed by the applicant or by one or more attorneys in their individual names on behalf of the applicant. All applications shall be filed at the office of the Council, 136 Main Street, Suite 401, New Britain, Connecticut 06051. Service of all documents and other papers filed as applications, briefs, and exhibits, but not limited to those categories, shall be by personal delivery or by first class mail to the Council and all parties and interveners to the proceeding, unless service has been waived.

Refer to Volumes 1 and 2 of this CSC Filing

- E. Any exhibits, sworn written testimony, data, models, illustrations, and all other materials that the applicant deems necessary or desirable to support the granting of the application shall be attached to the application. In addition, annexed materials shall include such exhibits, sworn written testimony, and other data that any statute or regulations may require. The applicant may request that administrative notice be taken of and refer in the application to portions of other Council docket records and generic hearings or statements prepared by the Council as a result of generic hearings.

Refer to Volumes 1 and 2 of this CSC Filing

- F. Applicants may present material in a sequence and format most appropriate for the particular proposal. To allow timely Council review, include with the application a copy of this form with page references for each item required in Section VII below.

Included Herein

- G. Potential applicants are urged to carefully review General Statutes §§ 16-50/(e), 16-50i and 16a-7c to determine whether the proposed project falls within the Connecticut Energy Advisory Board (CEAB) "request-for-proposal" process.

**Pursuant to Conn. Gen. Stats. § 16-50/ (a) (2), this project is exempt from this process.
See Volume 1, Section G.2**

III. Application Filing Fees (Regs., Conn. State Agencies § 16-50v-la)

The filing fee for an application is determined by the following schedule:

<u>Estimated Construction Cost</u>	<u>Fee</u>
Up to \$5,000,000	0.05% or \$1,000.00, whichever is greater;
Above \$5,000,000	0.1% or \$25,000.00, whichever is less.

All application fees shall be paid to the Council at the time an application is filed with the Council. Additional assessments may be made for expenses in excess of the filing fee. Fees in excess of the Council's actual costs will be refunded to the applicant.

**Filing Fees accompany CSC
Application**

IV. Proof of Service (General Statutes § 16-50/ (b))

Each application shall be accompanied by proof of service of such application on:

See Volume 1, Section Q

- A. The chief elected official, the zoning commission, planning commission, the planning and zoning commissions, and the conservation and wetlands commissions of the site municipality and any adjoining municipality having a boundary not more than 2500 feet from the facility;
- B. The regional planning agency that encompasses the site municipality;
- C. The State Attorney General;
- D. Each member of the Legislature in whose district the facility is proposed;
- E. Any federal agency, department, commission or instrumentality which has jurisdiction over the proposed facility; and
- F. The state departments of environmental protection, public health, public utility control, economic and community development, and transportation; the council on environmental quality; the State Historic Preservation Officer and the office of policy and management.

V. Public Notice (General Statutes § 16-50/ (b))

Notice of the application shall be published at least twice prior to the filing of the application in a newspaper having general circulation in the site municipality or municipalities. The notice shall state the name of the applicant, the date of filing, and a summary of the application. The notice must be published in not less than ten point type.

See Volume 1, Section Q

VI. Notice to Abutting Landowners (General Statutes § 16-50/ (b))

Notice of the application shall be sent by certified or registered mail to all abutting landowners of the proposed and alternative sites of the facility. Notice shall be sent at the same time that notice of the application is given to the general public.

See Volume 1, Section Q

The application shall be accompanied by an affidavit of notice to all abutting landowners and an affidavit of publication each time notice of application is published.

See Volume 1, Section Q

The Council also advises each applicant that at least ten business days prior to the public hearing such applicant should erect and maintain in a legible condition a sign not less than six feet by four feet upon the site at the entrance to the property from a public road where such facility is to be located. The sign shall set forth the name of the applicant, the type of facility, the public hearing date, and contact information for the Council (Web site and phone number).

Example:

PUBLIC NOTICE:

CL&P has filed an application with the Connecticut Siting Council (Council) for construction of an electric substation facility on this site. The Council will hold a public hearing on March 27, 2004 at the Newington Town Hall Auditorium at 3 and 7 p.m. A copy of the application can be reviewed at the town hall or at the Council offices in New Britain, CT. For more information, please contact the Council by telephone at 860-827-2935, electronically at www.ct.gov/csc, or by mail at 10 Franklin Square, New Britain, Connecticut 06051.

VII. Contents of Application (General Statutes § 16-50/ (a) (1) and Regulations § 16-50j-74)

An application for a Certificate for the construction of an electric substation facility should include or be accompanied by the following:

A. An executive summary of the first page of the application with the address of the facility. A brief description and the location of the proposed facility, including an artist's rendering and/or narrative describing its appearance.

See Volume 1, Section A

1. A statement of the purpose for which the application is being made.

See Volume 1, Section B

2. A statement describing the statutory authority for such application.

See Volume 1, Section C

3. The exact legal name of each person seeking the authorization or relief and the address or principal place of business of each such person. If any applicant is a corporation, trust association, or other organized group, it shall also give the state under the laws of which it was created or organized.

See Volume 1, Section D

4. The name, title, address, and telephone number of the attorney or other person to whom correspondence or communications in regard to the application are to be addressed. Notice, orders, and other papers may be served upon the person so named, and such service shall be deemed to be service to the applicant.

See Volume 1, Section E

B. A description of the proposed facility including:

See Volume 1, Section A

1. Access roads and utility services;
2. Special design features;
3. The following list should be included where applicable;
 - a. Itemized estimated costs;
 - b. Comparative costs of alternatives considered;
 - c. Facility service life;
 - d. Bus and specifications;
 - e. Overhead take-off design, appearance, and heights, if any;
 - f. Length of interconnections to transmission and distribution;
 - g. Initial and design voltages and capacities;
 - h. Rights-of-way and access-way acquisition;
 - i. Transmission connections and distribution feeders; and
 - j. Service area;

C. A statement and full explanation of why the proposed facility is needed and how the facility would conform to a long-range plan for the expansion of the electric power grid serving the state and interconnected utility systems that would serve the public need for adequate, reliable, and economic service, including:

See Volume 1, Section G

1. A description and documentation of the existing system and its limitations;
2. Justification for the proposed in-service date;
3. The estimated length of time the existing system is judged to be adequate with and without the proposed facility;

4. Identification of system alternatives with the advantages and disadvantages of each; and
5. If applicable, identification of the facility in the forecast of loads and resources pursuant to General Statutes § 16-50r.

D. A statement of the benefits expected from the proposed facility with as much specific information as is practicable.

See Volume 1, Section G

E. A description of the named sites, including:

1. The most recent U.S.G.S. topographic quadrangle map (scale 1 inch = 2,000 feet) marked to show the site of the facility and any significant changes within a one mile radius of the site;

See Volume 1, Sections A and H

2. A map (scale not less than 1 inch = 200 feet) of the lot or tract on which the facility is proposed to be located showing the acreage and dimensions of such site, the name and location of adjoining public roads or the nearest public road, and the names of abutting owners and the portions of their lands abutting the site;

See Volume 1, Section H, and Volume 2, Exhibit 1

3. A site plan (scale not less than 1 inch = 40 feet) showing the proposed facility, set back radius, existing and proposed contour elevations, 100 year flood zones, waterways, wetlands, and all associated equipment and structures on the site;

See Volume 1, Section H, and Volume 2, Exhibit 1

- a. Settled areas;
 - b. Schools and daycare centers;
 - c. Hospitals;
 - d. Group homes;
 - e. Forests and parks
 - f. Recreational areas;
 - g. Seismic areas;
 - h. Scenic areas;
 - i. Historic areas;
 - j. Areas of geologic or archaeological interest;
 - k. Areas regulated under the Inland Wetlands and Watercourses Act;
 - l. Areas regulated under the Tidal Wetlands Act and Coastal Zone Management Act;
 - m. Public water supplies;
 - n. Hunting or wildlife management areas; and
 - o. Existing transmission lines within one mile of the site.
4. Where relevant, a terrain profile showing the proposed facility and access road with existing and proposed grades; and

See Volume 2, Exhibit 1

4. The most recent aerial photograph (scale not less than 1 inch = 1,000 feet) showing the proposed site, access roads, and all abutting properties.

See Volume 1, Section H, and Volume 2, Exhibit 1

F. A justification for selection of the proposed site including a comparison with alternative sites which are environmentally, technically, and economically practicable. Include enough information for a complete comparison between the proposed site and any alternative site contemplated.

See Volume 1, Section 1

G. Safety and reliability information, including:

See Volume 1, Section J

1. Provisions for emergency operations and shutdowns; and
2. Fire suppression technology.

H. A description of the effect that the proposed facility would have on the environment, ecology, and scenic, historic, and recreational values, including effects on:

See Volume 1, Section K

1. Public health and safety;
2. Local, state, and federal land use plans;
3. Existing and future development;
4. Roads;
5. Wetlands;
6. Wildlife and vegetation, including rare and endangered species, and species of special concern, with documentation by the Department of Environmental Protection Natural Diversity Data Base;
7. Water supply areas;
8. Archaeological and historic resources, with documentation by the State Historic Preservation Officer; and
9. Other environmental concerns identified by the applicant, the Council, or any public agency.

I. Sight line graphs to the named sites from visually impacted areas such as residential developments, recreational areas, and historic sites;

To Be Provided

J. A statement explaining mitigation measures for the proposed facility including:

See Volume 1, Section L

1. Construction techniques designed specifically to minimize adverse effects on natural areas and sensitive areas;
2. Special routing or design features made specifically to avoid or minimize adverse effects on natural areas and sensitive areas;
3. Establishment of vegetation proposed near residential, recreational, and scenic areas; and

4. Methods for preservation of vegetation for wildlife habitat and screening.

K. Justification that the location of the proposed facility would not pose an undue safety or health hazard to persons or property at the site of the proposed facility including:

See Volume 1, Section M

1. Measurements of existing electric and magnetic fields (EMF) at site boundaries, and at boundaries of adjacent schools, daycare facilities, playgrounds, and hospitals, with extrapolated calculations of exposure levels during expected normal and peak normal line loading;
2. Calculations of expected EMF levels at the above-listed locations that would occur during normal and peak normal operation of the facility; and
3. A statement describing consistency with the Council's "Best Management Practices for Electric and Magnetic Fields," as amended.

L. A schedule of the proposed program for right-of-way or property acquisition, construction, rehabilitation, testing, and operation.

See Volume I, Section N

M. A statement of estimated costs for site acquisition, construction, and equipment for a facility at the various proposed sites of the facility, including all candidates referred to in the application;

See Volume 1, Section F.1

N. Such information as any department or agency of the State exercising environmental controls may, by regulation, require including:

See Volumes 1 and 2

1. A listing of any federal, State, regional, district, and municipal agencies, including but not limited to the Federal Aviation Administration; State Historic Preservation Officer; State Department of Environmental Protection; and local conservation, inland wetland, and planning and zoning commissions with which reviews were conducted concerning the facility, including a copy of any agency position or decision with respect to the facility; and

See Volume 1, Section O

2. The most recent conservation, inland wetland, zoning, and plan of development documents of the municipality, including a description of the zoning classification of the site and surrounding areas, and a narrative summary of the consistency of the project with the Town's regulations and plans.

See Volume 1 and Bulk Filing

O. Such information the applicant may consider relevant.

See Volume 1, Section R

P. Description of proposed site clearing for access road and compound including type of vegetation scheduled for removal and quantity of trees greater than six inches diameter at breast height and involvement with wetlands;

**Proposed for Development &
Management Plan Submission**

VIII. Procedures

A. The Council will review and may reject the application within 30 days if it fails to comply with specific data or exhibit requirements or if the applicant fails to promptly correct deficiencies. (Regs., Conn. State Agencies §§ 16-50/-4 through 16-50/-5)

B. The Council and any party or intervener to the proceeding may file exhibits and interrogatories requesting supplemental or explanatory materials. All filings will be subject to cross-examination and the Council's discretion for admission into the record. (General Statutes § 16-50o)

C. A public hearing must be held at a location selected by the Council in the county in which the facility is proposed, with one session held after 6:30 p.m. for the convenience of the public. If the proposed facility is to be located in more than one county, the Council shall fix the location for at least one public hearing session in whichever county it deems appropriate, provided that the Council may hold hearing sessions in more than one county. The Council's record must remain open for 30 days after the close of the hearing. (General Statutes § 16-50n (f))

D. The Council must render a decision within 180 days of receipt of an application, extendible by 180 days upon consent of applicant. (General Statutes § 16-50p)

****PLEASE NOTE THAT THIS GUIDE IS NO SUBSTITUTION FOR OBTAINING ADVICE FROM LEGAL COUNSEL. IN THE EVENT OF ANY CONFLICT BETWEEN THIS GUIDE AND THE ACTUAL STATUTES AND REGULATIONS, THE STATUTES AND REGULATIONS SHALL GOVERN.****

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A. SUMMARY DESCRIPTION AND LOCATION OF THE PROJECT

The Applicant, The Connecticut Light and Power Company (“CL&P”), is proposing to construct a bulk power 115- to 23-kilovolt (“kV”) Substation (“Rood Avenue Substation” or “Substation”) on its property located north of Rood Avenue and west of Shelley Avenue in Windsor, Connecticut. The Rood Avenue Substation Project (“Project”) will add delivery-system capacity to serve the growing electric power demands in Windsor, a town that does not currently have its own bulk power substation source. This upgrade will be accomplished through the connection of a new 115-kV to 23-kV, 60-Megavolt-Ampere (“MVA”) power transformer to an existing 115-kV transmission line and to the local 23-kV distribution system.

The existing distribution system lacks the capacity and reliability to efficiently meet growing peak-load demands. Currently, CL&P’s electric load in the Town of Windsor is served from bulk power substations located in Bloomfield, North Bloomfield, Windsor Locks, and Northwest Hartford. Growing peak demands are straining the capacity of these four substations. The addition of a new power substation in Windsor will create a more robust and reliable system that will serve the growing needs of the Town while effectively alleviating loads on the existing substations.

The Substation will be strategically placed within CL&P’s property, comprised of two lots identified by the Windsor Tax Assessor on Map 56, Block 31, as Lots 12 (25 Shelley Avenue) and 30 (264 Rood Avenue) (the “Property”). The Property location is identified on a United States Geological Survey (“USGS”) and aerial photograph provided as Figure A-1 (*Site Location Map, USGS*) and Figure A-2 (*Site Location Map, Aerial*), respectively.

Figure A-1: Site Location Map, USGS



04/04/07

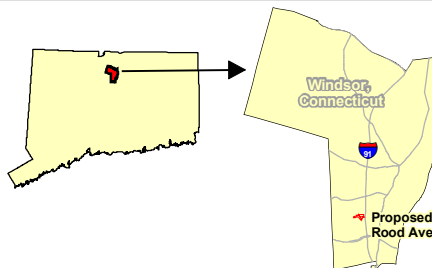
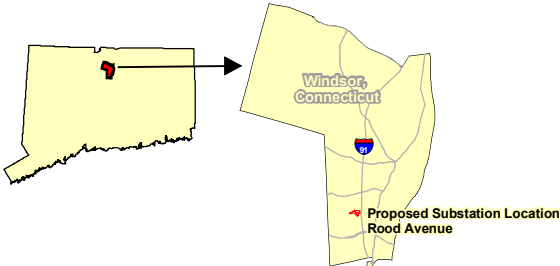


Figure A-2: Site Location Map, Aerial



04/04/07



The Property is currently occupied by a 23-kV distribution line switching station (former substation), 115-kV and 345-kV transmission lines, 23-kV distribution lines, and a gravel access drive that extends northward from Rood Avenue to the switching station. The remainder of the Property is undeveloped and wooded.

Prior to and during the municipal consultation process, CL&P consulted with the Chief Elected Official (“CEO”) and town officials to present an overview of the Project, answer questions, and provide them with a point of contact should they need additional information. As part of the Location Approval process, CL&P presented Project information to the Town of Windsor Inland Wetlands and Watercourses Commission at its meeting on June 5, 2007, and the Windsor Planning and Zoning Commission at its meeting on June 12, 2007. Location approvals were obtained from both commissions.

This Project was identified in the *Connecticut Siting Council Review of the Connecticut Electrical Utilities Ten-Year Forecast of Loads and Resources*, published in 2005, 2006, and again in 2007. The proposed Project plan received approval from ISO-NE (New England’s Independent System Operator) on September 27, 2007.¹

CL&P has designed the Substation in a manner that minimizes the potential environmental and visual effects to the greatest extent practicable and has incorporated measures to ensure the protection of existing resources during the construction and operation of the Substation facilities.

¹ The ISO-I.3.9 approval included the original specifications for a 46.7-MVA transformer at the site. This Application has been revised to request approval for the installation of a 60-MVA unit. Subsequent approval will be sought from ISO for the larger transformer to better serve Windsor’s needs. CL&P anticipates obtaining this approval in early 2008.

As detailed in the remainder of this submission, the Rood Avenue Substation Project:

- will address a need for additional distribution system capacity and reliability in the Town of Windsor by establishing a new, strategically positioned bulk power source;
- will comply with regional planning and reliability standards and Northeast Utilities' transmission reliability standards;
- will occupy a former substation property owned by CL&P that was identified and set aside for this specific use in anticipation of area load growth and potential long-term limitations of the existing local distribution system;
- will be consistent with applicable public health and safety requirements, standards and codes; and not create undue hazard to the general public;
- will be constructed in full compliance with the standards of the National Electrical Safety Code, the Connecticut Department of Public Utility Control, and good utility practice;
- will be consistent with local, State and federal land use plans;
- will be designed to minimize effects on existing wetlands and watercourses on the Property;
- will be designed to minimize effects on existing wildlife, vegetation, and rare, threatened and endangered species habitat;
- will not result in any adverse effects on public water supplies;
- will be strategically located and designed to minimize visual impacts to surrounding areas;
- will have no adverse effect on historic, cultural and/or archaeological resources;
- will be designed to minimize earthwork and soil disturbance during construction, including development of appropriate plans to stabilize and restore affected areas;
- will not be located within a floodplain;
- will comply with applicable State lighting and noise regulations; and,
- will have no significant permanent adverse effects on the environment.

B. PURPOSE OF THE APPLICATION

The purpose of CL&P's application (the "Application") to the Connecticut Siting Council ("CSC" or "Council") is to request a Certificate of Environmental Compatibility and Public Need ("Certificate") for the siting and construction of this Project. The purpose of the Project is to address a need for additional distribution system capacity and thus improve future reliability in the Town of Windsor by establishing a new, strategically positioned bulk power source in the Town.

C. STATUTORY AUTHORITY FOR APPLICATION

CL&P is applying to the Council pursuant to *Section 16-50g et seq. of the General Statutes of Connecticut*.

This filing includes information concerning the Applicant (CL&P), existing conditions at the Property, and the proposed conditions for construction of the Substation, including:

- its location and design;
- the various alternatives considered to date and the process by which the Property was identified and selected;
- the need for its construction and operation;
- its potential effects on the environment; and
- mitigation measures proposed by CL&P.

D. LEGAL NAME AND ADDRESS OF APPLICANT

The Connecticut Light and Power Company (a specially chartered Connecticut corporation)
107 Selden Street
Berlin, CT 06037

Mailing Address:

CL&P
P.O. Box 270
Hartford, CT 06141-0270
Telephone: (860) 665-5000

Internet Address: Northeast Utilities Transmission website
www.transmission-nu.com

E. APPLICANT CONTACTS

Correspondence and other communications with regard to the Rood Avenue Substation should be addressed to, and notices, orders and other papers should be served upon, the following:

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Transmission Siting and Permitting
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P.O. Box 270
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Telephone: (203) 573-1200
E-mail addresses:
afitzgerald@carmodylaw.com
rgolden@carmodylaw.com
mdubuque@carmodylaw.com

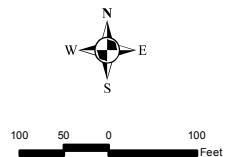
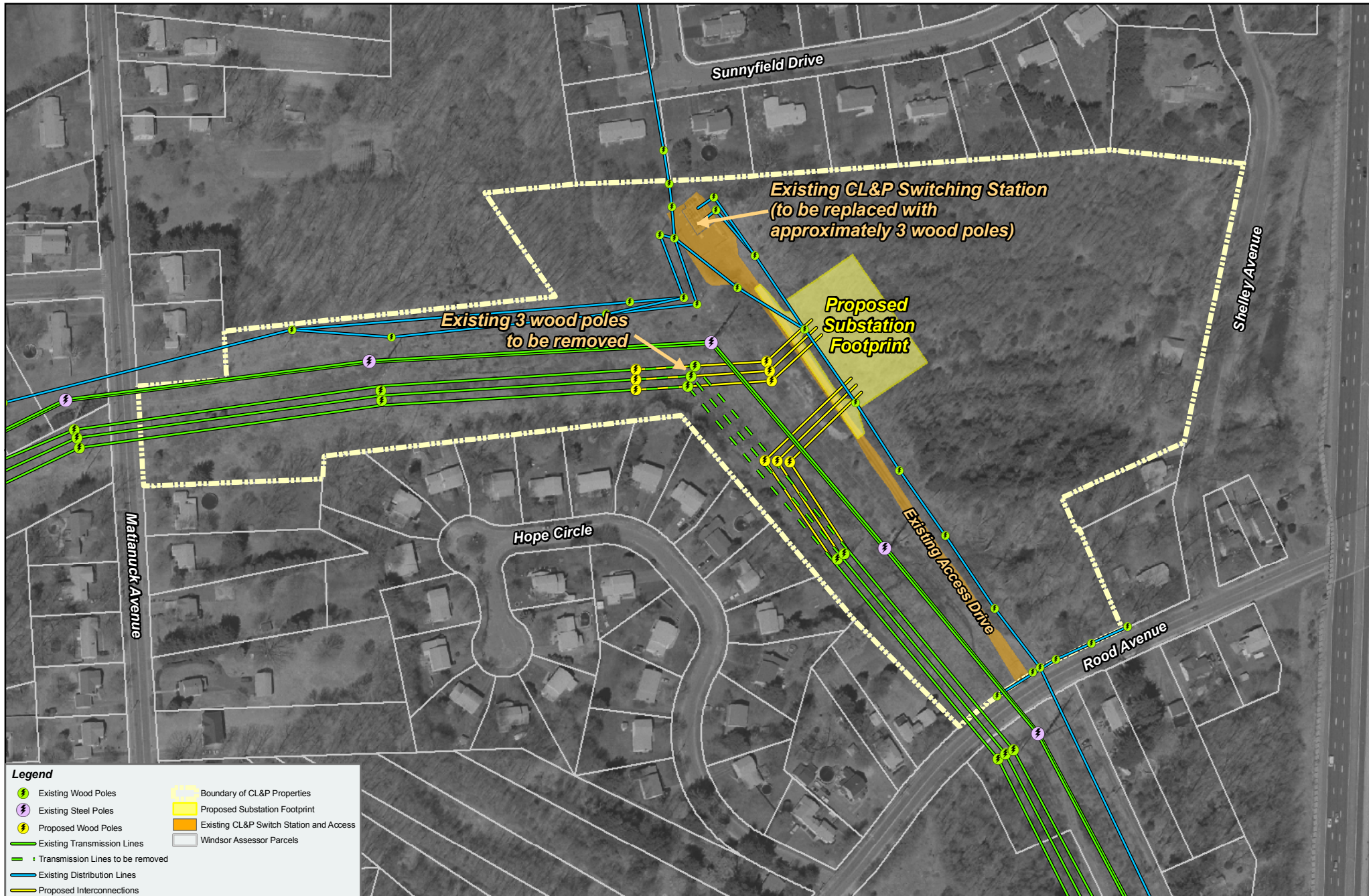
F. DESCRIPTION OF FACILITY

The CL&P Property on which the Rood Avenue Substation would be located was acquired as several parcels over an approximately ten-year period from the mid-1950s to mid-1960s and encompasses over twenty acres of land. Since the 1950s, this Property has historically been used as an overhead transmission/distribution line corridor. Additionally, the Property is the site of a former electrical substation (circa 1965–1991) which presently functions as a 23-kV switching station. Because of its size, configuration, location and existing infrastructure, the Property was identified by CL&P as a future bulk-power substation site in anticipation of area load growth and potential long-term limitations of the existing local distribution system.

The Substation would be accessible from Rood Avenue and would be located to the northeast of the existing overhead transmission line corridor (see Figure F-1, *Substation Location*). The Substation would occupy an area measuring approximately 220 feet by 137 feet and 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). A gravel driveway will be established generally along the route of the existing unimproved, dirt access. The Property will accommodate the construction and operation of the Substation without the need to purchase any additional real estate.

Once constructed, the Substation would connect into one of the existing 115-kV-overhead transmission line circuits (1751 line) which interconnect to the Manchester Substation in Manchester, Northwest Hartford Substation in Hartford and the North Bloomfield Substation in Bloomfield. This transmission line is the southernmost of two lines crossing the Property. The other line employs steel pole structures and supports a 345-kV circuit (#395) and a 115-kV circuit (#1779). The 1751 transmission line will be looped beneath the other line into the Substation, and a new 115-kV circuit breaker will be installed in the Substation to separate the existing 1751 transmission line into two circuits.

Figure F-1: Substation Location



The interconnections between the Substation and the 115-kV transmission line would be accomplished by installing two new terminal structures within the Substation, each of which would also support a line disconnect switch and two new wood-pole structures (structures #10142A and #10143A), each consisting of three wood poles. Existing wood-pole structure #10143 would also be relocated about 70 feet to the west. From wood-pole structure #10142A a new section of line conductors would connect to one of the line terminal structures located inside the Substation's fenced area. From the re-located wood-pole structure #10143 a new section of line conductors will be connected to the new wood-pole structure #10143A and then to the second line terminal structure located inside the fenced area. Both new line sections will cross under the circuits on the steel-pole transmission line.

The three transformer connecting positions in the Substation would each be outfitted with 115-kV disconnect switches, and two will have 115-kV circuit switchers. One disconnect switch and one circuit switcher will be in the supply path to the 60-MVA power transformer, used to step down the voltage from 115 kV to 23 kV. The second disconnect switch would provide for a future 60-MVA power transformer, if needed. The third disconnect switch and circuit switcher will be used for a mobile transformer connection, when necessary, to perform maintenance or to replace a failed piece of equipment. The Substation would be large enough to accommodate two additional 60-MVA transformers at a later date, if needed. A metal-clad switchgear enclosure, approximately 27-feet long, 14-feet wide and 14-feet high will be installed to provide the switching equipment for four 23-kV distribution feeders, of which three will be activated initially. The cables for each distribution feeder will exit the Substation via underground conduits and be connected to existing overhead distribution lines already on the Property. Consistent with the present feeder configuration, two of these initial feeders from the Substation

will follow the general route of the access drive to Rood Avenue, and one feeder will exit the Property on an existing right-of-way (“ROW”) to the north.

In addition to the switchgear enclosure, a 48-foot by 14-foot by 14-foot high protective relay and control equipment enclosure (the “control enclosure”) and a 24-foot by 14-foot by 14-foot high battery enclosure will be installed at the north end of the Substation. The battery enclosure will house the Substation battery, charger and transmission equipment used to operate the Substation. The control enclosure will house protective relaying and control equipment.

Development of the Rood Avenue Substation would also require the installation of an additional 115-kV circuit breaker at the Manchester Substation and changes to certain protection and control equipment at the North Bloomfield Substation. These ancillary additions and changes would take place completely within existing fence lines and thus, would not create additional environmental impacts. Furthermore, the nature of these additions and changes do not constitute a facility “modification”, as this term is defined in Connecticut General Statutes (“Conn. Gen. Stats.”) § 16-50i. Development of the Substation also requires protective relay system changes within the control enclosures at three other existing bulk substations (Manchester, Northwest Hartford and Bloomfield). Since these upgrades are required for the safe and proper operation of the proposed Rood Avenue Substation, these upgrades are included as part of this Project and Application.

Technical specifications and related information are presented in Exhibit 1 (*Site Plan Drawings*).

F.1 Estimated Cost of the Rood Avenue Substation

The estimated costs for the siting, design, and construction of the Substation and supporting infrastructure total approximately \$13,800,000 (\$9,100,000 allocated to transmission system costs and \$4,700,000 to distribution system costs).

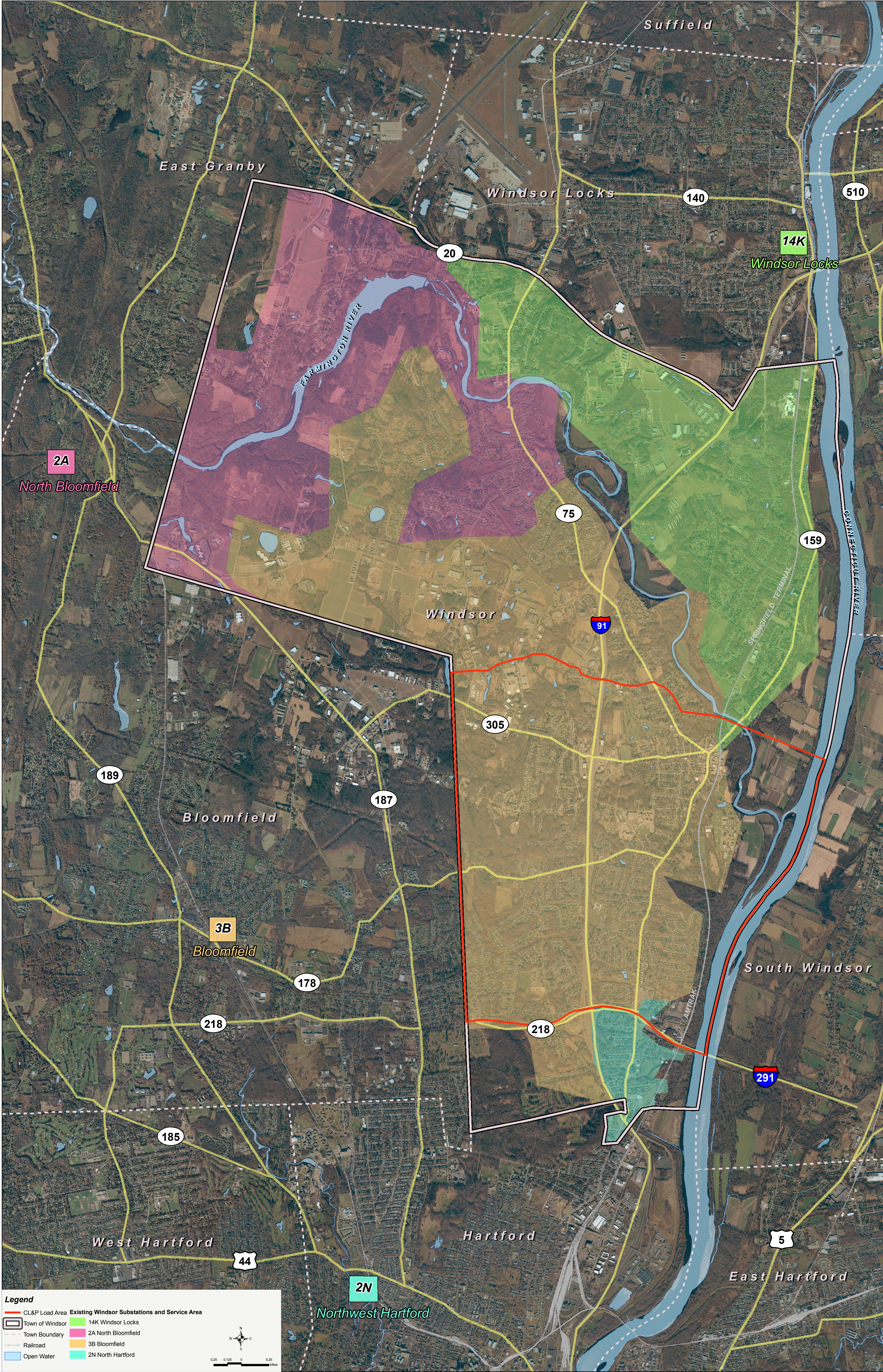
F.2 Facility Service Life

The Substation would have a service life of approximately 40 years and would be capable of capacity increases during this time.

G. NEED FOR FACILITY

The purpose of the Project is to increase electric distribution-system capacity and to improve reliability in Windsor by establishing a new bulk power substation in the Town. Currently, the electric load in Windsor is served from four bulk power substations in other towns: Bloomfield Substation and North Bloomfield Substation located in Bloomfield; Windsor Locks Substation in Windsor Locks; and, Northwest Hartford Substation in Hartford. Figure G-1 depicts the locations of these substations and their respective service areas in Windsor. The current configuration, which relies on the sharing of Windsor's load by distribution feeders from these four substations, is not a viable long-term option for reliably meeting the Town's growing peak-load demands. Development of the Rood Avenue Substation would effectively alleviate loads on the four existing substations by adding a new capacity source to the distribution system. The addition of the Rood Avenue Substation to the distribution system, and the resultant load redistribution in Windsor, is graphically depicted in Figure G-2.

Figure G-1: Existing Windsor Area Substation System



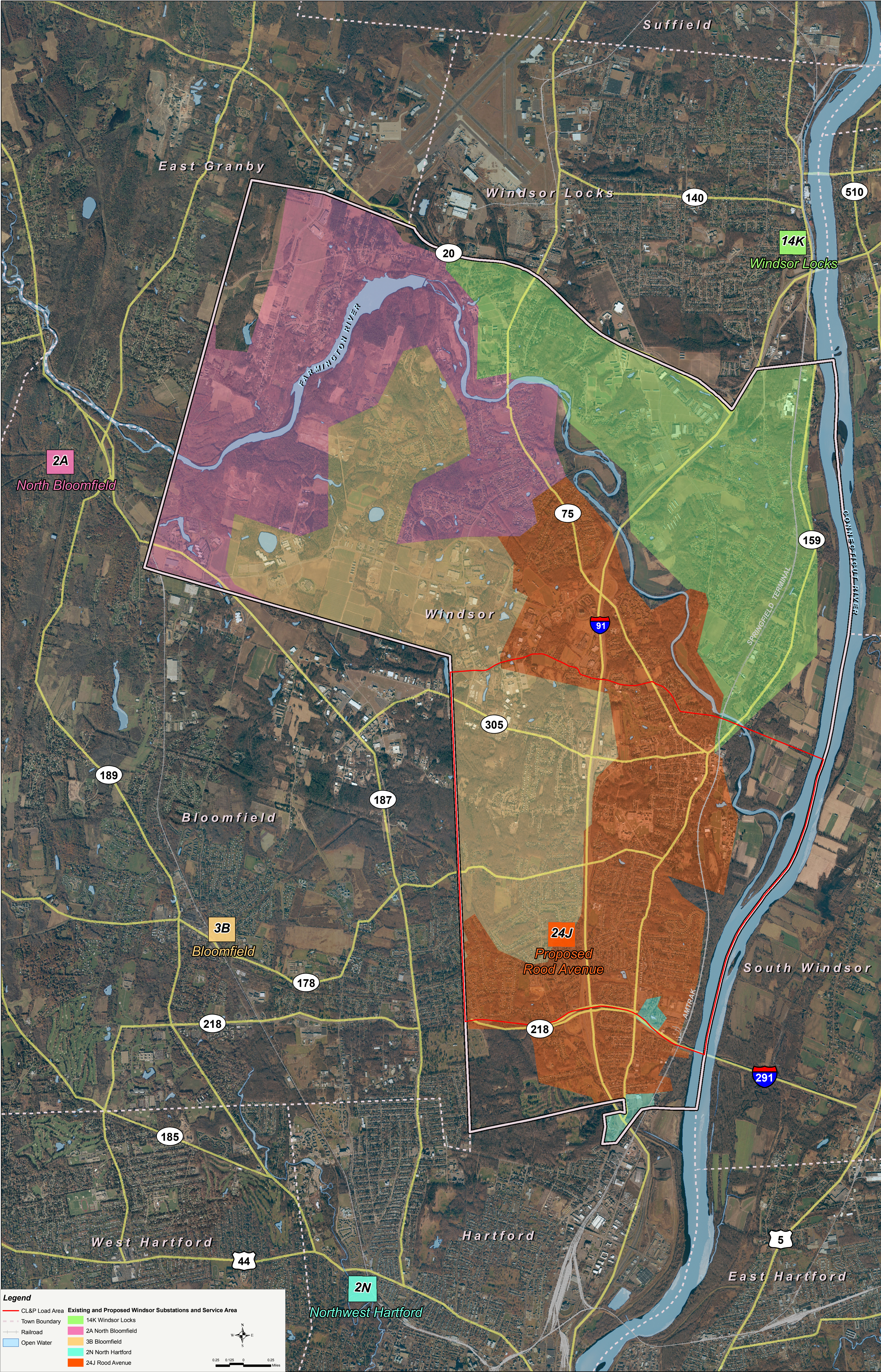
Legend

- CL&P Load Area
- Town of Windsor
- Town Boundary
- Railroad
- Open Water

Existing Windsor Substations and Service Area

- 14K Windsor Locks
- 2A North Bloomfield
- 3B Bloomfield
- 2N North Hartford

Figure G-2: Proposed Windsor Area Substation System



In Windsor, electricity consumption continues to steadily increase. Table G-1 presents electric power use in Windsor over a 24-year period (1981 – 2005).

TABLE G-1: Power Use in Windsor ([kWh] kilowatt-hours)

Year	Residential	Commercial	Industrial	Total
1981	68,035,456	76,172,624	118,995,945	263,164,025
2005	102,662,154	192,498,815	109,035,011	404,195,980
Percent Change (1981-2005)	66.3%	39.6%	-9.2%	65.1%

Beyond the recent growth experienced in Windsor, there is significant potential for additional industrial/commercial development, specifically in the Pigeon Hill Road/Day Hill Road area, further increasing peak loads and the need for a dedicated power source in the Town. There are a number of larger projects recently completed, currently planned or in various stages of construction within the Town of Windsor that represent a projected load increase of over 41 megawatts (MW) by 2010.

Also, since customer demand is also on the rise in the towns with substations now serving Windsor, available capacity at these substations is diminishing quickly. For example, substantial regional projects and new developments in the vicinity of Bradley International Airport and Route 20 and I-91 (particularly along Rainbow Road and International Drive in Windsor/East Granby) are placing further stress on the overall system. Table G-2 provides a summary of available capacity and forecasted summer peak-load growth associated with the area's electric distribution system.

Table G-2: Available Capacity and Forecasted Summer Peak Load (MVA)

	Permissible Load Rating (MVA)	2006 Actual	2007	2008	2009	2010	2011	2012
Bloomfield¹	134	119.3	128.8	136.1	111.0	114.9	117.3	119.8
N. Bloomfield²	88	69.7	76.7	88.5	83.6	86.9	88.6	90.7
Windsor (Rood Ave.)³	55	0	0	0	41.4	42.2	43.1	44.0
Total (MVA)	222 (277 in 2009)⁴	189	205.5	224.6	236	244	249	254.5

¹ Rating based on a new Forced Load Transfer (FLT) scheme that allows for the automatic temporary transfer of up to 14 MVA of load off of the Bloomfield Substation following a transformer outage.

² Rating assumes a FLT scheme, slated for completion in 2008/2009 that allows for the automatic temporary transfer of up to 23 MVA of load off of the North Bloomfield Substation following a transformer outage.

³ Rating based on a 30-MVA mobile transformer capacity and the ability to temporarily transfer all load greater than 30-MVA off of Rood Avenue Substation following a transformer outage.

⁴ With Rood Avenue Substation in operation.

As the area experiences increased growth, the demands placed on the existing substations currently providing service to Windsor require relief to meet this growing need and maintain service reliability. The challenges of load growth in this geographic region have been recognized and strategies have been employed as interim measures to delay the need for a new facility. For instance, the load on the Bloomfield Substation nearly reached the substation's permissible load rating of 120 MVA in 2006 and was projected to exceed this rating in 2007². To alleviate the immediate need, a Forced Load Transfer (FLT) scheme has been instituted at the Bloomfield Substation using two separate 23-kV circuits. The FLT scheme allows the transfer of approximately 14 MVA of load off of Bloomfield Substation (to North Bloomfield and Northwest Hartford), thus increasing the permissible load rating of this substation by 14 MVA

² Substation Permissible Load Ratings are based on the loss of one power transformer, without dropping any load, and without damaging all remaining equipment engaged in temporarily serving the load until (and after) a mobile power transformer can be installed.

and providing the necessary time window to construct the Rood Avenue Substation for operation beginning in 2009.

North Bloomfield Substation is projected to exceed its permissible load rating of 79 MVA in 2008. Installing a similar FLT scheme will ultimately increase the permissible load rating at North Bloomfield Substation to 88 MVA.

Construction of the proposed Substation in Windsor would add necessary capacity to the system through the installation of a 60-MVA, 115- to 23-kV, bulk power transformer. This new 23-kV distribution power source would allow peak loads to be reduced by 30.8 MVA at Bloomfield Substation and would add up to more than 55 MVA of new capacity to the distribution system. Once Rood Avenue Substation is operative and the Bloomfield Substation has been off-loaded, a new 23-kV circuit would be created from Bloomfield Substation and provide load relief for North Bloomfield Substation, allowing the permanent transfer of approximately 11 MVA of load.

Based on current forecasts and implementation of these proposed remedies, the next projected overload is anticipated to occur in 2012. Installing a third bulk power transformer at North Bloomfield Substation at that time would add 42 MVA of new capacity to the distribution system.

G.1 System Alternatives

CL&P considered alternative system options to meet the challenges in Windsor. However, available options would produce a Windsor distribution system that is not as reliable and flexible as the system which will result from the proposed Project and, ultimately, would not eliminate the need for the proposed facility to meet system capacity projections. The Rood Avenue Substation was found to be the preferred solution based, in part, on the following:

- Proximity to customer load
- Improved reliability with decreased feeder length
- Improved reliability for load transfers during feeder outages

Alternative system options that were considered are discussed below.

Bloomfield Substation

The addition of a mobile transformer connection position at Bloomfield Substation is not an effective solution because of its associated cost (approximately \$550,000) relative to the small gain in station capacity (an increase of only 9 MVA in the substation rating).

Replacement of the three existing power transformers at this substation with larger transformers was evaluated and ultimately rejected. Although the purchase of new transformers could be off-set by the reuse of the existing transformers elsewhere in CL&P's system, the actual change out would be labor intensive, and the net capacity increase is less than that provided by the proposed Substation with one transformer.

North Bloomfield Substation

Construction of the Rood Avenue Substation along with the installation of a new Bloomfield Substation circuit and the North Bloomfield FLT scheme pushes out the projected overload year at North Bloomfield Substation to 2012. At that point in time, a third transformer would be added to North Bloomfield and the FLT scheme would be disabled.

Immediate installation of a third transformer at North Bloomfield was also considered. Although this option would add 42 MVA of new capacity to the distribution system, it can only shift approximately 13 MVA of load off the Bloomfield Substation. By instituting this option and the existing Bloomfield FLT scheme, the next projected overload year at the Bloomfield Substation occurs in 2011. At that time, the Rood Avenue Substation would still need to be constructed. Both options (Rood Avenue Substation and a third transformer at North

Bloomfield) are needed within the next ten years. Constructing Rood Avenue Substation first provides necessary load relief for the Bloomfield Substation, adds similar new capacity to the distribution system, and provides for an additional year's delay (2011 to 2012) before the next major expenditure is required at the North Bloomfield Substation.

Windsor Locks Substation

This option considered the installation of a third 115- to 23-kV power transformer and three new distribution circuits at the Windsor Locks Substation. This option adds 45 MVA of new capacity to the distribution system but its estimated cost is around \$20,000,000. The cost is high because of the need to relocate the existing 23-kV yard at Windsor Locks, as well as the difficulties of bringing out new circuits from this location. In addition, transmission constraints north of the Manchester Substation would need to be resolved prior to the installation of the third transformer at Windsor Locks Substation. It is unlikely that these transmission constraints can be resolved by 2009, which is when the third transformer is needed.

Tobacco Substation

This option considered the expansion of the existing 27.6-kV system supplied out of Windsor Locks Substation and included the installation of two 115- to 27.6-kV transformers and two Power Control Enclosures ("PCEs") at the North Bloomfield Substation; installation of two new 27.6-kV circuits from North Bloomfield Substation to Rainbow Road in Windsor ("Tobacco" site); and development of the Tobacco Substation [two 27.6- to 23-kV transformers; four PCE's; and six distribution circuits]. This option adds 45 MVA of new capacity to the distribution system at an estimated cost of \$15,000,000. High cost aside, this expansion option is contrary to CL&P's long-range plans to phase out the non-standard 27.6-kV system.

Although the Tobacco site appears to be an adequate location for a new bulk substation, there is no 115-kV transmission source nearby. The cost of extending 115-kV transmission lines to this site would exceed the cost of the proposed Substation.

Northwest Hartford Substation

In comparison to other options, this station is too far south of the high growth areas of Windsor to provide long-term load relief for both the Bloomfield and North Bloomfield Substations. For this option to be effective, a great deal of additional high cost distribution work would be required.

Northwest Hartford Substation is currently a three-transformer (36/48/60 MVA) substation and expansion to a fourth transformer would be non-standard and very costly. Likewise, replacement of the three existing transformers with larger 80-MVA transformers would be very expensive due to required upgrades of substation equipment to meet the ampacity and fault duty ratings associated with the larger transformers.

Northeast Hartford Substation (Future)

This option calls for a future bulk substation to be constructed on Windsor Street in Hartford, the site of the existing 23- to 4.8-kV Windsor Street Substation, now supplied by a feeder from the Northwest Hartford Substation. Similar to Northwest Hartford Substation, this location shares the same disadvantage of being located too far south to service the high growth areas within the Town of Windsor. Another drawback of this site is that costly 4.8-kV overhead line and underground cable system conversions would be required in order to bring out new 23-kV feeders.

Establishing a bulk substation on this site will also be expensive because of the need to extend a 115-kV line (possibly underground) to the new substation. This bulk substation may be

established in the future (beyond 10 years) to provide additional capacity for the Hartford area when existing substations at South Meadow, Northwest Hartford, and Southwest Hartford require load relief.

G.2 Exemption from CEAB RFP Process

Pursuant to Conn. Gen. Stats. § 16-50l (a) (2), as an electric substation designed to change or regulate voltage of electricity greater than 69kV, this project is exempt from the request for proposal process of the Connecticut Energy Advisory Board ("CEAB"). At the request of the CEAB, as a courtesy, CL&P furnished to the CEAB a copy of the municipal consultation filing cover letter on September 5, 2007, and the legal notice for this Application on November 2, 2007.

H. EXISTING CONDITIONS

An *Existing Conditions Map*, depicting current conditions on the Property, its access, abutting properties, and several key features discussed herein, is provided as Figure H-1. The purpose of this section is to describe current conditions on the Property. A detailed discussion of the Rood Avenue Substation's effects on the environment is provided in Section K of this document.

H.1. Existing Development

The Property encompasses over 20 acres. The combination of the Property and two additional, abutting and contiguous CL&P-owned parcels provides a total of 21.03 acres of land to effectively buffer the Substation from neighboring residences as well as Rood Avenue and Shelley Avenue. These parcels are identified by the Windsor Tax Assessor as:

Property:

- 264 Rood Avenue - Map 56, Block 31, Lot 30; 11.09 acres
- 25 Shelley Avenue - Map 56, Block 31, Lot 12; 8.97 acres

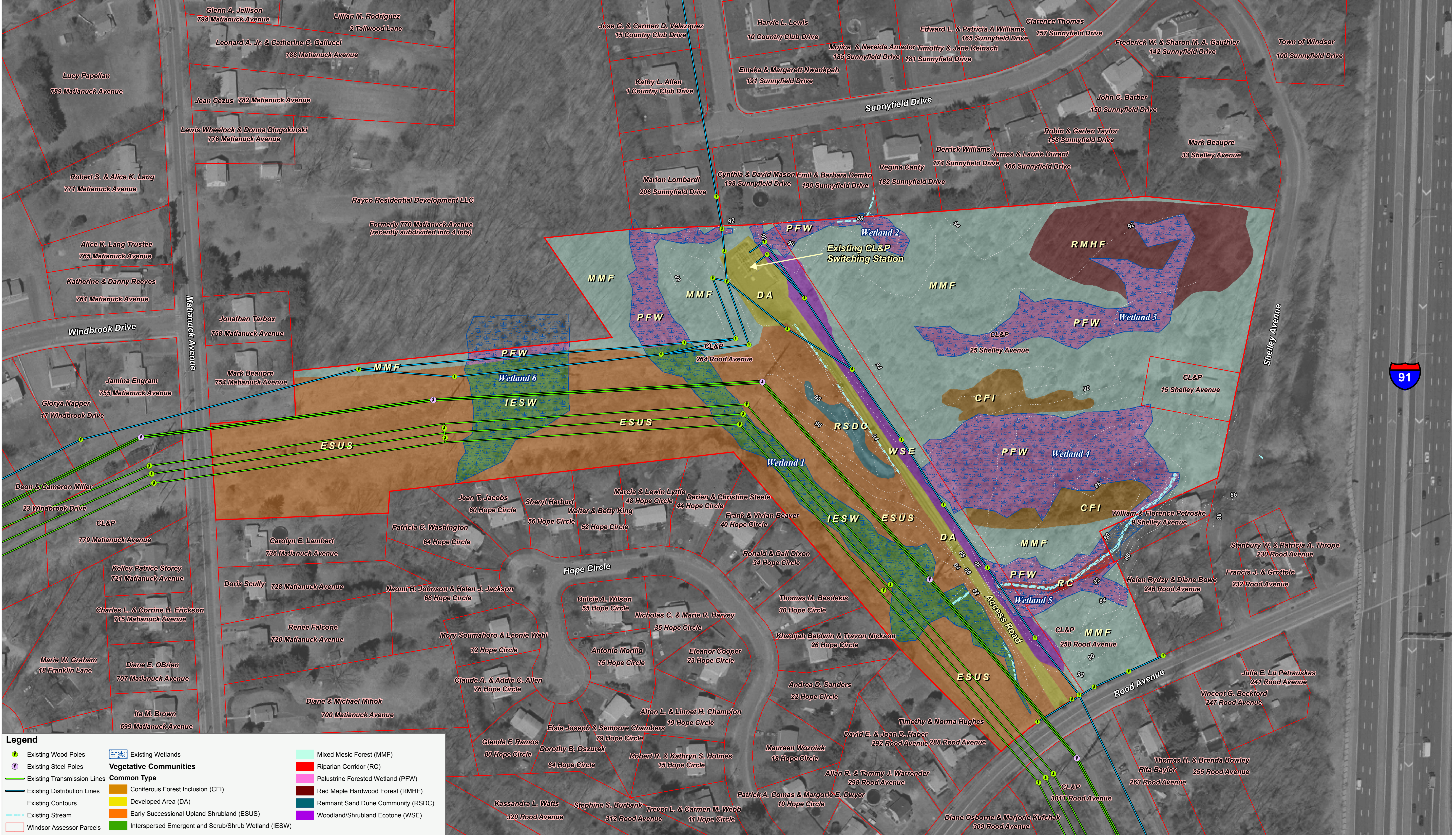
According to the Tax Assessor's field cards, these two parcels are located within an Agricultural Land Zone area.

Adjoining Parcels:

- 15 Shelley Avenue - Map 56, Block 31, Lot 12; 0.29 acre
- 258 Rood Avenue - Map 56, Block 31, Lot 14; 0.68 acre

According to the Tax Assessor's field cards, these two parcels are located in a Residential Zone.

Figure H-1: Existing Conditions Map



The Property is currently occupied by a 23-kV distribution line switching station (former substation), 115-kV and 345-kV transmission lines, 23-kV distribution lines, and a dirt access drive that extends northward from Rood Avenue to the switching station.

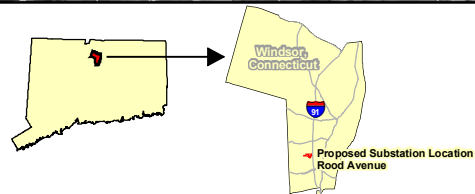
The remainder of the Property is undeveloped and wooded. A vacant residence occupies the CL&P parcel at 15 Shelley Avenue. Overhead transmission and distribution lines traverse the western portion of the Property (Lot 30) extending southeast, north, and west off the Property. Twenty-eight wood poles and three steel poles, supporting the overhead transmission and distribution lines, are currently located on the Property.

The Property is bounded by a total of twenty-five abutting parcels. Numerous residences exist in the vicinity of the Property along Rood Avenue, Shelley Avenue, Hope Circle, Matianuck Avenue, Windbrook Avenue, Sunnyfield Drive, Country Club Drive, Tallwood Lane, Franklin Avenue, Green Manor Avenue, and Pine Lane Extension. The nearest residential structure is located at 190 Sunnyfield Drive (approximately 365 feet north of the Substation). Figure H-2 (*Nearest Residences*) depicts the locations and distances of surrounding residences to the proposed Substation.

Several alternate site locations along the transmission line corridor were evaluated for development of this Project (See Section I, *Alternatives Evaluated*, of this Application). For the following reasons, the Property is best suited for the Substation:

- Existing 115-kV transmission lines currently traverse the Property;
- Interconnection opportunities to existing 23-kV distribution feeders are good;
- The Property currently houses a switching station and significant utility infrastructure;
- The Property was formerly occupied by a distribution substation;
- Substantial buffer exists for neighboring residences;
- Sufficient access currently exists from a local road; and,
- Environmental effects of the Project are minimal.

Figure H-2: Nearest Residences



H.2. Site Access

A dirt access drive is situated off of Rood Avenue in the central portion of the Property, allowing authorized vehicular access to the existing 23-kV switching station located proximate to the northern Property boundary.

H.3. Wetlands and Watercourses

Wetlands in the vicinity of the proposed Substation were inspected and delineated in the field by professional soil scientists during the first and second weeks of April 2007. VHB wetland scientists identified wetland boundaries based on both Federal criteria (defined at 33 CFR 328-329) and State criteria set forth in the Connecticut Inland Wetlands and Watercourses Act (sections 22a-36 through 22a-45 of the Conn. Gen. Stats.). The Federal wetland delineation methodology is based on three technical criteria: evidence of prolonged hydrology, dominance of hydrophytic vegetation and presence of hydric soils. The State of Connecticut wetland identification criteria is based solely on soil type (i.e., includes soil classifications of poorly drained, very poorly drained, floodplain and alluvial). Wetland boundaries determined utilizing these two sets of criteria were consistent with the exception of a small portion of Wetland 3 where the Connecticut-regulated boundary encompasses a slightly larger area than the Federal-recognized boundary. Wetland areas identified on the Property have been assigned numbers 1 through 6 for descriptive purposes. The limits of wetlands delineated on the Property and their respective identifiers are illustrated in Figure H-1 (*Existing Conditions Map*). Details of the investigation can be found in Appendix B of Exhibit 2 (*Environmental Assessment Report*).

Wetland 1

Wetland 1 (± 1.4 acres) is a linear system that discharges through-flow held above a slowly permeable lakebed deposit. This wetland is surrounded by development including the

existing transmission line, residential subdivisions to the north and west, the switching station to the north and the access road from Rood Avenue that crosses the wetland. This wetland experiences seasonal saturation with small areas of shallow inundation. Surface flows driven by precipitation and reflow travel southward through an intermittent watercourse consisting of braided channels. Flows within the watercourse are conveyed under the existing access drive via a 32-inch reinforced concrete pipe (RCP) east to Wetland 5. This intermittent watercourse is a tributary to Deckers Brook located approximately 700 feet east of the Property and east of Interstate-91. The far northern component of this wetland discharges surface runoff and reflow to the east in a swale north of the switching station to Wetland 2. A narrow strip of fill material placed across this swale separates Wetland 1 from Wetland 2. This flow passes through the fill material (possibly in a stone drain or buried pipe) and into Wetland 2.

Cover types in Wetland 1 include forest, scrub-shrub and emergent marsh. Remnant forested areas are dominated by red maple, pin oak, American elm, arrowwood and ironwood. Scrub-shrub areas are dominated by silky dogwood, Bebb willow, sensitive fern, skunk cabbage, jewelweed and purple loosestrife. Emergent marsh areas commonly consist of skunk cabbage, cattail, purple loosestrife, soft rush, sedges, woolgrass, goldenrod, boneset, arrow-leaved tear-thumb, Joe Pye-weed, deer tongue grass and eastern marsh fern.

Wetland 2

Wetland 2 (± 0.2 acre) is primarily a groundwater/surface water depression (southeast end is a groundwater discharge area) that has been disturbed by land grading associated with the residential development to the north and the switching station to the west. The wetland drains north through a ditch into a lawn and culvert under Sunnyfield Drive.

The western part of the wetland contains a small seasonally inundated basin-shaped depression that was investigated for the presence of vernal pool habitat. Water depths in this pool were approximately 8 to 12 inches on April 9, 2007. No egg masses were found, though three adult wood frogs were present in the pool on this date. No wood frogs or other obligate vernal pool species were observed during follow up inspections conducted later in April and May. Despite heavy spring rainfall, the pool was nearly dry by May 3, 2007. Due to the absence of obligate vernal pool species and apparent short hydroperiod, VHB concluded that Wetland 2 does not support vernal pool habitat.

The western portion of Wetland 2 is forested and the eastern portion supports scrub-shrub vegetation. Forested areas are occupied by swamp white oak, red maple, American elm, serviceberry, arrowwood, Bebb willow, highbush blueberry, silky dogwood and skunk cabbage. Scrub-shrub areas are dominated by silky dogwood, elderberry, arrowwood, highbush blueberry, sensitive fern, jewelweed, and skunk cabbage.

Wetland 3

Wetland 3 (± 0.8 acre) occurs in a forested area of the Property east of the access drive. The wetland had been farmed and portions of the wetland have been partially buried by native soil materials that were either deposited as sediment or graded over the original soil surface. The wetland gently slopes to the east where it drains into a culvert that flows under Shelley Avenue.

The hydrology of this wetland is driven by surface runoff and throughflow held above slowly permeable lakebed deposits. The early successional forest in this wetland is dominated by red maple, red oak, apple, arrowwood and silky dogwood.

Wetland 4

Forested Wetland 4 (± 1.4 acres) is located east of the existing switching station access drive and north of Wetland 5. Sheet flow from Wetland 4 enters Wetland 5 at the extreme eastern end of the Property. Wetland 4 has also been disturbed by historic agricultural activities and other development and contains areas of buried wetland soils. The hydrology of this depressional wetland is supported by through-flow held above the slowly permeable lakebed deposit and surface runoff.

A small shallow pool (< 6 inches) was present at the eastern part of this wetland above its confluence with Wetland 5. No vernal pool species were identified within the area during various inspections in April. This pool had dried by May 4, 2007. Based on this evidence, VHB determined that Wetland 4 does not support vernal pool habitat.

Dominant plant species within the wetland include red maple, gray birch, spruce, American elm, cottonwood, winterberry, black cherry, spicebush, highbush blueberry, arrowwood, sensitive fern, skunk cabbage, cinnamon fern and Canada may flower.

Wetland 5

Wetland 5 (± 0.4 acre) is a riparian corridor consisting of an incised watercourse and narrow bordering forested wetland. Seasonally, the watercourse receives flows from Wetland 1 and Wetland 4 and reflow emerging from its steeply cut banks and conveys this flow east to a culvert located off of the Property. This watercourse is depicted as an intermittent stream on the USGS quadrangle map of the area. The small upstream watershed and field observations of limited flow suggest that the stream periodically dries in the summer.

Forested portions of the wetland are dominantly occupied by red maple, silky dogwood, arrowwood, cinnamon fern and skunk cabbage.

Wetland 6

Wetland 6 (± 0.7 acre) occurs in the western end of the Property. Cover types beneath the transmission line are emergent marsh and scrub-shrub, which are maintained by vegetation management to protect the electrical facilities. Northern portions of this wetland beyond the transmission corridor are forested. Emergent vegetation consisted mainly of skunk cabbage, cattail, jewelweed, purple loosestrife, soft rush, sedges, woolgrass, goldenrod, boneset, arrow-leaved tear-thumb, Joe Pye-weed, deer tongue grass, and eastern marsh fern. Areas occupied by scrub-shrub habitat are dominated by buttonbush, highbush blueberry, silky dogwood, alder, elderberry, northern arrowwood and spicebush. The forested area is dominated by red maple.

H.4. Vegetation and Wildlife

The vegetation communities on the Property are common to post agricultural mid-successional growth with areas controlled for maintenance of the existing electrical transmission lines. VHB identified the following vegetative communities on the Property: early successional upland shrubland, interspersed emergent and scrub-shrub wetland, forested wetland, riparian corridor, mixed mesic forest, coniferous forest, red maple hardwood forest, woodland/shrubland ecotone, remnant sand dune community, and maintained transmission and distribution line corridor and distribution line switching station (developed area). The location(s) of the vegetative communities on the Property are illustrated in Figure H-1 (*Existing Conditions Map*).

A vegetation and wildlife habitat survey of the Property was performed by Maguire Group, Inc. (“Maguire”) in 2006, reviewed by VHB and found to be substantially correct. The results of the survey conducted by Maguire are detailed in a report titled *Vegetation and Wildlife Survey/Habitat for the NU Rood Avenue – Windsor, CT Location*, which is included as Appendix A of Exhibit 2 (*Environmental Assessment Report*). The wildlife assessment included field inventory inspections to identify herpetofauna, avian, and mammal species present, taking into

account the habitat conditions present within each resource area. Habitat variables considered in the wildlife evaluation included the size of the vegetative communities, the plant cover types present, the degree of habitat disturbance, interspersions of cover types, the abundance and diversity of fruit and seed-bearing plants, the size (average diameter) and abundance of tree snags and ground debris, and surrounding land uses. These vegetative communities were evaluated for their capacities to provide cover, forage, and breeding habitat. The results of the wildlife habitat assessment found that the utility line corridor most likely provides the highest degree of wildlife habitat value on the Property due to its function as a wildlife corridor and stopover site for migratory birds and bats.

H.5. Rare, Threatened, and Endangered Species

The Applicant reviewed the Connecticut Department of Environmental Protection (“CTDEP”) Natural Diversity Data Base (“NDDB”) geographic information system (GIS) data layer (dated June 2007). The Property is not located within a buffered area of concern.

The vegetation and wildlife survey conducted by Maguire found that the vegetative communities present on the Property are not considered rare or unique habitat types in Connecticut with the possible exception of a small remnant sand dune located west of the existing access road. The State of Connecticut does not have a legal definition of “significant natural community” and the CTDEP evaluates habitats on a case-by-case basis to determine their conservation need. The CTDEP NDDB may designate a specific area as a “significant natural community” if it is found to contain unusual and/or exemplary wildlife habitat. Based on this criterion, it does not appear that the small sand dune would qualify as a “significant natural community.”

H.6. Water Supply Areas

Groundwater below and near the Property is classified by the CTDEP as a GA groundwater area. The GA classification indicates groundwater within the area of existing private water-supply wells or an area with the potential to provide water to public or private water-supply wells. CTDEP presumes that groundwater in such an area is, at a minimum, suitable for drinking or other domestic uses without treatment.

The closest public water-supply wells are part of the Windsor Locks Wellfield (a State-designated Preliminary Aquifer Protection Area), located approximately 4.5 miles north of the proposed Substation. The Property is not located within this or any other Aquifer Protection Area.

H.7. Scenic Areas

Based on information provided by the Town of Windsor's Planning and Zoning Office, there are no State or locally designated scenic roads or Natural Scenic Resources in the Town.

H.8. Historic and Archaeological Resources

Initial consultation with the State Historic Preservation Office ("SHPO") in August 2006 revealed that the Project area possesses moderate to high sensitivity for prehistoric and historic archaeological resources. The SHPO further recommended that CL&P undertake a professional reconnaissance survey to identify and evaluate archeological resources which may exist at the site (see Exhibit 3, *SHPO Initial Response Letter*). The survey was conducted in July 2007 (see Section K of this Application).

H.9. Natural Resources

Site bedrock and surficial geology was determined by reviewing the Environmental GIS Data for Connecticut 2003 Edition compiled by the CTDEP. Bedrock geology underlying the Property is identified as the Portland Arkose Formation. This formation/bedrock consists of red-

to-brown, medium-to-coarse grained, sandstone-like, sedimentary rock, consisting of quartz, feldspar, and other various rock fragments. Soils at the Property are mainly classified as fines with the north-central portion of the Property classified as sand overlaying fines and the western-most tip of the Property classified as sand and gravel. Soils in the general vicinity of the Property are classified as fines.

H.10. Floodplain Areas

According to Flood Insurance Rate Map, Community-Panel Number 0900410010D, dated September 29, 1986, there are no flood hazard areas on the Property. The nearest floodplain is associated with Deckers Brook, located approximately 900 feet northeast of the proposed Substation (and east of Interstate 91). A southwesterly flowing tributary of Deckers Brook intersects the southeastern portion of the Property. The 100-year base flood elevation in the general area is approximately 80 feet above mean sea level (“AMSL”). Elevations on the Property range between 80 and 98 feet AMSL.

H.11. Recreational Areas

There are no recreational areas directly abutting or within 0.25 mile of the Property. The nearest recreational area is Stroh Park located approximately 0.34 mile southeast of the Property. Other recreational facilities located further from the Property include Windsor Meadows State Park located approximately 1.2 miles to the southeast of the Property; Keney Park and Golf Course located approximately 1.2 miles to the south of the Property; Washington Park located approximately 1.3 miles to the northwest of the Property; Pershing Park located approximately 1.5 miles to the southwest of the Property; Windsor American Little League baseball fields located 1.75 miles northeast of the Property; Mill Brook Country Club located approximately 1.8

miles to the northeast of the Property; and Trent Park located approximately 1.9 miles northwest of the Property.

H.12. Seismic Areas

The USGS-National Earthquake Reduction Program has developed a series of maps that depict the estimated probability that certain levels of ground shaking from an earthquake will occur within a given period of time. USGS takes into account the seismic history of an area and the expected decrease in intensity with distance from the epicenter. Based on a review of USGS-National Earthquake Reduction Program maps and information obtained by the Weston Observatory (a geophysical research laboratory), there are no seismic areas located at the Property or within its immediate area.

H.13. Noise

Existing noise levels are below those established for residential areas by the CTDEP's noise control regulations (RCSA Title 22a, §22a-69-1 to 22a-69-7.4) and the Town of Windsor's Noise Control Ordinance. Contributing factors for noise generation in the area are traffic noises generated from Interstate 91 and the surrounding local road system.

H.14. Lighting

Currently, there are no lighting facilities present on the Property.

H.15. Other Surrounding Features

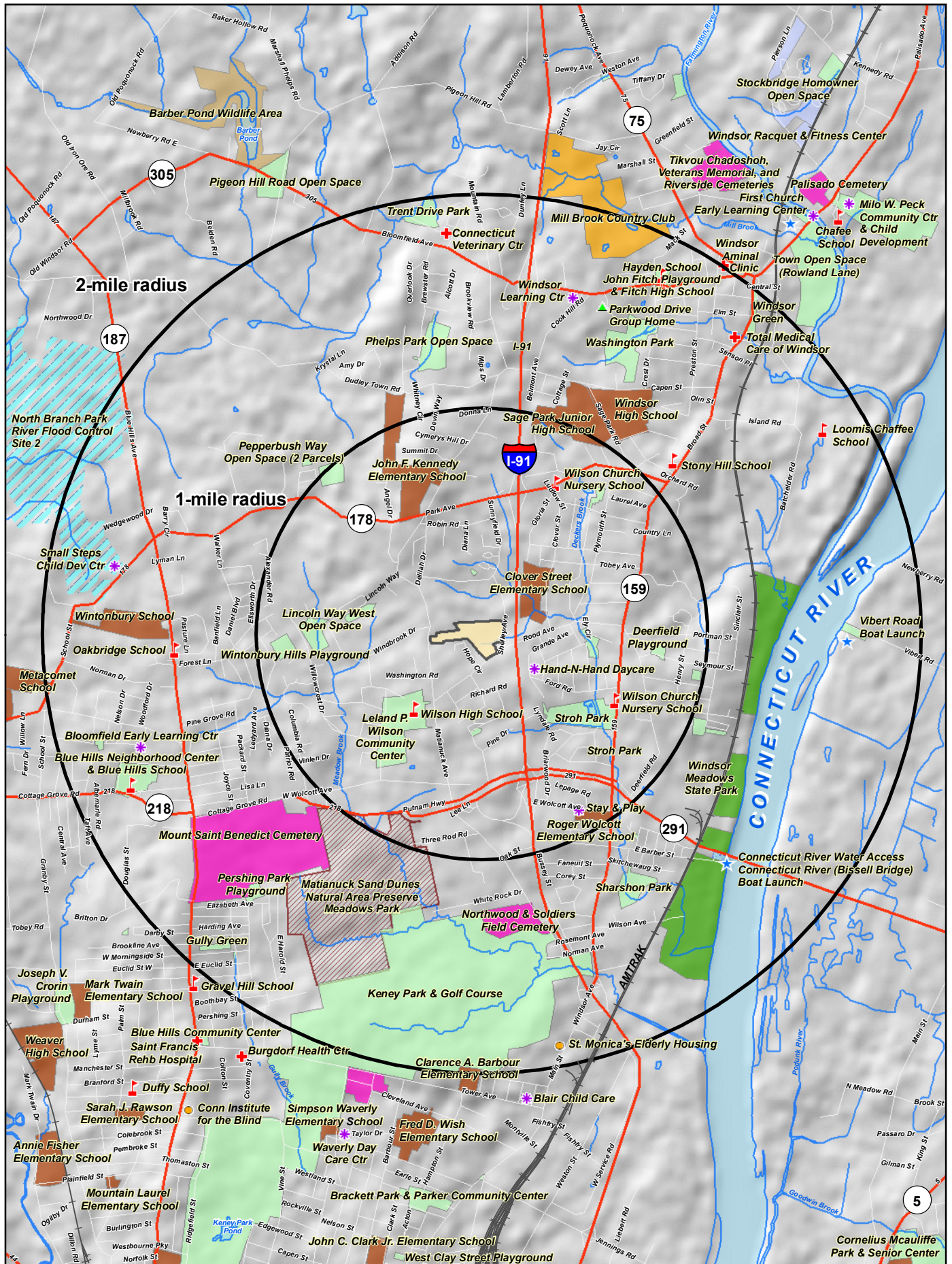
Table H-1 lists non-residential features within two miles of the Property. Figure H-3 (*Surrounding Features*) depicts the nearest locations of non-residential development.

Table H-1: Surrounding Non-Residential Features Within Two Miles of the Property

Name	Address	Location from Property
Schools		
Clover Street Elementary School	57 Clover Street	400 feet east
Wilson High School	Matianuck Avenue	0.35 mile southwest
John F. Kennedy Elementary School	530 Park Avenue	0.5 mile northwest
Wilson Church Nursery School	691 Windsor Avenue	0.6 mile northeast
Trinity Christian School	180 Park Avenue	0.66 mile northeast
Roger Wolcott Elementary School	57 E Wolcott Avenue	0.85 mile southeast
Sage Park Junior High School	25 Sage Park Road	0.9 mile northeast
Windsor High School	50 Sage Park Road	1 mile northeast
Stony Hill School	1185 Windsor Avenue	1.1 miles northeast
Oakbridge School	1095 Blue Hills Ave	1.2 mile west
Wintonbury School	Blue Hills Avenue	1.2 miles west
Blue Hills School	Walsh Street	1.5 mile southwest
Loomis Chaffee School	14 Batchelder Road	1.7 miles northeast
John Fitch High School	Hayden Court	1.75 miles northeast
Hayden School	Hayden Court	1.8 miles northeast
Daycares		
Hand-N-Hand Daycare, Inc.	70 Grande Avenue	0.2 mile southeast
Stay & Play Daycare	57 E Wolcott Avenue	0.8 mile southeast
Small Steps Child Development Center	9 Brooke Street	1.5 mile northwest
Bloomfield Early Learning Center	73 Rockwell Avenue	1.4 mile southwest
Windsor Learning Center	313 Bloomfield Avenue	1.6 mile northeast
Playgrounds		
Deerfield Playground	Deerfield Road	0.7 mile east
Wintonbury Hills Playground	Shields Drive	0.7 mile west
Pershing Park Playground	Elizabeth Drive	1.5 miles southwest
John Fitch Playground	Hayden Court	1.8 miles northeast
Hospitals		
Connecticut Veterinary Center	620 Bloomfield Avenue	1.8 mile north
Windsor Animal Clinic	46 Poquonock Avenue	2 miles northeast
Total Medical Care of Windsor	340 Broad Street	1.7 mile northeast
Group Homes		
Parkwood Drive Group Home	15 Parkwood Drive	1.5 miles northeast
Licensed Youth Camps (none identified within two miles)		
Hunting or wildlife management areas (none within two miles)		
Settled and Residential areas - see Figure H-2 (Nearest Residences)		

There are no tidal wetlands or coastal zone management areas involved with this Project.

Figure H-3: Surrounding Features



I. ALTERNATIVES EVALUATED

CL&P identified an area in Windsor, Connecticut where bulk substation capacity is needed (i.e., the “load pocket”). The solution to this need is the establishment of a new bulk power substation in the Town. The ideal location for this substation is: close to an existing 115-kV transmission circuit; within the distribution load pocket; and, accessible from a public road. Locating the facility near an existing 115-kV transmission circuit avoids new transmission line construction and ROW acquisitions. A site located within the load pocket would minimize distribution circuit lengths and enhances contingency tie capabilities with distribution circuits emanating from adjacent substations. Additionally, direct access to the substation site is important, as is minimizing new transmission and distribution line construction costs.

Based on these considerations, a site search area was identified near CL&P’s 115-kV transmission circuits along Park Avenue, Washington Road, Matianuck Avenue, Rood Avenue, Windsor Avenue, Deerfield Road, and Midian Avenue in Windsor.

Eight locations having potentially viable sites were identified within the search area (see Figure I-1). These locations were then evaluated, using the following major criteria, to determine the most suitable location for construction of this new Substation:

- Proximity to distribution load pocket and existing feeders
- Proximity to existing transmission lines
- Proximity to neighbors and other surrounding features
- Natural/cultural resources constraints
- Zoning and land-use constraints
- Ease of access
- Sufficient size and shape
- Proximity to public water-supply watershed and/or aquifer areas
- Earthwork requirements

The Rood Avenue Property best satisfied the criteria and is therefore the most feasible location. A summary of the potential site locations is provided below.

I.1. Location 1, Park Avenue

This location is at the very westerly edge of the search area and would require longer distribution feeders, resulting in increased costs. This alternative would require additional ROW purchases, significant land clearing and installation of new utility structures and interconnecting lines. In addition, residences are located on all four potential sites where the transmission lines cross Park Avenue. One possible substation site was identified 500± feet north of Park Avenue and east of the ROW; however, this location contains mostly wetlands.

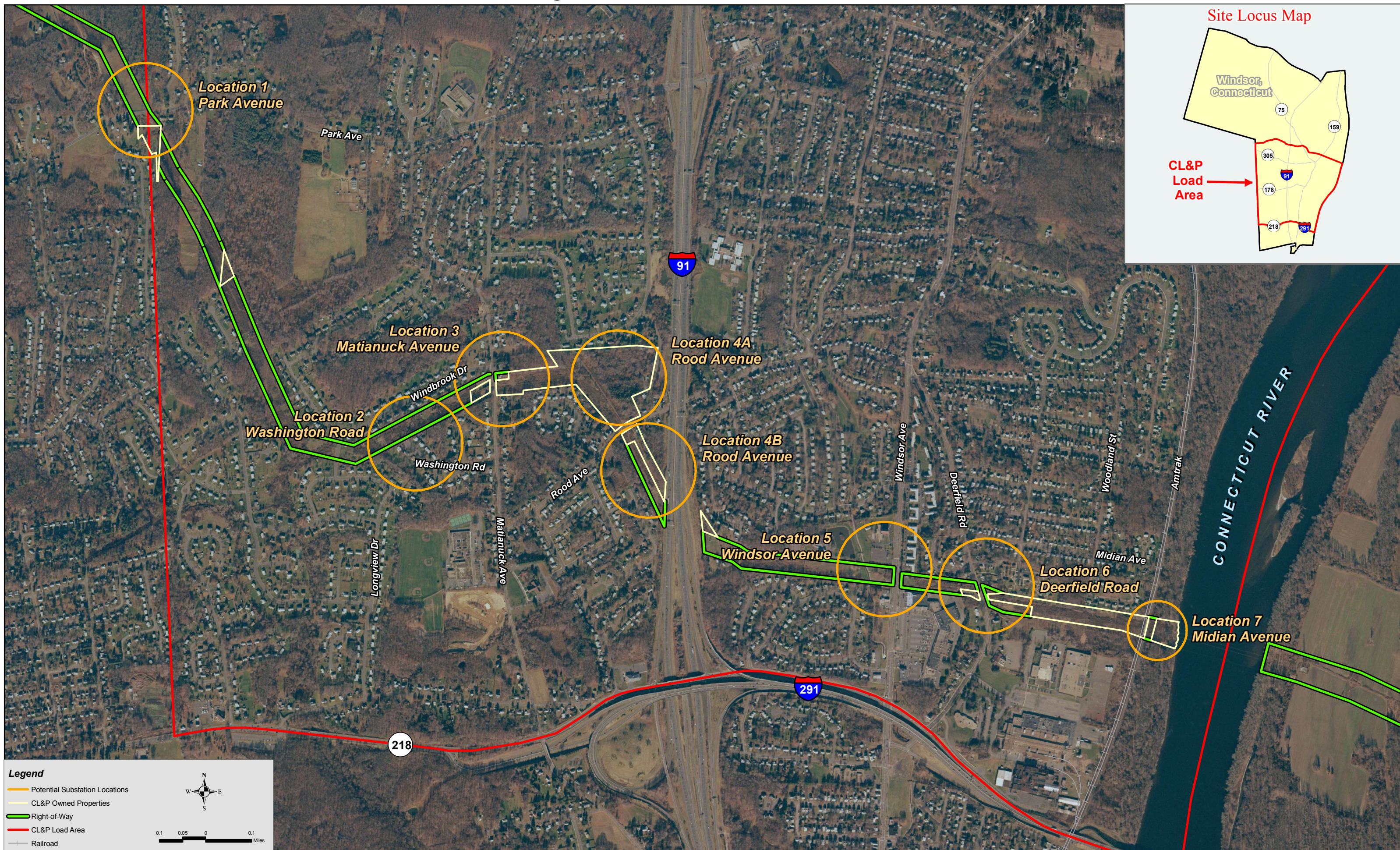
I.2. Location 2, Washington Road

The Washington Road cul-de-sac is located at the edge of the transmission ROW. The area is well developed with residences with insufficient buffer. Wetland constraints also exist in this area. As a result, no suitable land for a substation was identified.

I.3. Location 3, Matianuck Avenue

Residences occupy all potential site areas where the transmission lines cross Matianuck Avenue. Therefore, no suitable land for a substation exists at this location.

Figure I-1: Alternative Sites Evaluated



I.4. Location 4, Rood Avenue at Utility Corridor

CL&P evaluated company-owned parcels on both the north and south sides of Rood Avenue where the transmission and distribution systems cross overhead (identified in this evaluation as Location 4A and 4B, respectively).

Location 4A, north of Rood Avenue [the Property – Proposed Location]

An existing switching station and significant utility facilities (overhead transmission and distribution lines and support structures) occupy the Property. The Property formerly housed a distribution substation. Vehicular access (a maintained dirt roadbed) currently exists from Rood Avenue. A new Substation at this location would provide for direct connections to an existing 115-kV transmission circuit and to 23-kV distribution feeders on the Property. The combination of the Property and abutting CL&P-owned parcels totals 21.03 acres, providing a setback of 490± feet from Rood Avenue. Significant existing vegetation can be preserved in the north and northeast portions of the Property to provide substantial buffer to neighboring residences. The work associated with constructing the Substation minimally affects wetlands.

Location 4B, south of Rood Avenue at Utility Corridor

This two-acre parcel has significant wetland constraints and does not provide sufficient buffering from neighboring residences.

I.5. Location 5, Windsor Avenue

Most sites in this area are residentially developed. Some vacant land is available, but development of a substation would require land acquisition from an active adjacent property owner (church parking lot). Sites in this area provide insufficient buffer from neighboring

residences. Most of adjoining land to the west is also constrained by floodplain (associated with Deckers Brook) and bordering wetlands.

I.6. Location 6, Deerfield Road

No currently vacant land was identified to support a substation. Close to the east end of the search area, development here would necessitate longer distribution feeders, additional ROW purchases, significant land clearing and installation of new utility structures and lines. The area is well developed with residences, with minimal vegetative buffer, and in the case of the east portion of this area, significant wetland constraints.

I.7. Location 7, Midian Avenue

At the end of Midian Avenue, adjacent to the ROW, and at the east edge of search area, this location poses significant challenges for the interconnection of a substation to existing distribution feeders. Development here would necessitate longer distribution feeders resulting in additional ROW purchases and extensive tree clearing for the installation of new utility structures and lines. Nearby residences are located to the north and lack adequate distance/vegetation buffer. No direct access to the ROW exists in this area; development would require new road construction. Sites closest to the Connecticut River are constrained by inland wetlands and flood plain elevations. In addition, an active rail line extends through the area and development would likely require installation of an at-grade crossing.

I.8. Alternate Sites at the Property

Once the Rood Avenue Property was determined to provide the best opportunity to support the needed Substation development, alternative substation footprints (size and configuration) and locations were evaluated for placement of the facility. Evaluation factors included proximity to: existing utility infrastructure (to accommodate interconnections and

required line profile separations); neighboring homes; existing vegetation; and wetland resources. Because an existing 115-kV circuit and access road extend through the central portion of the site, this general area was identified as having the highest potential for development of the Substation. The proposed footprint location and configuration was ultimately selected because it best balances technical and safety requirements; provides adequate buffers for neighboring properties, and limits direct effects to existing natural resources by minimizing tree clearing, earthwork, and alteration of wetlands.

I.9. System Alternatives

As previously discussed, CL&P considered alternative system design options to meet the challenges in Windsor. However, available options would produce a Windsor distribution system that is not as reliable and flexible as the system which will result from the proposed Project and, ultimately, would not eliminate the need for the proposed facility to meet system capacity projections.

CL&P develops and manages an array of traditional energy efficiency or Demand Side Management (“DSM”) programs statewide through the Connecticut Energy Efficiency Fund (“CEEF”). CL&P’s residential, commercial and industrial customers in the Towns of Avon, Bloomfield, East Granby, Granby, Hartford, Lebanon, Simsbury, Tariffville, Weatogue, West Hartford, West Suffield and Windsor are served by the North Bloomfield Substation. In 2005 and 2006, CL&P estimates that through participation in these CEEF programs, customers in these twelve towns have achieved peak-demand savings of approximately 15 MW and will save approximately 1,286,929,352 kWh of energy over the life of the installed measures.

As part of Public Act 05-01 incentives to support the development of distributed generation (“DG”), CL&P has contacted a number of customers in the areas served by the North Bloomfield Substation to determine if they will consider installing DG or CHP projects. To date approximately 2.5 MW of generators at multiple customer locations are under consideration for the 2007-2009 time frame. No project has been approved yet. CL&P continues to pursue conservation and load management programs throughout its system and offers those programs to customers located in the area served by these substations.

I.10. Summary of Alternatives Analysis

A comparative analysis of the sites considered for the Project is provided in the following table.

Table I-1: Rood Avenue Substation Site Alternative Analysis Matrix

Review Criteria	Location 1 Park Avenue	Location 2 Washington Street	Location 3 Matianuck Avenue	Location 4A Rood Avenue Proposed Site	Location 4B Rood Avenue	Location 5 Windsor Avenue	Location 6 Deerfield Road	Location 7 Midian Avenue
Proximity to Distribution Load Pocket and Existing Feeders		√	√	√	√	√		
Proximity to Existing Transmission Lines	√	√	√	√	√	√		√
Sufficient Distance to Neighbors and Other Surrounding Features				√				
No Natural/Cultural Resources Constraints				√				
No Zoning and Land Use Constraints				√				
Ease of Access		√	√	√	√			
Sufficient Size and Shape	√			√				
Sufficient Distance from Public Watershed/Aquifers	√	√	√	√	√	√	√	√
Minimal Earthwork Requirements				√				

J. SAFETY AND RELIABILITY INFORMATION

The Project would be constructed in full compliance with the standards of the National Electrical Safety Code, the Connecticut Department of Public Utility Control, and good utility practice. Should energized line or substation equipment fail, protective relaying equipment would immediately remove the equipment from service, thereby protecting the public and the remaining equipment within the Substation.

The Rood Avenue Substation would be equipped with measures to ensure continued service in the event of outages or faults on transmission or substation equipment. Continued reliability would be achieved by incorporating a “loop through” design configuration for the existing 115-kV overhead transmission line, transformer protection, and redundant automatic protective relaying equipment.

Protective relaying equipment would be provided to automatically detect abnormal system conditions (e.g., a faulted overhead transmission line) and would send a protective trip signal to circuit breakers to isolate the faulted section of the transmission system. The protective relaying schemes would include fully redundant primary and backup equipment so that a failure of one scheme does not require the portion of the system being monitored by the protective relaying equipment to be removed from service.

The protective relaying and associated equipment, along with a Supervisory Control and Data Acquisition (“SCADA”) system for remote control and equipment monitoring by the Connecticut Valley Electric Exchange (“CONVEX”) System Operator, would be housed in a weatherproof, environmentally-controlled electrical enclosure.

CL&P incorporates Institute of Electrical and Electronic Engineers (“IEEE”), American National Standards Institute (“ANSI”) and National Fire Protection Association (“NFPA”)

standards for fire protection in its substation design 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 deal with a substation fire. The control enclosure would be locked and equipped with fire extinguishers, and also equipped with smoke and heat detectors that would be monitored from a remote location. Fire/smoke detection would automatically activate an alarm at CONVEX and the system operators would then take appropriate action.

Additional devices would constantly monitor the Substation equipment to alert CL&P of any abnormal or emergency situations. The perimeter of the Substation would be enclosed by a seven-foot high chain-link fence topped with an additional foot of three strands of barbed wire to discourage unauthorized entry and/or vandalism. High voltage warning signs would be affixed to the fencing surrounding the Substation. Steel structures within the Substation will be predominantly designed as I-beam type construction and be more difficult to climb than lattice-type structures. Also, existing steel structures at the Rood Avenue switching station will be removed and replaced by wood poles commonly found along most public roads. The Substation entrance would be gated and locked. Lighting would be available within the Substation yard to facilitate work at night or during inclement weather.

CL&P would install a sump to serve as an oil-spill containment chamber for the proposed transformer. The sump would be sized with sufficient capacity to contain a spill in the event of an inadvertent release of oil. CL&P proposes to install an Imbiber Beads Drain Protection System® for the sump, similar to containment systems installed at other CL&P substations, including Shunock Substation in North Stonington.

K. EFFECTS ON THE ENVIRONMENT

The development of the Rood Avenue Substation would not have any significant, long-term adverse effects on the existing environment and ecology, nor would it affect the scenic, historic and recreational values of the vicinity. A *Proposed Conditions Map* is included as Figure K-1.

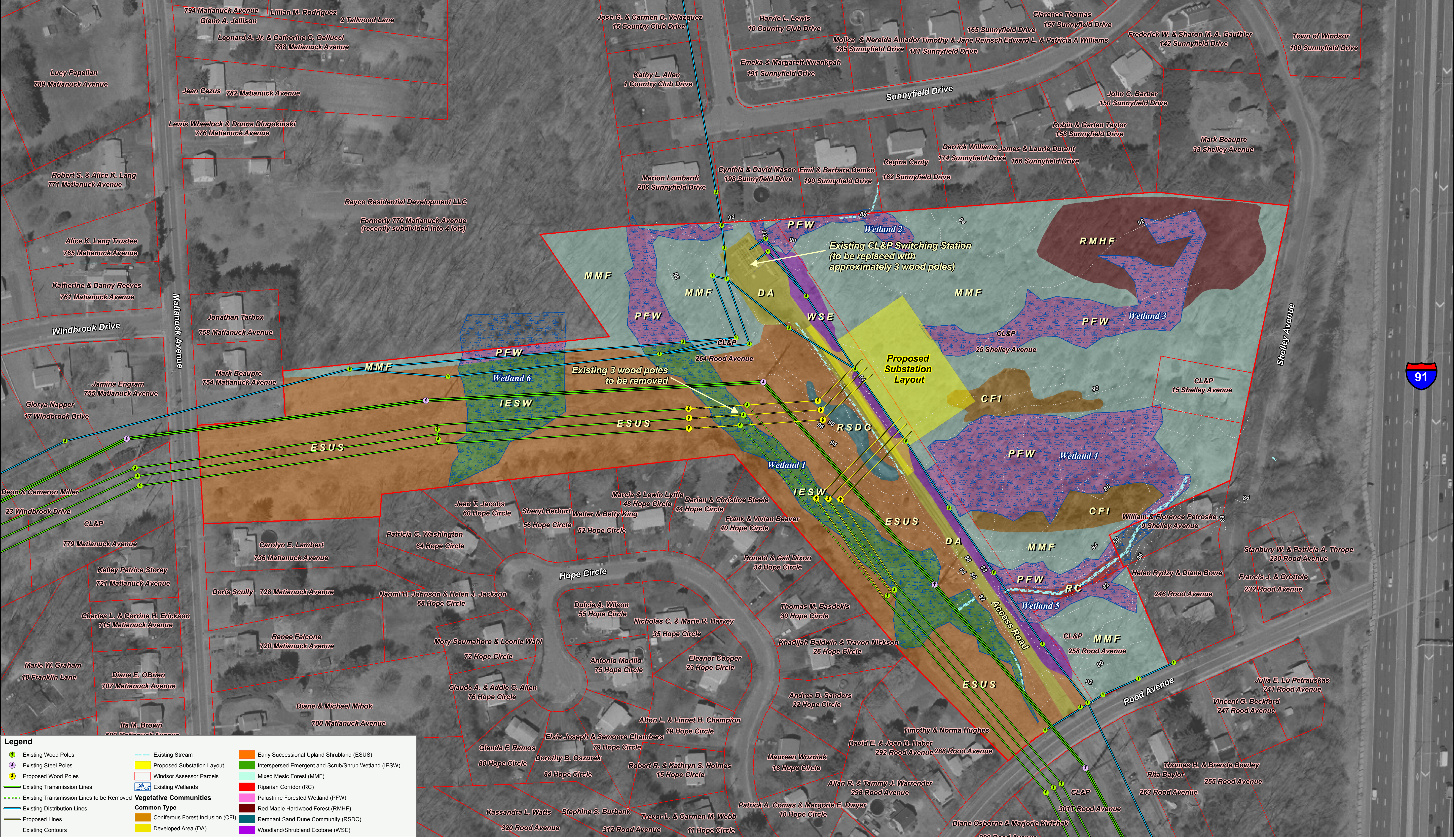
K.1. Public Health and Safety

The Rood Avenue Substation would be designed to applicable CL&P, industry, State, and local codes and standards and would not pose a safety concern or create undue hazard to the general public. The Substation would not consume any raw materials, would not produce any by-products and would be unmanned during normal operating conditions. Applicable signage would be installed alerting the general public of the dangers of high voltage associated with the Substation.

K.2. Local, State and Federal Land Use Plans

The proposed Project is consistent with local, State, and federal land-use plans. Local land use application processes do not specifically apply to the Project. However, the Project has been designed to meet the intent of local land-use regulations. CL&P has met with Town officials and provided a Location Review submission to Windsor's Inland Wetlands and Watercourses Commission, which unanimously approved the location on June 5, 2007. A similar submission was also received and reviewed by the Planning and Zoning Commission, which unanimously provided location approval at its June 12, 2007 meeting. CL&P also met with the Town's Economic Development Commission on July 18, 2007 at which time they voted unanimously to support the Project. CL&P met again with the Planning and Zoning Commission on October 9, 2007 to present a Project revision to the Location Review submission, as described

Figure K-1: Proposed Conditions Map



in the Municipal Consultation Filing (the Substation footprint was relocated approximately 40 feet north to eliminate encroachment into a wetland resource). Similarly, CL&P representatives met with the Town's Environmental Planner and Inland Wetlands Agent, Cyd Groff, on October 17, 2007 to discuss the reduction of wetland impact as a result of the Project revision. Both the Planning and Zoning Commission and Ms. Groff were supportive of the revised location.

K.3. Existing and Future Development

The Rood Avenue Substation would benefit the community by improving electrical service for existing development in Windsor and supporting additional development through enhanced reliability and the capacity to serve additional load. The Town of Windsor does not currently have its own bulk power substation source.

The Substation would be situated immediately east of the existing transmission line corridor and access drive, generally in the north-central portion of the Property. The Substation would have a fenced area of approximately 220 feet by 137 feet. The existing dirt access drive would be upgraded and continue to serve as entry/egress to the facilities. Connecting the Substation to the existing 115-kV line requires the installation of two new terminal structures within the Substation and two new wood-pole structures supporting a line disconnect switch, each consisting of three wood poles; three wood poles and six guy wires near to the western Property line; the removal and relocation of a wood-pole angle structure where the existing 115-kV transmission line turns to the west; and the installation of a wood-pole support structure immediately west of the Substation footprint and access drive. As part of the overall improvement plans on the Property, the 23-kV switching station near the northern Property boundary will be removed and replaced with approximately three wood poles.

K.4. Roads

Minor improvements would be made to the existing drive to allow for more reliable access to the Substation by construction and maintenance vehicles. Modifications to the access drive include re-grading, widening to accommodate larger vehicles, and resurfacing with gravel upon completion of the Project. A bituminous concrete apron would be provided at the entrance of the Property at its junction with Rood Avenue. At the terminus of the access drive, a level, crushed stone parking/turn-around area would be created for vehicles. As a result, the access drive improvements would not require tree clearing. During construction, the access drive would be stabilized with stone, and anti-tracking mats installed at the intersection of Rood Avenue, to prevent tracking of soil onto local streets. Upon completion of the Substation, the access drive would be finished with a gravel surface and gated. After construction is completed, approximately three to four vehicular trips per month to the Property would be anticipated for maintenance and inspection activities.

K.5. Wetlands

Six wetland areas were identified on the Property. Development of the Rood Avenue Substation would result in temporary and permanent impacts to portions of two of these wetlands. These impacts are associated with construction of the Substation footprint and installation of transmission line structures that will connect the existing transmission line to the Substation. Permanent and temporary wetland impacts associated with the proposed activities are described in detail below. The Town of Windsor's Inland Wetlands and Watercourses Commission regulates a 150-foot upland review area for wetlands and watercourses. Due to the

size and extent of wetlands on the Property, only small outlying portions of the Property fall outside of upland review areas.

K.5.1 Substation Footprint

The Substation would result in minimal temporary and permanent impacts to one wetland. Approximately 490 square feet of Wetland 3 would be permanently impacted by the Substation footprint. Wetland 3 would also experience ± 575 square feet of temporary impacts associated with vegetation clearing around the perimeter of the Substation to facilitate construction activities and for technical and safety reasons. Historical disturbances to these relatively small wetland areas have diminished their functions and values.

K.5.2 Transmission Line Work

Connecting the existing 115-kV 1751 transmission line to the Substation would require the installation of three wood poles, each within five-foot diameter cassions and eight associated guy-wire anchors within and adjacent to Wetland 1, resulting in approximately 40 square feet of permanent impacts and 2,228 square feet of temporary impacts. Removal of a wood-pole angle structure from Wetland 1 at the western turn of the 115-kV line would require minimal temporary impacts (290 square feet). Replacement of the angle structure west of Wetland 1 will result in temporary impacts (approximately 1,190 square feet) to cross this wetland via 14-foot wide timber mats to allow for construction access to this location. Work associated with these transmission line modifications would result in 40 square feet of permanent wetland impacts and 3,708 square feet of temporary wetland impacts. Areas temporarily disturbed by construction activities would be restored with native shrubs, grasses and forbs as appropriate. The relatively small area of permanent impacts resulting from new utility pole work is not expected to adversely impact the principal functions or values of Wetland 1. This wetland area is primarily

occupied by disturbed emergent and scrub/shrub habitat and such habitat would be maintained post-construction.

The existing access drive from Rood Avenue would be upgraded and improved with gravel. No temporary or permanent disturbance to wetlands would result from this work.

Removal of the 23-kV switching station and installation of wood poles would require work in proximity to Wetlands 1 and 2 but will not result in any direct temporary or permanent impacts.

K.5.3 Wetland Impact Summary

Permanent and temporary wetland impacts associated with the proposed activities are summarized in the table below.

Table K-1: Wetland Impact Summary

Activity ID	Activity	Wetland # Impacted	Permanent (sq. ft.)	Temporary (sq. ft.)
A	Install 3 poles & associated guy wires & caissons	1	40	2,228
B	Remove 3 poles from wetland	1	0	290
C	Temporary wetland crossing	1	0	1,190
D	Establish substation footprint	3	490	575
Total:			530	4,283

Note: No permanent or temporary impacts are proposed within Wetland 2, Wetland 4, Wetland 5 or Wetland 6.

K.6. Wildlife and Vegetation

Construction of the Substation would not have significant adverse effects on vegetation, wildlife or habitat values. The majority of the Rood Avenue Substation site would occupy what is currently upland forest habitat with a small portion of the Substation footprint occurring in a forested wetland. Permanent and temporary wetland impacts associated with connections and improvements to the existing transmission line corridor (i.e., installation of poles and associated

guy wires and caissons, removal of poles and temporary wetland crossing) occur primarily within emergent and scrub-shrub wetland areas. The vegetation and wildlife survey of the Property conducted by Maguire determined that the most significant wildlife attribute of the Property is its function as a wildlife corridor, which is a feature that will be maintained post-construction. Therefore, the Project would not have an adverse effect on wildlife due to maintenance of the wildlife corridor feature, the conifer inclusion, and the Substation footprint's immediate proximity to similar habitats that would allow for natural relocation of potential wildlife from the construction zone.

K.6.1. Rare, Threatened, and Endangered Species

No state or federally endangered, threatened or special concern species were found to occur on-site during the various inspections of the Property. Based on current CTDEP NDDB review criteria, the proposed Substation project does not present a potential conflict with a listed species or significant natural community. In addition, CL&P corresponded directly with the CTDEP and was provided a letter of "No Effect" on August 22, 2006. A copy of the *CTDEP Correspondence* is provided as Exhibit 4.

A small (\pm 2,000 square foot) sand dune was identified during the vegetation and habitat survey of the Property. Portions of the sand dune would be disturbed due to grading activities associated with connecting the Substation to the existing transmission lines. Maguire reported that the sand dune exists as a small remnant patch of habitat and therefore was not considered exemplary.

K.7. Water Supply Areas

The closest public water supply wells are part of the Windsor Locks Wellfield (a State-designated Preliminary Aquifer Protection Area), located approximately 4.5 miles north of the

proposed Substation. The transformer at the Rood Avenue Substation would contain insulating oil; however, the equipment would have secondary containment and accidental spill prevention provisions in place. Based on these design considerations and the physical distance of the water supply wells to the Rood Avenue Substation, the Project would have no adverse environmental effect on the aquifer.

K.8. Historic and Archaeological Resources

Consultation with the Connecticut SHPO indicated concern for the potential for this property to yield significant subsurface cultural deposits. At the request of SHPO, a cultural resources survey was conducted at the Property. Prior to the initiation of subsurface testing, a pre-field work archaeological assessment was completed by reviewing previous archaeological studies and resources recorded in the region, historic maps, and aerial images depicting the Property. Field work for this investigation consisted of pedestrian survey, systematic subsurface testing, mapping, and photo-documentation.

The results of this investigation revealed significant soil disturbances and no evidence of cultural deposits and/or cultural features. Further, no historic standing structures or historic period cemeteries were identified. Therefore, no cultural resources will be impacted as a result of the planned Substation construction. A copy of the *Phase I Cultural Resources Reconnaissance Survey Report* is provided as Volume II, Exhibit 5. The SHPO was provided a copy of this report and, after its review, provided a determination of “no effect” for the Project (see Volume II, Exhibit 6, *SHPO Determination Letter*).

K.9. Noise

Ambient sound-pressure levels were measured at four Property line locations during night time hours on July 27, 2007. These locations are depicted on Figure K-2, *Locations of Ambient Sound Level Measurements*. At two of the locations the sound-pressure levels were

Figure K-2: Locations of Ambient Sound Pressure Level Measurements



high enough to qualify as “high background noise” according to State Regulations. At the remaining two locations the measured sound-pressure levels were slightly less. The main source of noise in the area is traffic noise from I-91.

Due to generous buffer zones provided by the site, the increase in the sound-pressure levels (“SPLs”) at the Property line due to the addition of the Substation can best be described as “negligible”, ranging from close to 0 dBA to 0.2 dBA. The projected noise levels generated by the Substation at the Property boundaries would be well below these levels and therefore will comply with applicable noise regulations.

Table K-2: Summary of Noise Analysis Results

Property line Location Number	1	2	3	4
Existing SPL (dBA)	54	53	50	60
Estimated SPL due to Transformer (dBA)	29.9	29.4	32	33.5
Estimated new total SPL (dBA)	less than 55	Less than 55	50.08	60.2
Max. allowable night time SPL per State Regulations (dBA)	59	58	51	51
Estimated increase in SPL (dBA)	Less than 0.05	Less than 0.05	0.08	0.2

Infrequent impulse noise would be generated from switching and circuit breaker opening and closing. The impulse noise levels are not expected to exceed the levels permitted at the Property line by CTDEP’s noise control regulations. In the event of a transformer outage, resulting in the need for temporary use of a mobile transformer at the Substation, noise levels may increase slightly, but not in excess of State regulations.

The construction and testing of the Substation facilities is expected to occur over a 10- to 12-month period. In general, construction hours would be from 7 am to 5 pm, Monday through Friday. Site preparation, including grading and installation of foundations, would take place

during the initial 6 months of construction and involve the use of earth-moving equipment and construction vehicles.

The installation and testing of equipment would take approximately 5 months and would involve the use of cranes to unload and install structural elements and large equipment. The installation of the 115-kV line and Substation terminal structures, interconnection of the supply lines to the Substation, and connections to the distribution system may occur outside of normal work hours because these activities necessitate taking critical transmission and/or distribution equipment out of service. As a result, this work could be scheduled for off-peak electrical demand hours and coordinated with the Town and ISO-NE.

K.10. Floodplains

No construction activities would occur at elevations at or below the Deckers Brook's 100-year base flood elevation of 80 feet AMSL. Elevations within the proposed construction footprint would range from approximately 90 to 94 feet AMSL.

K.11. Seismic Areas

As with all substations constructed by CL&P, this Substation will meet or exceed applicable portions of the State building code, which includes seismic loading, wind loading, and snow and ice loadings, among others.

K.12. Lighting

The Rood Avenue Substation would have low-level lighting for safety and security purposes. However, 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.

K.13. Natural Resources

No adverse effects are anticipated on natural resources occurring at and/or nearby the Property. Minor earthwork is required to accommodate the Substation at the Site.

K.14. Other Surrounding Features

No adverse effects are anticipated to the facilities depicted on Figure H-3, primarily because of their sufficient distance from the Substation and/or the presence of I-91.

L. MITIGATION MEASURES

Based on the existing conditions at the Property and the proposed design, the construction and operation of the Substation would not have any significant permanent adverse effects on the environment. CL&P has incorporated measures into all phases of Project development and implementation to promote protection of the environment in accordance with Federal, State and local requirements.

L.1 Pre-Construction Considerations

Before any construction activities occur, CL&P would prepare a Development and Management Plan (“D&M Plan”), which must be approved by the CSC. The D&M Plan would incorporate CL&P’s current *Construction Best Management Practices*, which are designed to minimize or eliminate potential adverse environmental effects which may result from construction activities. The content of the plan would include specific procedures and information on erosion and sedimentation control, spill prevention and control, construction staffing and hours, traffic control, and provisions for restoration and landscaping after construction of the Substation. The D&M Plan would also provide contact information should questions or concerns arise during construction or operation of the facility.

Prior to commencement of construction, CL&P intends to install erosion controls at the limits of work in accordance with the approved D&M Plan and the *2002 Connecticut Guidelines for Soil Erosion and Sedimentation Control*. The erosion controls would be inspected and maintained throughout the course of the Project until final site stabilization has been achieved.

L.2 Construction-Related Activities

All construction activities would be conducted in accordance with the D&M Plan as approved by the CSC. The siting and design of the Substation provides for a sufficient setback from Rood Avenue and neighboring residences and minimizes vegetation loss such that a natural tree and shrub buffer would be retained. The access drive and Substation would be graded to contain stormwater runoff on the Property. The remainder of the stormwater would infiltrate through the gravel base of the Substation or would be allowed to run off through vegetated uplands.

L.3 Post-Construction Features

Upon completion of construction activities, all disturbed/exposed areas would be stabilized and revegetated. These areas would be dressed with topsoil and seeded with a New England conservation/wildlife mix, to establish a cover of native grasses, forbs, wildflowers and legumes that would provide both soil stability and wildlife habitat value. Erosion controls would remain in place until final site stabilization is achieved.

The power transformer within the Substation would contain insulating fluid. Surrounding the transformer will be a secondary containment consisting of polyvinyl-lined sump, designed to hold 110% of the transformer's fluid capacity.

Although the Property provides vegetative buffer to adjoining residences, CL&P intends to develop a landscape plan to further mitigate any potential views of the substation (Volume II, Exhibit 1, *Site Plan Drawings* depict the general areas proposed for landscaping). The plantings would be clustered along the western and northern ends of the Substation to provide an additional visual buffer as well as habitat for resident and migratory wildlife. The final design and plant list will be incorporated into the D&M Plan.

Effects on wildlife and wildlife habitat would be temporary disturbance during construction and would be mitigated through restoration of disturbed areas and supplemental plantings. The Property is currently used by wildlife species that are commonly found and are adaptable to minor habitat modifications. Based on the species identified and habitat types found on the Property, the Property should maintain its species diversity and abundance after the Substation is completed and operational.

L.4 Construction Sequencing

Construction is expected to occur over a period of 10 to 12 months with the Substation in service by June 2009. The general construction sequence for the Substation and line interconnection would include:

- Completing test borings
- Installing erosion and sedimentation control barriers
- Upgrading the driveway
- Removing trees and shrubs within the areas to be graded
- Site preparation (cut, fill, grading)
- Slope stabilization where necessary
- Installing Substation foundations, conduits and grounding grid
- Spreading of trap rock
- Installing steel structures and Substation equipment
- Making transmission line interconnections
- Energizing the Substation
- Completing landscaping and site restoration activities
- Removing erosion and sedimentation control barriers

M. HEALTH AND SAFETY

M.1 Electric and Magnetic Fields

Electric fields (“EF”) are produced within the surrounding area of a conducting object (e.g., a wire) when a voltage is applied to it. Electric fields are measured in units of kilovolts per meter (“kV/m”). The level of an electric field near to an energized power line depends on the applied voltage, the distance between the conductors, and the distance to the measurement location.

Magnetic fields (“MF”) are produced within the surrounding area of a conductor or device which is carrying an electric current. Magnetic fields are measured in units of milliGauss (“mG”). The level of a magnetic field near to line conductors carrying current depends on the magnitude of the current, the distance between conductors, and the distance from the conductors to the measurement location.

Both electric and magnetic fields decrease rapidly as the distance from the source increases, and even more rapidly from electric equipment in comparison to line conductors. Electric fields are further weakened by obstructions such as trees and building walls, while magnetic fields pass through most obstructions. In the case of parallel lines of circuit conductors, the levels of EF and MF are also dependent on the phasing of the circuits.

The highest levels of electric and magnetic fields around the perimeter fence of a substation occur where transmission and distribution lines cross over or under the substation boundary. The levels of fields from substation equipment decrease rapidly with distance, reaching very low levels at relatively short distances beyond the perimeter fence. Substation-caused magnetic fields beyond the property line of a substation will commonly be in the same range as the background magnetic field levels in homes, which commonly range up to 4 mG.

The proposed Substation equipment will be positioned within the fence line, some 140 feet at its closest point to any property line, and at this distance, substation-caused magnetic fields will be well under 1 mG.

Pre-Project Electric and Magnetic Fields at the Boundaries of the Property

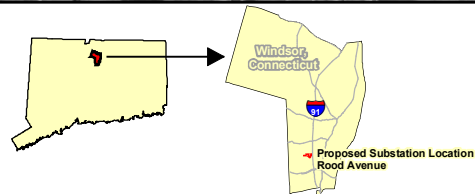
At and beyond the boundaries of the Property, the predominant existing sources of power-frequency electric and magnetic fields (“EMF”) are the transmission lines (115-kV circuits numbered 1751 and 1779 and 345-kV circuit numbered 395) and 23-kV distribution lines (circuits 3B11 and 3B12). Two existing lines of CL&P transmission structures support the three transmission circuits. These transmission lines cross boundaries of the Property at Rood Avenue and at Matianuck Avenue, and they are near to the south boundary of the Property which abuts the Hope Circle subdivision. A two-circuit 23-kV distribution line (circuit 3B11 and 3B12) coming east from Bloomfield Substation runs parallel to and north of these transmission lines, crossing the same property boundaries, and one of these circuits also connects on site to a branch line which crosses over the north property line.

Measurements of the existing, pre-project electric and magnetic fields were taken along Rood and Matianuck Avenues in June, 2007. The *Locations of EMF Measurements* are depicted on Figure M-1. The measurement results are plotted on the four graphs (number 1 through 4) following Figure M-1. Two graphs illustrate existing magnetic fields and two depict existing electric fields. Per an industry standard, these measurements were made at one meter above grade over a path on the Property that is perpendicular to the existing transmission lines. The result is called a lateral profile. The highest magnetic field level recorded was 9.3 mG, and the highest electric field recorded was 1.19 kV/m.

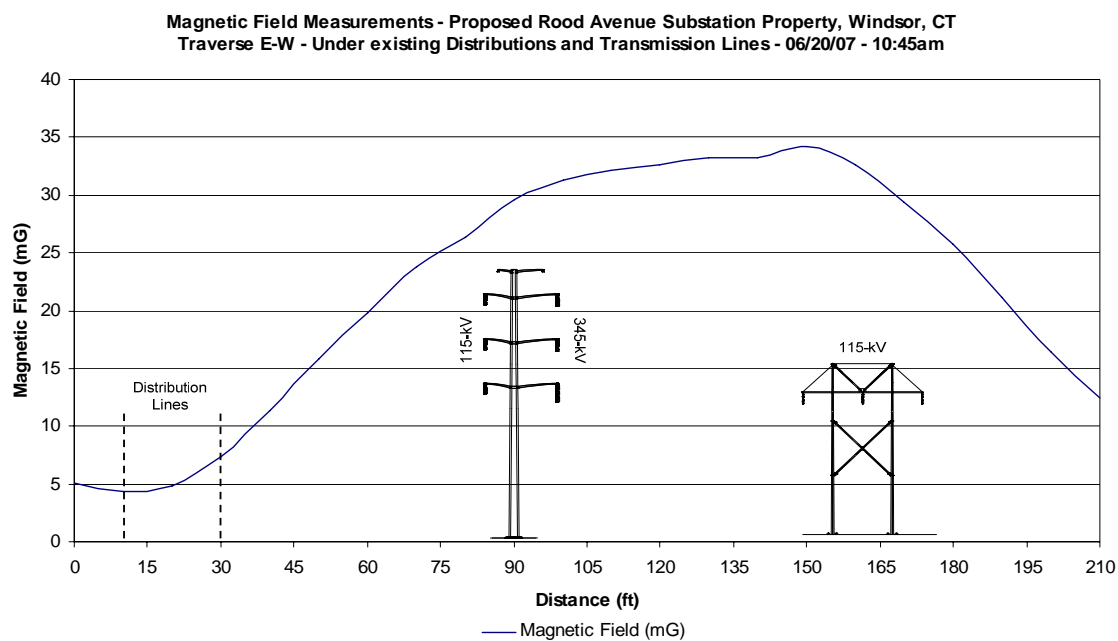
The magnetic field measurement results represent magnetic field levels recorded for specific locations at a specific point in time, produced by the set of transmission and distribution line currents that existed at that point in time. During peak-load periods of a year, the line currents would likely be higher than they were during the measurement period in June, 2007, and so magnetic field levels would also be somewhat higher. On the other hand, the electric field measurement results would be about the same no matter what the line currents are, assuming the same degree of shielding by vegetation.

For the aforementioned reasons, these measurement results should be considered only as an example of the existing conditions on the Property.

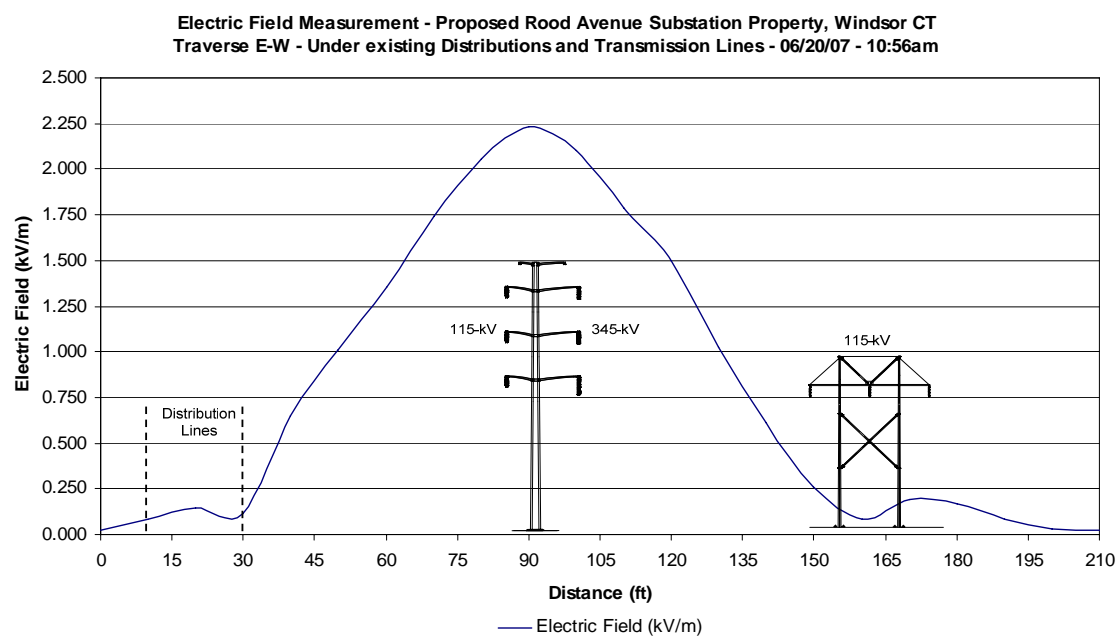
Figure M-1: Locations of EMF Measurements



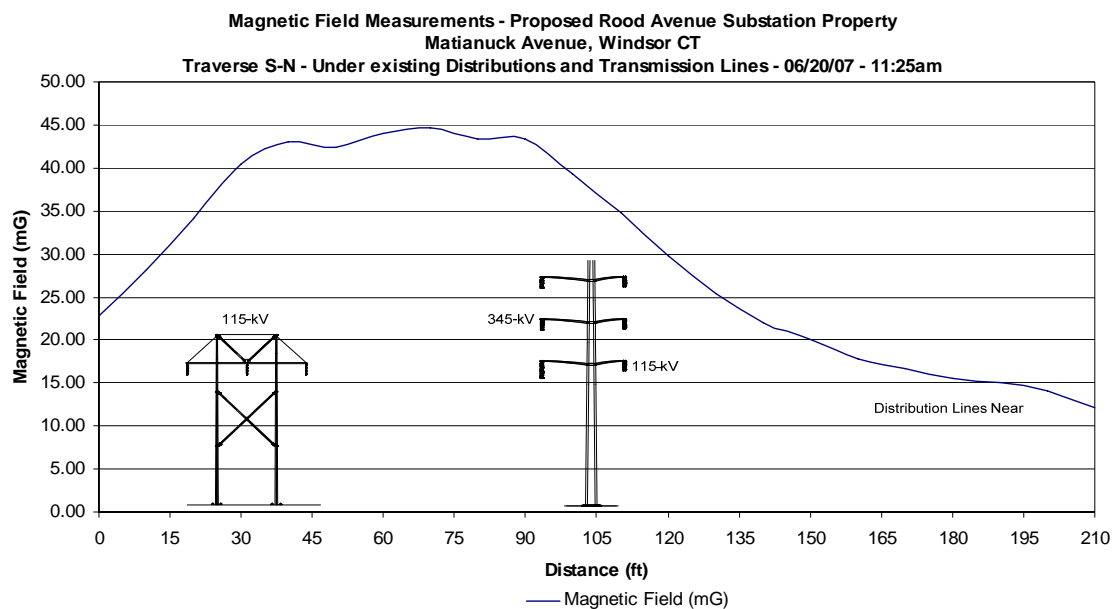
Graph No. 1



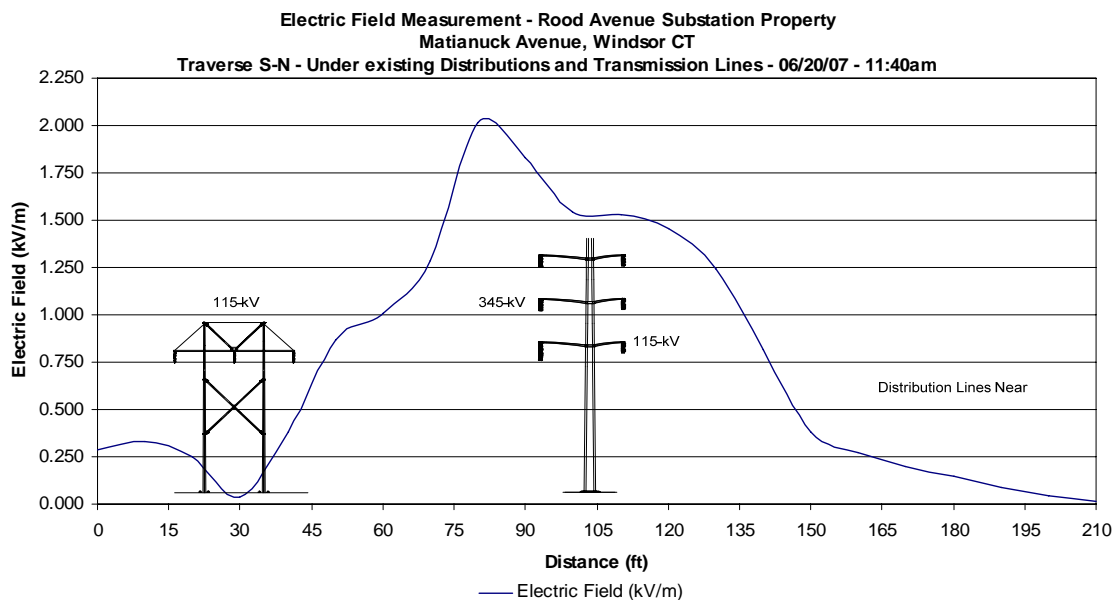
Graph No. 2



Graph No. 3



Graph No. 4



Post-Project Electric and Magnetic Fields on Boundaries of the Property

Electrical equipment to be placed in the proposed Substation will be more than 140 feet away from the closest property line. At such a distance, the Substation equipment within the fenced area will not cause any noticeable change in either the electric or magnetic fields along or beyond the property lines. However, there will be changes to magnetic field levels, both higher and lower, at certain points along existing property due to: 1) physical changes that will be made to the 1751 transmission line circuit to interconnect it with the Substation; and, 2) the Substation and associated distribution load shifts that will cause changes to the currents flowing on the 115-kV transmission circuits and the 23-kV distribution circuits.

As required by the Council's draft document *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Facilities in Connecticut*, May 22, 2007, CL&P made projections of magnetic field levels on the property lines of the Property using projected peak-day line currents for a period of 5 years after the Substation's in-service date, which in this case is through the year 2014. These calculations were made for both the pre-project condition, assuming the proposed project was not built, and the proposed post-project condition.

Per standard practice, calculations were made assuming balanced three-phase line currents in the transmission and distribution circuits, equal phase angles and predominant directions for the transmission circuit currents, level terrain, and line conductor heights above grade which are typical for the locations modeled. Calculations were not made for electric fields since the voltage on the lines is not changing and the lines are not being modified where they exit the Property. Therefore, the measured values of electric fields as depicted on Graphs 2 and 4 represent the post-project expectation as well as the existing conditions.

Projected peak line currents in the year 2014, determined by system power-flow model simulations, were used for these calculations. Other assumptions used in the system power-flow model are: ISO-NE's forecast system summer peak load in 2014, no transmission circuit outages, Rood Avenue Substation installed as proposed with anticipated load transfers from other substations, a generation and transmission system which includes all new and modified elements which have already received Council and ISO-NE approvals and which have projected in-service dates before 2014, and a reasonably expected generation dispatch and Connecticut import level for a peak-load day with some large generators unavailable for service. Magnetic fields were calculated using these peak line currents, and also using 70% of these peak line currents as an estimated average circuit current during the peak day (i.e., "peak-day average load") in 2014. These choices comply with Section IV of the Council's May 22, 2007 draft "Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Facilities in Connecticut."

Calculations of the post-project magnetic fields were made for locations depicted on Figure M-2. The results of the post-project calculations are plotted on the four graphs numbered 5-8 following Figure M-2. Generally, the magnetic field levels increase at the line crossing over Rood Avenue and decrease at the line crossing over Matianuck Avenue. The highest magnetic field level along the southerly boundary with Rood Avenue, with the proposed substation in service, is projected to be 65 mG directly under the 115-kV circuit. This level is higher than it would be without the substation in service. The level without the proposed substation in service is projected to be 57.7 mG. The highest magnetic field level along the westerly property line on Matianuck Avenue, with the proposed substation in service, will be 41.7 mG. This level was calculated for a location directly under the combined 345/115-kV line and under the modeled

Figure M-2: Locations of Post-Project Magnetic Field Calculations



Legend

Locations of Magnetic Field Calculations	Existing Transmission Lines
Existing Distribution Poles	Transmission Lines to be removed
Existing Wood Poles	Existing Distribution Lines
Existing Steel Poles	Proposed Interconnections
Proposed Wood Poles	Proposed Substation Layout
CL&P Property	Existing CL&P Switch Station and Access

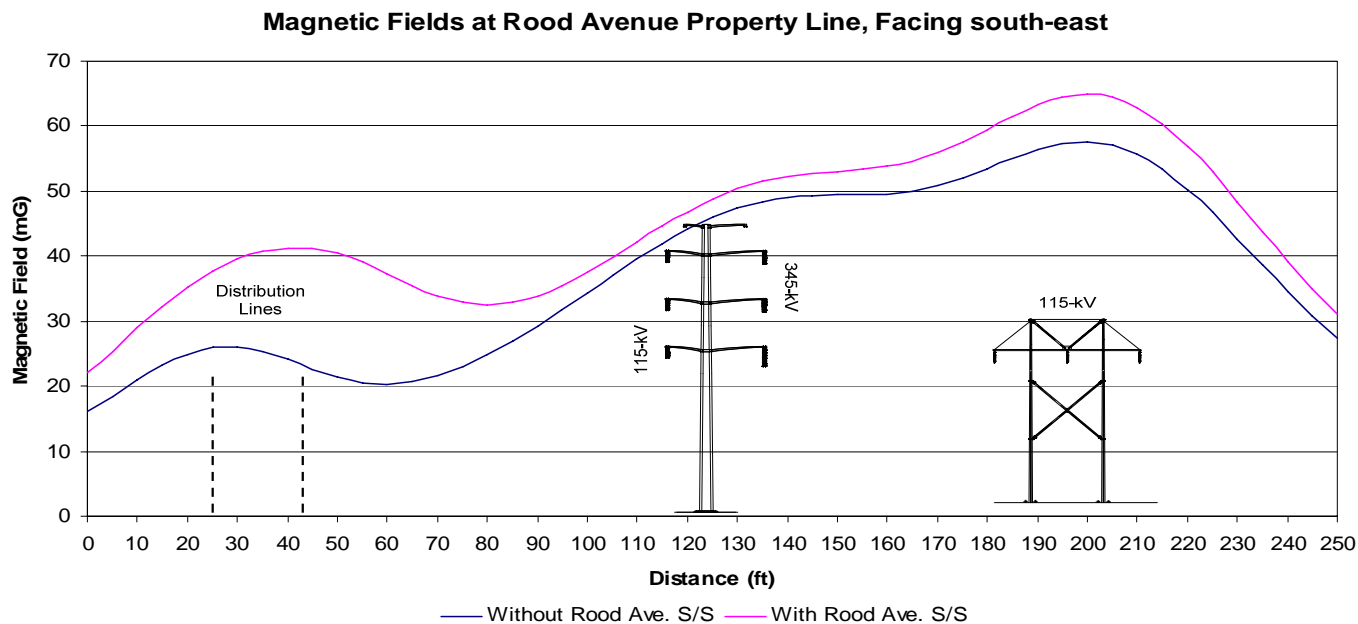
peak-load condition. This level is lower than it would be without the proposed project in service. Using the same peak-load conditions, the highest magnetic field level without the project in service is 53.2 mG.

Graphs of the calculated, post-project magnetic field levels also show contributions from the distribution circuits. For example, on Graph 5 which shows levels along the property line with Matianuck Avenue, the calculated magnetic field under the distribution line without the proposed project is more than 40 mG, rivaling the contribution from the transmission lines. With the proposed project in service, these circuits will normally carry no current, and the projected magnetic fields in the same area are less than 10 mG where the distribution line is located. Along the property line with Rood Avenue, magnetic fields directly under the distribution lines increase from 26 to 41 mG after the project is in service due primarily to an increase in load on these circuits.

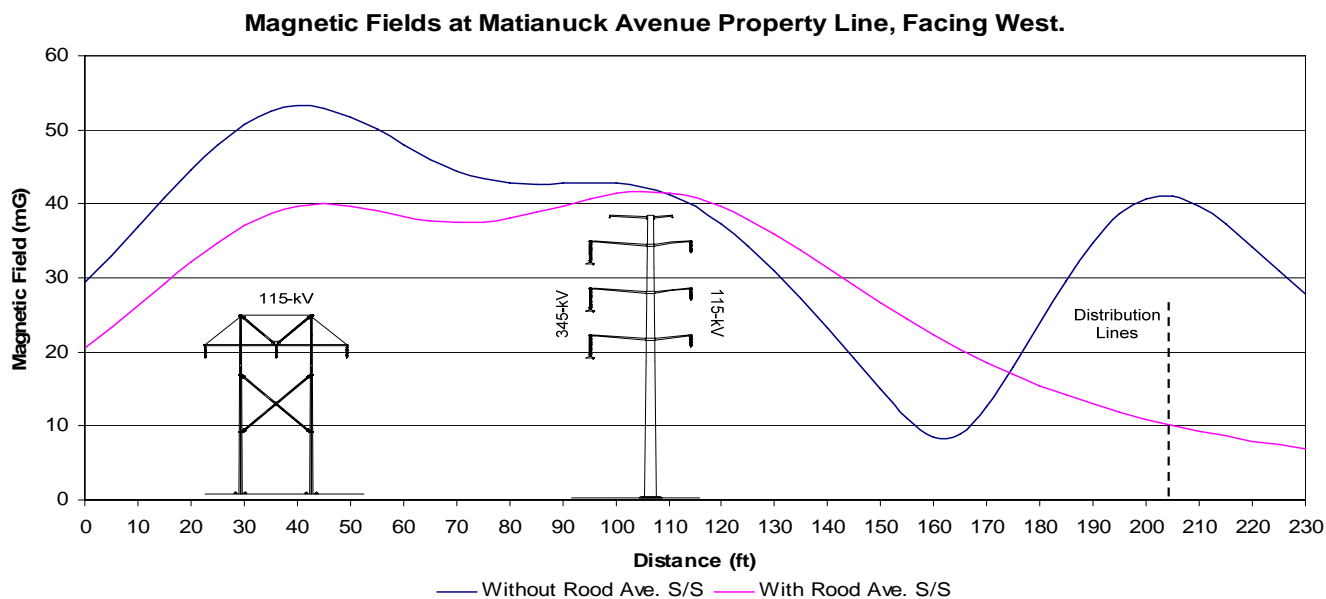
Graph 7 shows a drop in magnetic field levels, from 17 to 8 mG, along the fence line on the west side of the property, due to the fact that existing sections of 115-kV line conductor will be removed as the line is angled to loop into the proposed facility. Likewise, magnetic field levels also drop to the north because the distribution circuit exiting the Property to the north will carry less current.

Also, as depicted on Graphs 5-8, the MF levels continue to drop off rapidly with distance from the transmission line source, so the levels of MF at all points along a property boundary to either side of the transmission and distribution circuits will be much lower than the levels found beneath the circuits. Beyond a distance of approximately 200 feet from the outermost circuit, MF levels will remain at very low background or negligible levels.

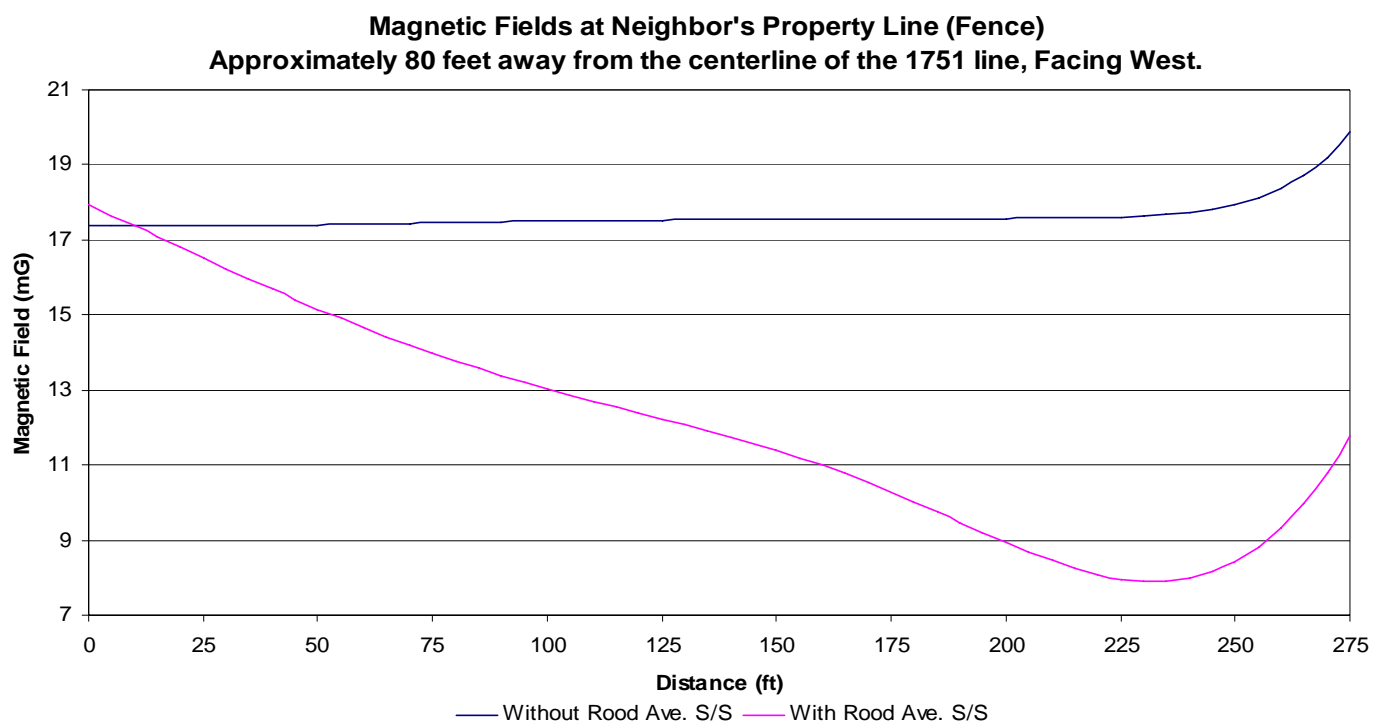
Graph No. 5



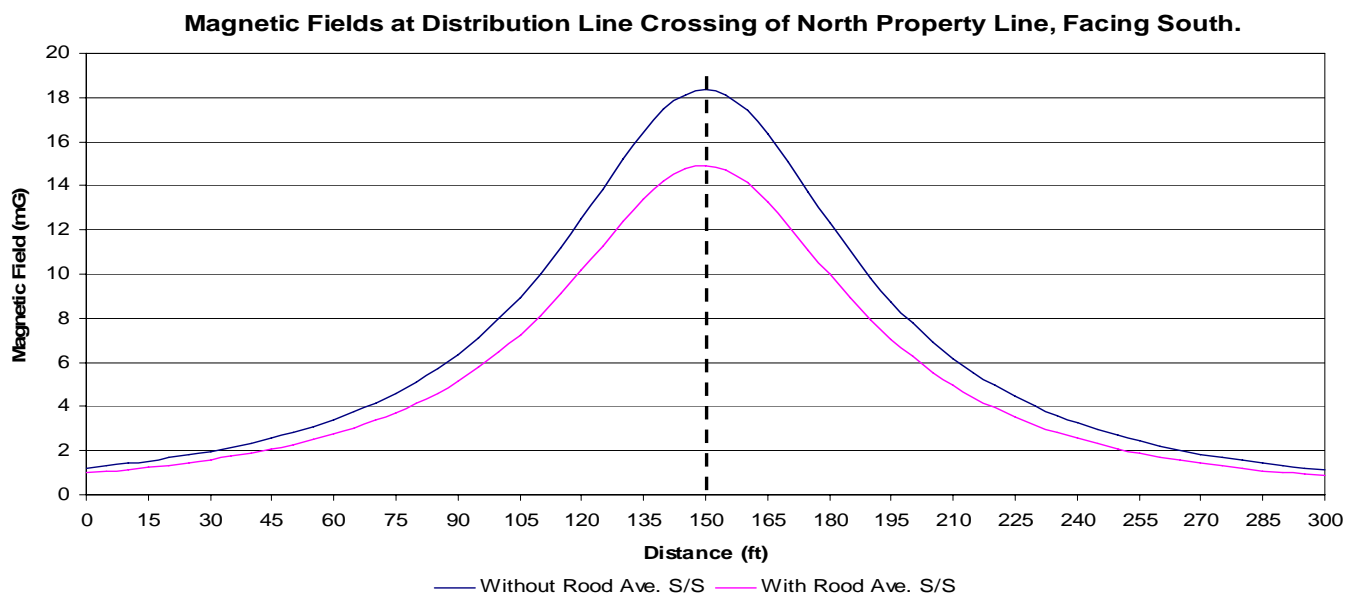
Graph No. 6



Graph No. 7



Graph No. 8



Summary

Consistent with the Connecticut Siting Council's *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Facilities in Connecticut*, May 22, 2007, the design of the Substation will incorporate field management practices as follows:

- the Substation has been located close to an existing transmission line so that the length of Substation entry spans is very short
- the Substation equipment has been located at a sufficient distance from property lines so that this equipment makes no noticeable contribution to EMF levels along these property lines
- vegetation will effectively screen electric fields

There are no State or Federal limits for electric or magnetic field levels at the property line of a substation. However, the IEEE and the International Commission on Non-ionizing Radiation Protection ("ICNIRP") have issued guideline limits for long-term public exposures to these fields. These limits are:

	<u>EF (kV/m)</u>	<u>MF (mG)</u>
IEEE	5.0	9,040
ICNIRP	4.2	833

The existing and proposed levels of electric and magnetic fields at and beyond the property lines of the proposed Substation are typical for all similar Substations and will be well below these IEEE and ICNIRP limits. Based on these aforementioned guidelines and science peer group reviews of epidemiological and laboratory studies, these electric and magnetic field exposure levels will not pose an undue safety or health hazard to persons or property at or adjacent to the Substation property.

M.2 Site Security

A seven-foot-high chain link fence topped by three strands of barbed wire would enclose the Substation yard to prevent unauthorized access. The Substation yard would also be gated and locked. All gates would be padlocked at the end of the workday during construction activities and at all times once the Substation is in service. Appropriate signage would be posted at the Substation alerting the general public of high voltage facilities located within the Substation. Should equipment experience a failure, protective relaying would immediately remove the equipment from service, thereby protecting the public and the equipment within the Substation. Other devices installed within the Substation would constantly monitor the equipment to alert CL&P of any abnormal or emergency situations. The access drive would be gated and locked at its entrance along Rood Avenue.

M.3 Traffic Considerations and Hours of Operation

Construction traffic would not greatly affect local traffic because Rood Avenue provides an east-west route used by motorists traveling through the area and site access would be gained from the existing, at-grade drive established along Rood Avenue. Post-construction site conditions would not substantially affect existing traffic patterns. Once construction of the Substation is complete, the facility would be remotely operated, with personnel onsite only for periodic inspections, maintenance and emergency work.

N. PROJECT SCHEDULE

Construction is expected to occur over a period of 10 to 12 months, with the Substation in service by June 2009.

O. GOVERNMENT APPROVALS OBTAINED

Table O-1 summarizes the applicable approvals required for this Project. Pursuant to Conn. Gen. Stats. § 16-50l(e), the Municipal Consultation Filing (“MCF”) was completed and delivered to the Town of Windsor CEO on September 5, 2007, beginning the 60-day (minimum) consultation process. During the MCF, CL&P met with the Windsor Planning and Zoning Commission on October 9, 2007 to provide a status of the Project. In response to the MCF, CL&P received a letter of support for the Project from Town Manager, Peter P. Souza, dated November 1, 2007 (see Volume II, Exhibit 7, *Government Approvals Obtained*).

On many occasions over the past eighteen months, CL&P has consulted with Town of Windsor officials, including the Town Manager, Peter P. Souza, and the Assistant Town Manager, Emily Moon, regarding the electric service provided by CL&P to the Windsor community and CL&P’s desire to improve the reliability of that service. CL&P officials also met with the Chief Elected Official, Mayor Donald Trinks. To meet the Town’s growing need for additional capacity, CL&P determined that a new substation would be required in Windsor. After evaluating several sites, CL&P considers the Rood Avenue Property to be the best location for a new substation.

CL&P filed “Location Review” submissions with the Windsor Inland Wetlands and Watercourses Commission (the “IWWC”) on May 30, 2007 and the Planning and Zoning Commission (the “P&Z”) on June 6, 2007.

At its regular meeting on June 5, 2007, the IWWC unanimously granted CL&P location approval for placement of a substation on the Property. Likewise, at its regular meeting on June 12, 2007, the P&Z unanimously granted location approval to CL&P for development of a

substation on the Property. Copies of the municipal location approval letters are attached (see Volume II, Exhibit 7, *Government Approvals Obtained*).

CL&P also met with the Windsor Economic Development Commission at its regularly scheduled meeting on July 18, 2007 to present the Project and its benefits to the community. The Commission unanimously voted to support the Project (see Volume II, Exhibit 7, *Government Approvals Obtained*).

TABLE O-1
PERMITS APPLICABLE TO THE ROOD AVENUE SUBSTATION PROJECT

AGENCY	PERMIT	DATE SUBMITTED	DATE RECEIVED	LOCATION
Connecticut Siting Council	Certificate of Environmental Compatibility and Public Need under Connecticut General Statutes Section 16-50l(a)(1)	November 7, 2007		
Connecticut Natural Diversity Data Base	T&E clearance under state Endangered Species Act (Connecticut General Statutes Sec. 26-303 to Sec. 26-315)	Consultation initiated in August 2006	August 22, 2006	CSC Application Volume II Exhibit 4, CTDEP Correspondence
Connecticut Historical Commission	Cultural Resource Consultation under Section 106 of the National Historic Preservation Act	Consultation initiated in August 2006	September 6, 2007	CSC Application Volume II Exhibit 6, SHPO Determination Letter
Town of Windsor	Municipal Consultation Filing under Connecticut General Statutes Section 16-50l(e)	September 5, 2007		CSC Application Bulk Filing #1

TABLE O-1
PERMITS APPLICABLE TO THE ROOD AVENUE SUBSTATION PROJECT

AGENCY	PERMIT	DATE SUBMITTED	DATE RECEIVED	LOCATION
Town of Windsor Inland Wetlands & Watercourses Commission	Location Approval Application under Connecticut General Statutes Section 16-50 x(d)	May 30, 2007	June 5, 2007	CSC Application Bulk Filing #1
Town of Windsor Planning and Zoning Commission	Location Approval Application under Connecticut General Statutes Section 16-50 x(d)	June 6, 2007	June 12, 2007	CSC Application Bulk Filing #1

P. BULK FILING OF MUNICIPAL DOCUMENTS

A bulk filing of municipal regulations and documents that were submitted to the Town of Windsor is being provided solely to the Council under a separate attachment, as part of this Application, including the below referenced applications submitted by CL&P and applicable local regulations, respectively:

- Application to the Town of Windsor Inland Wetlands and Watercourses Commission pursuant to Conn. Gen. Stats. § 16-50x(d) Location Review;
- Application to the Town of Windsor Planning and Zoning Commission pursuant to Conn. Gen. Stats. § 16-50x(d) Location Review;
- Town of Windsor Inland Wetlands and Watercourses Regulations;
- Zoning Regulations of the Town of Windsor, Connecticut, and accompanying amendments;
- Windsor Plan of Conservation and Development; and
- Municipal Consultation Filing.

Q. ADMINISTRATIVE NOTICE, PUBLIC AND ABUTTERS NOTICE, SERVICE AND OTHER FILING REQUIREMENTS

As requested by the CSC, CL&P is furnishing to the CSC one original and 20 copies of the Application, as well as an electronic version of the Application.

This Application is presented based on the CSC's June 2007 *Application Guide for Electric Substation Facility* to assist applicants in filing for a Certificate from the CSC for the construction of an electric substation as defined in CGS § 16-50i (a) (4).

CL&P also consulted CGS §§ 16-50g through 16-50aa and Sections 16-50j-1 through 16-50z-4 of the Regulations of Connecticut State Agencies in preparing this Application.

Q.1. Administrative Notice

CL&P requests administrative notice of the following CSC docket records, generic hearings or statements prepared by the CSC as a result of generic hearings, and other pertinent documents. We would suggest the following documents be included.

- *Connecticut Siting Council Review of the Connecticut Electric Utilities Ten-Year Forecast of Loads and Resources, 2004, 2005, 2006 and 2007*
- *Connecticut Guidelines for Soil Erosion and Sediment Control 2002*
- *Connecticut General Statutes Section 16-243 and Sections 16-11-134, and 135 of the Regulations of Connecticut State Agencies (and by reference, the National Electrical Safety Code ANSI C2, 2002 Edition)*
- *Current Status of Scientific Research, Consensus, and Regulation Regarding Potential Health Effects of Power-line Electric and Magnetic Fields (EMF), January 2006*
- Connecticut Siting Council's draft document, *Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Facilities in Connecticut, May 22, 2007*
- *Interagency Task Force Studying Electric and Magnetic Fields, Connecticut 1998 Report on Task Force Activities to Evaluate Health Effects from Electric and Magnetic Fields, January 1998*

Q.2. Pre-Application Process (CGS § 16-50l (e))

CL&P met with representatives of the Town of Windsor on several occasions prior to distribution of the MCF. On September 5, 2007, the MCF was distributed to the CEO, Town Manager and the Town Librarian, thereby commencing the formal municipal consultation period. During this time, CL&P sought input from the public and local government representatives.

Q.3. Application Filing Fees (Regs., Conn. State Agencies § 16-50v-1a)

The filing fee for this application is determined by the following schedule:

<u>Estimated Construction Cost</u>		<u>Fee</u>
Up to	\$5,000,000	0.05% or \$1,000.00, whichever is greater
Above	\$5,000,000	0.1% or \$25,000.00, whichever is less

Based on this schedule and the estimated construction cost for the Project presented in Section F, a check for the filing fee in the amount of \$13,800.00 payable to the CSC accompanies this Application. CL&P understands that additional assessments may be made for expenses in excess of the filing fee, and that fees in excess of the CSC's actual costs will be refunded to CL&P.

Pursuant to CGS § 16-50l(a)(1), CL&P also encloses a separate check in the amount of \$25,000 payable to the CSC for the municipal participation fee.

Q.4. Proof of Service (CGS § 16-50l (b))

This Application was served on the following:

- A. The chief elected official/chief executive officer, and where applicable, the zoning commission, planning commission, the planning and zoning commissions, and the conservation and wetlands commissions of the site municipality and any adjoining municipality having a boundary not more than 2,500 feet from the facility;
- B. The regional planning agency;

- C. The State Attorney General;
- D. Each member of the Legislature in whose district the facility is proposed;
- E. Any federal agency which has jurisdiction over the proposed facility; and,
- F. The State Departments of Agriculture, Environmental Protection, Public Health, Public Utility Control, Economic and Community Development, and Transportation; the Council on Environmental Quality; and the Office of Policy and Management.

The names of governmental officials and agencies on which a copy of the Application is being served (the “Proof of Service”) are provided in Volume II, Exhibit 8 (*Affidavit and Service List*). An Affidavit regarding Proof of Service is also provided in this Exhibit.

Q.5. Public Notices (CGS § 16-50I (b))

Notice of the Application (the “Notice”) was published at least twice prior to the filing of the Application in a newspaper having general circulation in the site municipality. The Notice included the name of the applicant, the date of filing and a summary of the Application. The Notice was published in not less than ten point type and run in the following newspaper:

- Hartford Courant on 11/02/07 and 11/05/07

Copies of the notices are provided in Volume II, Exhibit 9 (*Affidavit and Public Notices*).

Q.6. Notice to Owners of Property Abutting Substation Sites

Notice of the proposed Rood Avenue Substation Project was provided to abutters of the Property. Notification to the abutters was provided via certified mail, return receipt requested.

An Affidavit regarding the notice provided to owners of property abutting and nearby the proposed Substation is provided in Volume II, Exhibit 10 (*Affidavit of Notice to Abutting Landowners*). A *List of Abutting and Nearby Property Owners of Land of CL&P* is also provided in Volume II, Exhibit 10.

R. OTHER RELEVANT INFORMATION

As previously indicated, this Project was identified in the *Connecticut Siting Council Review of the Connecticut Electrical Utilities Ten-Year Forecast of Loads and Resources*, published in 2005, 2006, and again in 2007. CL&P received ISO-NE approval per *Section I.3.9 of the ISO New England Inc. Transmission, Markets and Service Tariff for the Rood Avenue Substation* for the proposed Project plan (see letter dated September 27, 2007 in Volume II, Exhibit 11, *Other Relevant Information*).

R.1 Public Outreach

On May 24, 2007, CL&P sent informational packages by mail to neighboring residents on Rood Avenue, Shelley Avenue, Sunnyfield Drive, Matianuck Avenue, Hope Circle, and Country Club Drive to inform them of the upcoming Project, its associated permitting process and a preliminary schedule of events. CL&P representatives conducted a door-to-door public outreach program in the Project area on Friday June 1, 2007, in an effort to meet with abutting neighbors to discuss the Project. The CL&P representatives spoke directly with several abutting property owners and informed them of upcoming municipal agency meetings, answered preliminary questions, and provided them with a point of contact should they have additional questions. For those neighbors not at home that day, Project and contact information was left on their door. A listing of those residents provided copies of the public outreach documents and the information contained in the mailing/door hangers are included in Volume II, Exhibit 11, *Other Relevant Information*.

At the Town's request, CL&P also sent out certified letters to abutters during the Location Review and MCF process to inform the neighbors of scheduled meetings regarding the

Project. Copies of the certified letter and abutters list are provided in Volume II, Exhibit 11, *Other Relevant Information*.

R.2 Exemption from CEAB RFP Process

Pursuant to Conn. Gen. Stats. § 16-50l (a) (2), as an electric substation designed to change or regulate voltage of electricity greater than 69kV, this project is exempt from the request for proposal process of the Connecticut Energy Advisory Board ("CEAB"). At the request of the CEAB, as a courtesy, CL&P furnished to the CEAB a copy of the municipal consultation filing cover letter on September 5, 2007, and the legal notice for this Application on November 2, 2007.

GENERAL GLOSSARY OF TERMS

(Not all terms are used in this document)

115-kV: 115 kilovolts or 115,000 volts.

345-kV: 345 kilovolts or 345,000 volts.

AC: (alternating current) An electric current which reverses its direction of flow periodically. (In the United States this occurs 60 times a second-60 cycles or 60 Hertz.) This is the type of current supplied to homes and business.

A-frame Structure: A steel structure constructed of two A-shaped uprights with horizontal cross-members and bracings.

Autotransformer: A single winding step-down transformer (see Transformer).

Ampere (Amp): A unit measure for the flow (current) of electricity. A typical home service capability (i.e., size) is 100 amps; 200 amps are required for homes with electric heat.

Arrester: Protects lines, transformers and equipment from lightning and other voltage surges by carrying the charge to ground. Arresters serve the same purpose on a line as a safety valve on a steam boiler.

Bundle: (circuit) Two or more parallel 3-conductor circuits joined together to operate as one single circuit.

Bundle: (conductor) Two or more phase conductors or cables joined together to operate as a single phase.

Bus: A conductor capable of carrying large amounts of current in a substation.

Cable: A fully insulated conductor usually installed underground but in some circumstances can be installed overhead.

CTDEP: Connecticut Department of Environmental Protection.

CELT: NEPOOL, Annual Capacity, Energy, Load and Transmission report.

CGS: Connecticut General Statutes.

Circuit: A system of conductors (three conductors or three bundles of conductors) through which an electrical current is intended to flow and which may be supported above ground by transmission structures or placed underground.

Circuit Breaker: A switch that automatically disconnects power to the circuit in the event of a fault condition. Located in substations, this switch performs the same function as a circuit breaker in a home.

CHP: Combined heat power

CL&P: The Connecticut Light & Power Company.

CMEEC: Connecticut Municipal Electric Energy Cooperative, Inc.

Conductor: A metallic wire, busbar, rod, tube or cable which serves as a path for electric flow.

Conduit: Pipes, usually PVC plastic, typically encased in concrete, for underground power cables.

Conversion: Change made to an existing transmission line for use at a higher voltage, sometimes requiring the installation of more insulators. (Lines are sometimes pre-built for future operation at the higher voltage.)

CSC: Connecticut Siting Council; the Council.

CONVEX: Connecticut Valley Exchange.

dBA: Decibel, on the A-weighted scale.

DC: Direct current; electricity that flows continuously in one direction. A battery produces DC power.

Demand: The total amount of electricity required at any given time by an electric supplier's customers.

Distribution: Line, system; the facilities that transport electrical energy from the transmission system to the customer.

DG: Distributed generation

D&M Plan: Development & Management Plan.

DPUC: (Connecticut) Department of Public Utility Control.

Duct: Pipe or tubular runway for underground power cables (see also Conduit).

Duct Bank: A group of ducts or conduit usually encased in concrete in a trench.

Electric Field: Result of voltages applied to electrical conductors and equipment.

Electric Transmission: The facilities (69-kV+) that transport electrical energy from generating plants to distribution substations.

EMF: Electric and magnetic fields.

Fault: A failure or interruption in an electrical circuit (short circuit).

FEMA: Federal Emergency Management Agency.

Fiber Optic Shield Wire (FOSW): See **Lightning Shield Wire**

G: Gauss; 1G = 1000 mG (milligauss); the unit of measure for magnetic fields.

GIS: Gas insulated substation using sulfur hexafluoride (SF₆).

Glacial till: These deposits are predominantly nonsorted, nonstratified sediment and are deposited directly by glaciers. These deposits consist of boulders, gravel, sand silt, and clay mixed in various proportions.

Gneiss: Light and dark, medium- to coarse-grained metamorphic rock characterized by compositional banding of light and dark minerals, typically composed of quartz, feldspar and various amount of dark minerals.

Granofels: Light to dark, medium- to coarse-grained, massively to poorly layered metamorphic rock composed primarily of quartz and feldspar; lacking the compositional banding of gneiss.

Ground Wire: Cable/wire used to connect wires and metallic structure parts to the earth. Sometimes used to describe the lightning shield wire.

H-frame Structure: A wood or steel structure constructed of two upright poles with a horizontal cross-arm and bracings.

Hz: Hertz, a measure of frequency; one cycle/second.

ISO: Independent System Operator.

ISO-NE: ISO New England, Inc.; referred to as New England's Independent System Operator.

kcmil: 1000 circular mils, approximately 0.0008 sq. in.

kV: kilovolt, equals 1000 volts.

kV/m: Electric field measurement (kilovolts/meter).

Lattice-type Structure: Transmission or substation structure constructed of lightweight steel members.

Lightning Shield Wire: Electric cable intended to prevent lightning from striking transmission circuit conductors. May contain glass fibers for communication use, “Fiber Optic Shield Wire”, or “FOSW”.

Line: A series of overhead transmission structures which support one or more circuits; or in the case of underground construction, a single electric circuit.

Load: Amount of power delivered as required at any point or points in the system. Load is created by the power demands of customers' equipment (residential, commercial, and industrial).

LOLE: Loss of Load Expectation; a measure of bulk power system reliability.

Magnetic Field: Produced by the flow of electric current; strength measured as magnetic flux density in units called gauss (G) or milligauss (mG) – 1/1000Gauss.

Magnetic Flux Density: Strength of magnetic field

mG: milligauss (see Magnetic Field) – 1/1000Gauss.

MOD: Motor-Operated Disconnect switch.

MVA: Megavolt Ampere. Measure of electrical capacity equal to the product of the voltage times the current. Electrical equipment capacities are sometimes stated in MVA.

MW: Megawatt. Megawatt equals 1 million watts, measure of the work electricity can do.

NDDB: Natural Diversity Data Base (CTDEP).

NEPOOL: New England Power Pool.

NERC: North American Electric Reliability Council.

NESC: National Electrical Safety Code.

NPCC: Northeast Power Coordinating Council.

NU: Northeast Utilities.

OH (Overhead): Electrical facilities installed above the surface of the earth.

Palustrine: Marshy, wetland areas described as palustrine include marches, swamps and bogs.

Peaking Facility: A generating station that runs when demand on the grid exceeds base load generation capacity in the region.

Phases: Transmission (and some distribution) AC circuits are comprised of three phases that have a voltage differential between them.

PUESA: Public Utility Environmental Standards Act.

Reinforcement: Any of a number of approaches to improve the capacity of the transmission system, including rebuild, reconductor, conversion and bundling methods.

Rebuild: Replacement of an existing overhead transmission line with new structures and conductors generally along the same route as the replaced line.

Reconductor: Replacement of existing conductors with new conductors, but with little if any replacement or modification of existing structures.

Right of way: ROW; corridor.

Riprap: A permanent erosion-resistant ground cover of large, loose, angular stone with filter fabric or granular underlining used to protect soil from the erosion fences of concentrated runoff.

RTEP: Regional Transmission Expansion Plan prepared by ISO-NE.

SCADA: System Control and Data Acquisition system – A system installed at the substation which allows control and monitoring from a remote location.

Schist: Light, silvery to dark, coarse- to very coarse-grained, strongly to very strongly layered metamorphic rock whose layering is typically defined by parallel alignment of micas. Primarily composed of mica, quartz and feldspar; occasionally spotted with conspicuous garnets.

SF₆: Sulfur hexafluoride, an insulating gas used in GIS substations and circuit breakers.

Shield Wire: See Lightning Shield Wire.

SHPO: State Historic Preservation Office (State of Connecticut Commission on Culture and Tourism, Historic Preservation and Museum Division).

Statutory Facilities: Environmental, ecological, scenic, historic, recreational or other resources identified by the Connecticut Siting Council in its *Electric Substation Facility Application Guidelines, section VII, items H and K (CGS Section 16-50l (a) (1))*.

Substation: A fenced-in yard containing switches, transformers, line terminal structures, and other equipment enclosures and structures. Adjustments of voltage, monitoring of circuits and other service functions take place in this installation.

Switching Station: A fenced-in yard containing switches, line terminal structures and other equipment, enclosures and structures. Switching of circuits and other service functions take place in this installation.

Steel Lattice Tower: See Lattice-Type Structure.

Steel Monopole Structure: Transmission structure consisting of a single tubular steel column with horizontal arms to support insulators and conductors.

Step-down Transformer: See Transformer.

Step-up Transformer: See Transformer.

Switchgear: General term covering electrical switching and interrupting devices. Device used to close or open, or both, one or more electric circuits.

Terminal Points: The substation or switching station at which a transmission line terminates.

Terminal Structure: Structure typically within a substation that ends a section of transmission line.

Terminator: A flared pot-shaped insulated fitting used to connect underground cables to overhead lines.

Transformer: A device used to transform voltage levels to facilitate the efficient transfer of power from the generating plant to the customer. A step-up transformer increases the voltage while a step-down transformer decreases it.

Transmission Line: Any line operating at 69,000 or more volts.

Upgrade: See Reinforcement.

USGS: United States Geological Survey (U.S. Department of the Interior).

V/m: volts per meter; kilovolt per meter; $1000 \text{ V/m} = 1\text{-kVm}$.

Voltage: A measure of the push or force which transmits electricity.

Voltage Collapse: A condition where voltage drops to unacceptable levels.

Watercourse: Rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water, natural or artificial, public or private.

Wetland: Land, including submerged land, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial or flood plain by the U.S. Department of Agriculture, Natural Resources Conservation Service. Connecticut jurisdictional wetlands are based solely on soil type; federal jurisdictional wetlands are classified based on a combination of soil type, wetland plants, and hydrologic regime.

Wire: See Conductor