Connecticut
Light & Power

The Northeast Utilities System

CONNECTICUT SITING COUNCIL APPLICATION

Connecticut General Statutes Section 16-50*l*(a)(1)

For a Certificate of Environmental Compatibility and Public Need

OXFORD SUBSTATION

Oxford, New Haven County
Connecticut

December 2006

Submitted to:
Connecticut Siting Council

Submitted by:
The Connecticut Light and Power Company
107 Selden Street
Berlin, CT 06037

Northeast Utilities System

107 Selden Street, Berlin, CT 06037

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

December 15, 2006

VIA HAND-DELIVERY
Mr. Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Dear Mr. Caruso:

Pursuant to C.G.S. § 16-50*l*(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 16-acre site located off of Christian Street in Oxford, Connecticut. The site is centrally located to the Oxford load, and the substation can be easily connected here to an existing 115-kV transmission line located on the eastern side of the property. The site is located in a proposed industrial park and is well screened with forested wetlands and uplands.

The proposed substation would increase the capacity to transform electricity from 115 kV to 13.8 kV in response to the increasing peak-load demands for electricity in the Town of Oxford and surrounding areas, and it would enable improved electric distribution reliability.

The Application package consists of a report along with maps, drawings, and various exhibits. In accordance with C.G.S. § 16-50*l*(b), CL&P is providing you with the following 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;
- a copy of the public notices published in various newspapers in the general vicinity of the proposed substation;
- an original affidavit regarding publication of legal notice of the Company's intent to file the Application;
- 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; and
- an original affidavit regarding notice to abutters and nearby owners of the project.

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 Oxford (Section VII (p) of the *Electric Substation Facility Application Guide*, adopted September 19, 2000);
- Bulk Filing #2, which consists of four sets of full-size Site Plan Drawings (the Application includes reduced plans); and
- Two checks, one in the amount of $11,100.00 representing the Application Filling 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 me if any additional material is necessary for the Council's review of this application package.

Respectfully submitted,

NORTHEAST UTILITIES SERVICE COMPANY

By _____
Robert E. Carberry

The above material was received by the Council.

By: _____
Date:_____

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CONNECTICUT SITING COUNCIL APPLICATION GUIDELINES CHECKLIST

ELECTRIC SUBSTATION FACILITY

September 19, 2000

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:

Refer to Municipal Consultation Filing in Bulk Filing #1.

Pre-Application Process (General Statutes § 16-50l (e))

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 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 II, Appendix K, and Bulk Filing #1, Appendix A & B.

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. **Refer to Volumes I and II of this CSC Filing.**

B. All filings from the applicant, parties, or intervenors must consist of an original and 20 copies, labeled with the docket number, properly collated and paginated, and bound. **Refer to Volumes I and II 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 I and II 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 intervenors to the proceeding, unless service has been waived. **Refer to Volumes I and II 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 I and II 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. **Refer to Volumes I and II of this CSC Filing.**

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

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

Estimated Construction Cost	Fee
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 § 16-50l (b))

Each application shall be accompanied by proof of service of such application on: **See Volume I, 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 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; and the office of policy and management.

V. Public Notice (General Statutes § 16-50l (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 I, Section Q.**

VI. Notice to Abutting Landowners (General Statutes § 16-50l (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 I, 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 I, Section Q.

VII. Contents of Application (General Statutes § 16-50l (a) (1))

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

A. A brief description and the location of the proposed facility, including an artist's rendering and/or narrative describing its appearance.

See Volume I, Section A.

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

See Volume I, Section B.

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

See Volume I, Section C.

D. 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 I, Section D.

E. 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 I, Section E.

F. A description of the proposed facility including:

See Volume I, Section F.

1. Itemized estimated costs;
2. Comparative costs of alternatives considered;
3. Facility service life;
4. Bus and specifications;
5. Overhead take-off design, appearance, and heights, if any;
6. Length of interconnections to transmission and distribution;
7. Initial and design voltages and capacities;
8. Rights-of-way and accessway acquisition;
9. Transmission connections and distribution feeders; and
10. Service area.

G. 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

See Volume I, Section G.

systems that would serve the public need for adequate, reliable, and economic service, including:

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.

H. A proposed site map at a scale no smaller than one inch = 40 feet and aerial photos of suitable scale showing the site, access, and abutting properties including proximity of the following:

See Volume I, Section I, and Volume II, Appendix B and Bulk Filing #2.

1. Settled areas;
2. Schools and daycare centers;
3. Hospitals;
4. Group homes;
5. Forests and parks
6. Recreational areas;
7. Seismic areas;
8. Scenic areas;
9. Historic areas;
10. Areas of geologic or archaeological interest;
11. Areas regulated under the Inland Wetlands and Watercourses Act;
12. Areas regulated under the Tidal Wetlands Act and Coastal Zone Management Act;
13. Public water supplies;
14. Hunting or wildlife management areas; and
15. Existing transmission lines within one mile of the site.

I. 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 I, Section H.

J. Safety and reliability information, including:

1. Provisions for emergency operations and shutdowns; and
2. Fire suppression technology. **See Volume I, Section J.**

K. 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 I, 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.

L. A statement explaining mitigation measures for the proposed facility including: **See Volume I, 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.

M. 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 I, 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.

N. A schedule of the proposed program for right-of-way or property acquisition, construction, rehabilitation, testing, and operation.
See Volume I, Section N.

O. Identification of each federal, state, regional, district, and municipal agency from which approvals have been obtained or will be sought, copies of approvals received, and a schedule for obtaining approvals not yet received.
See Volume I, Section O.

P. Bulk filing of municipal zoning, planning, planning and zoning, conservation, and inland wetland regulations and by-laws.
See Volume I, Section P.

Q. Such information any department or agency of the state exercising environmental controls may, by regulation, require.
See Volumes I and II.

R. Such information the applicant may consider relevant.
See Volume I, Section R.

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 §§ 16-50l-4 through 16-50l-5)

B. The Council and any party or intervenor 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 in the county of the proposed site, usually in the site municipality, with one session held after 6:30 p.m. for the convenience of the public. The Council's record must remain open for 30 days after the close of the hearing. (General Statutes § 16-50m)

D. The Council must render a decision within 180 days of receipt of the application, or within 12 months of receipt of the application if the application was incorporated with an application for an electric transmission line, extendible by 180 days upon consent of applicant. (General Statutes § 16-50p).

A.0 SUMMARY DESCRIPTION AND FACILITY LOCATION

The Connecticut Light and Power Company ("CL&P" or the "Company") is proposing to construct the Oxford Substation Project (the "Project"), which includes:

- Construction of a new electric power 115-kV to 13.8-kV substation (the "Substation");
- Construction of an access drive from a new Town road (“Commerce Park Drive”) associated with the Oxford Commerce Park; and
- Construction of three new transmission line structures to connect the new substation to the existing 115-kV transmission line.

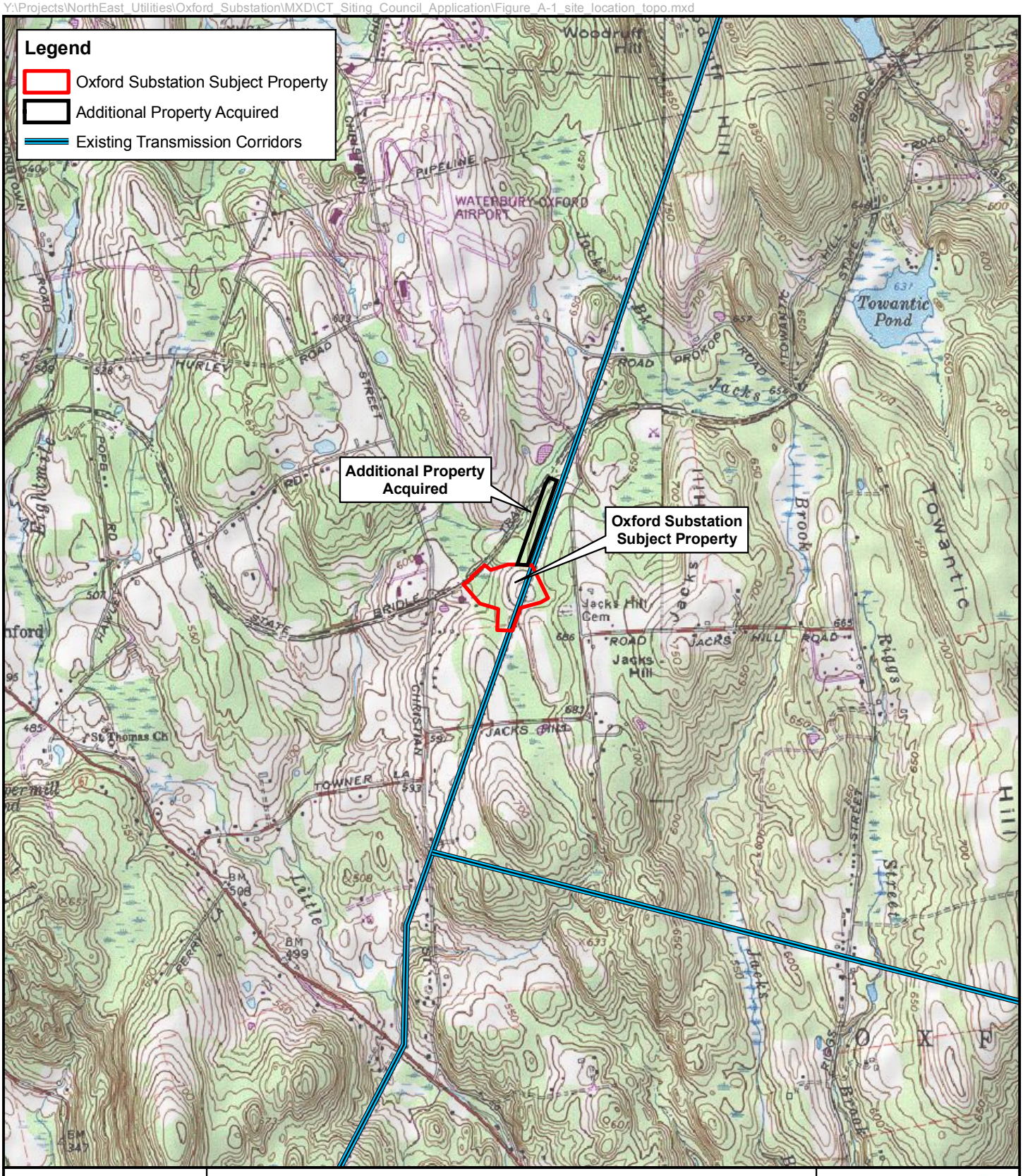
Facility Need

The Project will add capacity in response to the increasing demand for electricity in Oxford and its surrounding area and by so doing, improve electric distribution system reliability in the Town of Oxford. Please refer to Section G for additional information on the need for the proposed Project.

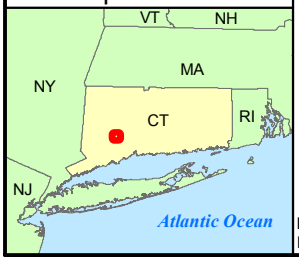
Site Selection

The Project will be constructed at property located to the north of Jacks Hill Road, east of Christian Street, and west of North Larkey Road (Oxford Assessor's Map 25, Block 25, Parcel 1BB3), in Oxford, Connecticut (the "Subject Property" or “Property”), (Refer to Figure A-1, Site Location Map). CL&P’s purchase of the Property was supported by the Town and approved by the Council (Docket No. 304) under Conn. Gen. Stat. § 16-50z(a) and Regulations of Connecticut State Agencies § 16-50z-1-4.

Y:\Projects\NorthEast_Utilities\Oxford_Substation\MXD\CT_Siting_Council_Application\Figure_A-1_site_location_topo.mxd



Map Location



Site Location Map

Oxford 115- to 13.8-kV Substation

0 500 1,000 2,000 3,000 4,000 5,000 6,000 Feet

0 100 200 400 600 800 1,000 1,200 1,400 1,600 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: USGS Topographic Quadrangles: Southbury and Naugatuck, CT.

Scale: 1:24,000
(1 inch = 2,000 ft)

Northeast Utilities System

ENSR | AECOM

Figure A-1

Date: November 2006

Project #: 05022-012

The Project will also involve activities on an adjacent 4.44 acre transmission line easement located to the immediate north of the Subject Property and west of the existing right-of-way (Oxford Assessor's Map 25, Block 25, Lots 1BB1 and 1BB2).

The state-owned Larkin Bridle Trail is located to the northwest of the Subject Property, and the Oxford Science Park is to the south. The Waterbury-Oxford Airport runway is approximately 1,500 feet to the north. Jacks Hill Road is located on the south side, Christian Street to the west side, and North Larkey Road to the east side of the Subject Property (Refer to Figure A-2, Site Location Map – Aerial View).

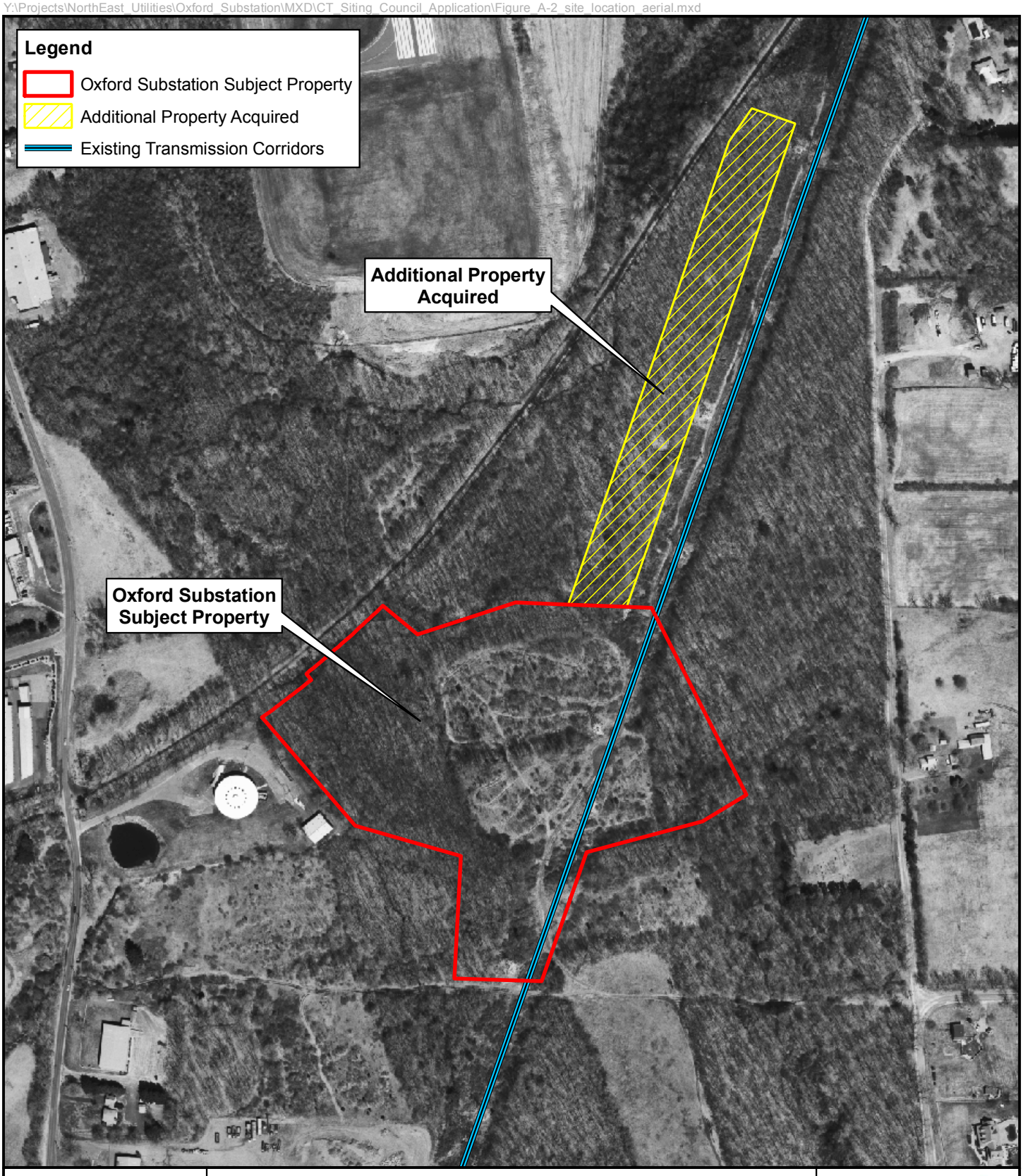
The Property is well-suited for the proposed use because it provides access to CL&P's existing transmission line which traverses the site, and is located in an industrially zoned area lacking significant residential development or concentrated surrounding features (See Volume II, Appendix A, Site Photographs). Please refer to Section H for detailed information on the site selection process, including alternative sites evaluated.

Environmental Effects

CL&P has designed the Substation in a manner that minimizes potential environmental and visual effects and has incorporated measures to ensure the protection of existing resources during construction and operation of the Substation facilities. As detailed in the remainder of this submission, the Oxford Substation Project:

- will address a need for additional distribution system capacity and reliability in the Town of Oxford by establishing a new, strategically positioned bulk power source;
- will comply with regional planning and reliability standards and Northeast Utilities' transmission reliability standards;

Y:\Projects\NorthEast_Utilities\Oxford_Substation\MXD\CT_Siting_Council_Application\Figure_A-2_site_location_aerial.mxd



Map Location

Site Location Map - Aerial View

Oxford 115- to 13.8-kV Substation

0 100 200 400 600 800 1,000 1,200 Feet

0 30 60 120 180 240 300 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: SBC aerials.

Scale: 1:4,200
(1 inch = 350 ft)

Northeast Utilities System

ENSR | AECOM

Figure A-2

Date: November 2006

Project #: 05022-012

- will occupy 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 pose a safety concern or 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, including the incorporation of a landscape plan into the Project design;
- will be consistent with future development plans by the Town, including those associated with the Oxford Commerce Park;
- will have no adverse effects on residential, commercial or industrial properties in the vicinity of the Subject Property;
- will have no adverse effect on historic, cultural and/or archaeological resources;

- will be designed to minimize earthwork and soil disturbance during construction, including the development of appropriate measures to stabilize and restore affected areas;
- is not located within a floodplain;
- will comply with applicable state lighting and noise requirements; and
- will result in no significant permanent adverse effects on the environment.

Please refer to Sections I and K for additional information on existing conditions at the Subject Property and the anticipated environmental effects of the proposed Project.

B.0 Purpose of the Application

The purpose of CL&P's Application to the Connecticut Siting Council (the "Council") is to request a Certificate of Environmental Compatibility and Public Need ("Certificate") for the siting and construction of the Project, which consists of the following activities in the Town of Oxford:

- Construction of a new electric power 115-kV to 13.8-kV substation (the "Substation");
- Construction of an access drive from a new Town road (“Commerce Park Drive”) associated with the Oxford Commerce Park; and
- Construction of three new transmission line structures to connect the new substation to the existing 115-kV transmission line.

The purpose of the Project is to add capacity in response to the increasing demand for electricity in Oxford and its surrounding area and by so doing, improving electric distribution system reliability in the Town of Oxford.

C.0 Statutory Authority for Application

CL&P's Application is filed pursuant to the Public Utility Environmental Standards Act, Conn. Gen. Stat. § 16-50g et seq., and the Regulations of Conn. State Agencies. § 16-50j-1 et seq.

This filing includes information concerning the Applicant (CL&P), existing conditions at the Subject 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.0 LEGAL NAME AND ADDRESS OF APPLICANT

The Connecticut Light and Power Company (a specially chartered Connecticut corporation)

107 Selden Street

Berlin, Connecticut 06037

Mailing Address:

CL&P

P.O. Box 270

Hartford, Connecticut 06141-0270

Telephone: (860) 665-5000

Internet Address:

Northeast Utilities Transmission Website

www.transmission-nu.com

E.0 APPLICANT CONTACTS

Correspondence and other communications with regard to the Oxford Substation should be addressed to, and notices, orders and other documents should be served upon the following:

Mr. Robert E. Carberry, P.E.

Manager, Transmission Siting & Permitting

Northeast Utilities Service Company

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Hartford, CT 06141-0270

Telephone: (860) 665-6774

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Mr. Jeffrey Martin

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Kathleen A. Shea, Esq.

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Telephone: (203) 573-1200

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rgolden@carmodylaw.com

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F.0 DESCRIPTION OF FACILITY

The Property on which the Oxford Substation would be located is approximately 15.77 acres in area and is owned by CL&P (Refer to Figures A-1 and A-2). In 2005, CL&P acquired the Subject Property for the development of the Project. CL&P's purchase of the Property was supported by the Town and approved by the Council (Docket No. 304) under Conn. Gen. Stat. § 16-50z(a) and Regulations of Connecticut State Agencies § 16-50z-1-4. The Substation would occupy approximately 1.1-acres centrally located on the 15.77-acre parcel. The Subject Property is accessed from a new road, Commerce Park Drive, associated with the Oxford Commerce Park that is currently being constructed. CL&P proposes to construct a gravel access drive extending approximately 600 linear feet from Commerce Park Drive into the Substation. The access drive would be approximately 15 feet wide to accommodate CL&P maintenance vehicles. Crossing of an inland wetland and an associated intermittent watercourse would be required to provide access to the Substation. The Subject Property also includes an adjacent 4.44 acre transmission line easement located to the immediate north of the 15.77 acre parcel and west of the existing right-of-way. This easement was acquired by CL&P for expansion of the existing transmission line right-of-way.

The Substation would be supplied from the existing 115-kV 1575 transmission circuit that traverses the Subject Property (Refer to Volume II, Appendix B, Project Plans). The new Substation would be constructed alongside CL&P's existing 1575, 1585 and 1990 transmission lines. The 1575 transmission circuit would be "looped through" the Substation and a new 115-kV circuit breaker would be installed to split the existing transmission circuit into two circuits. A "loop through" design facilitates two transmission circuit connections to a substation, as opposed to one transmission circuit connection for a "tapped" design. Three new transmission line structures would be installed to make the connections between the existing 115-kV

transmission circuit and the Substation. A single 74-foot laminated wood pole would be installed to the north of the Substation within CL&P's existing transmission line corridor; a 55-foot wooden H-Frame structure would be installed north of the Substation within CL&P's easement; and a single 74-foot laminated wood pole would be installed south of the Substation to serve as an intermediate structure for the tie-into the existing transmission lines. Each of the 115-kV circuits would be capable of supplying the entire substation load.

The Substation would be an approximately 226- by 229-foot area with a trap rock surface and secured by a 7-foot high chain link fence topped with one foot of barbed wire (Refer to Volume II, Appendix B, Project Plans). The 115-kV line interconnection with the Substation would be made using two, up to 55-foot high, line terminal structures. All transmission equipment within the Substation would be name-plated for 2000 Amperes continuous current.

The Substation would consist of two 47 Megavolt Ampere ("MVA") power transformers, two metal-clad distribution switchgear enclosures, five 115-kV circuit switchers, one 115-kV circuit breaker, nine 115-kV disconnect switches, a relay and control enclosure (approximately 48 feet by 14 feet) and a battery enclosure (approximately 24 feet by 14 feet) all located within the fenced area of the Substation. The relay and control enclosure would contain protective relaying and control equipment associated with the transmission portion of the Substation. Also within the switchgear and control enclosures, equipment for full Supervisory Control and Data Acquisition ("SCADA") system functions and digital metering would be installed for control and monitoring of the Substation from a remote location. Distribution getaways would exit the Substation underground in conduits. The getaways will pass under an engineered culverted crossing designed for the entrance road, protecting them from any vehicle-related impacts. The underground distribution getaways would surface at the intersection of the access drive with Commerce Park Drive. The distribution lines would then be installed overhead via new wood poles along Commerce Park Drive.

The Substation components would include two transformer disconnect switches and two circuit switchers that would be installed to supply two 47-MVA power transformers, which would transform the voltage from 115 kV to 13.8 kV, the local distribution voltage. Switchgear equipment would be installed in two steel enclosures, each 22 feet long by 14 feet wide and 14 feet in height. The switchgear would contain a total of six feeder positions supplying local load of which three feeders would be activated initially. Feeder cables would exit the Substation underground in duct banks. The transformers would be sized so that they would provide back-up for each other. Electric load would automatically transfer to the transformer in service when one transformer is switched out of service for any reason. The Substation would also contain a circuit switcher and a disconnect switch to facilitate the installation of a mobile transformer in case one of the permanently installed transformers needs to be removed from service for a prolonged time.

F.1 Estimated Project Costs

The following table presents estimated costs for the siting, design, and construction of the Substation and supporting infrastructure.

TABLE F-1. ESTIMATED PROJECT COSTS

	Transmission ("T") Cost	Distribution ("D") Cost	Combined T&D Costs
Project Phase			
Material & Equipment	$2,108,473	$3,751,000	$5,859,473
Siting & Engineering	$611,856	$455,000	$1,066,856
Construction	$1,976,314	$1,168,000	3,144,314
Total	$4,696,643	$5,374,000	$10,070,643

F.2 Facility Service Life

The service life of the Substation equipment would be in excess of 40 years.

G.0 NEED FOR FACILITY

Responding to increasing peak-load demands, the purpose of the Project is to improve electric distribution system adequacy and reliability in the Town of Oxford and its surrounding areas by increasing the capacity to deliver electric power from the 115-kV transmission system to the local 13.8-kV distribution system.

Currently, electric load in the Town of Oxford is served by three primary 115- to 13.8-kV substations: Beacon Falls Substation in Beacon Falls, Bates Rock Substation in Southbury, and South Naugatuck Substation in Naugatuck (See Figure G-1, Southwest Connecticut Transmission Circuit Map). In addition to sharing the load needs of Oxford, these three 115- to 13.8-kV substations also serve the load needs of the towns in which they are located. Reliance on neighboring substations is considered acceptable as long as cumulative load growth does not exceed available capacity and distribution feeders are not so long as to degrade reliability.

From 2004 to 2006, Oxford's peak demand grew by more than 5 MVA, reaching 24.3 MVA in the summer of 2006, an increase of nearly 26%. Demand is forecasted to increase at an even faster rate in the years to come as the Town experiences additional development. Based on planned development in Oxford, peak demand may reach nearly 60 MVA by the year 2012 (See Tables G-1 and G-2), representing more than a threefold increase in just 8 years.

Capacity must be added to meet this demand, and it must be added in a way that provides an adequate and reliable source of power to the Town of Oxford for many years to come. The ISO-NE approved the plan for implementation of the Oxford (26N) Substation on January 26, 2006. Additionally, a substation for the Oxford area has been in the Council's Forecast of Loads and Resources since 2003.

NEW YORK

NORTH

PROPOSED OXFORD SUBSTATION

LONG ISLAND SOUND

BRIDGEWATER
NEW FAIRFIELD
WEST BROOKFIELD 14H
W.BROOKFIELD JCT.
BROOKFIELD
STONY HILL 48C
BROOKFIELD JCT
DANBURY
MIDDLE RIVER 28M
TRIANGLE 11A
PLUMTREE JCT.
PLUMTREE 30G
BETHEL
RIDGEFIELD
RIDGEFIELD 22N
RIDGEFIELD JCT.
PEACEABLE 12N
REDDING
WILTON
NEW CANAAN
WESTON
WESTON 21M
NORWALK JCT.
STAMFORD
CEDAR_HEIGHTS 4R
NORWALK 9S
NORWALK
GREENWICH
GLENBROOK 1K
WATERSIDE 22M
35K(R.R.)
COS_COB 11R
TOMAC 12H
SOUTH END 1G
CEDAR HEIGHTS JCT.
ROWAYTON JCT
FLAX_HILL 24A
DARIEN 13S
DARIEN
JCT.TERM. ELY AVE
TO NORTHPORT (L.I.L.CO.)
NORWALK HARBOR 6J
SOUTHBURY
BATES ROCK 21K
SHEPAUG 13A
NEWTOWN
NEWTOWN 12M
SANDY HOOK 37F
STEVENSON 14A
MONROE
SHELTON
EASTON
TRUMBULL
TRAP FALLS 16P
DERBY JCT.
INDIAN WELL 47P
DERBY
SEYMOUR
ANSONIA 6R (U.I.CO.)
ANSONIA
MIDDLEBURY
BALDWIN JCT.
BALDWIN 13F
CHRISTIAN JCT.
BEACON FALLS JCT.
BEACON FALLS 11N
OXFORD
NAUGATUCK
SOUTH NAUGATUCK 21L
PROSPECT
CHESHIRE
LUCCHINI JCT.
SCHWAB JCT.
HANOVER 12F
COLONY 50E (NEW-'94)
No. WALLINGFORD 36M
OUT OF SERVICE Nov '94
BLACK POND JCT.
EAST MERIDEN 21P
MIDDLEFIELD
BESECK JCT.
NORTH WALLINGFORD JCT.
WALLINGFORD
WALLINGFORD 6G
WALLINGFORD JCT.
WALLINGFORD 13M
WALREC/42R
NEW HAVEN JCT.
N.HAVEN 10A (U.I.CO.)
EAST WALLINGFORD JCT.
COOK HILL JCT.
HANSBROOK JCT.
DOOLEY 30K
MIDDLETOWN
MIDDLETOWN JCT.
CHESTNUT JCT.
OXBOW JCT.
DURHAM
BETHANY
HAMDEN
GLEN LAKE JCT.
MIX 32K (U.I.CO.)
PEASE ROAD JCT.
JUNE 1P (U.I.CO.)
NEW HAVEN
WOODBRIDGE
NORTH HAVEN
NORTH BRANFORD
EAST HAVEN
TOTOKET JCT.
BRANFORD
BRANFORD 11J
E.SHORE 9G (U.I.CO.)
GUILFORD
MADISON
WEST HAVEN
MILFORD
TRUMBULL JCT.
W. DEVON JCT.
E. DEVON JCT.
DEVON 7R
SWITCHING STA 16P
R.R. OKTS 26M
OLD TOWN 3N(U.I.CO.)
HAWTHORNE 10H(U.I.CO.)
BRIDGEPORT
BRIDGEPORT HARBOR
FAIRFIELD
ASH CREEK 7C(U.I.CO.)
PEQUONNOCK 8J
STRATFORD
WESTPORT
COMPO 23K
SASCO CREEK 51R(R.R.)

4 0 2 4 8

1 INCH = 4 MILES

Figure G-1

SOUTHWEST CONNECTICUT

TRANSMISSION CIRCUIT MAP

LEGEND

TRANSMISSION LINES

- 345 KV LINE
- 115 KV LINE
- 69 KV LINE
- 115 KV U.G.

SUBSTATIONS

Substation Capacity

Currently, very little margin exists to meet area growth as substations in neighboring towns near their rated capacity. Beacon Falls, Bates Rock and South Naugatuck have a combined rated capacity of 184 MVA. These three substations experienced a combined peak load of 180.9 MVA in 2006 (See Table G-3). The expected load growth in Oxford alone, not to mention load growth in the surrounding towns, is forecasted to consume this available margin by 2008.

Table G-1: Forecasted Increase in Demand by 2008

DEVELOPMENTS	INCREASE IN DEMAND (MVA)
Residential Developments	5.0
Phase I, Oxford Commerce Park	1.0
Miscellaneous Industrial Developments	5.0
Miscellaneous Business Developments	1.4
Retail Developments	1.0
New High School	1.0
Oxford Airport Expansion	0.5
Total	**14.9**

Table G-2: Forecasted Increase in Demand after 2008 to year 2012

DEVELOPMENTS	INCREASE IN DEMAND (MVA)
Residential Developments	1.4
Phase II, Oxford Commerce Park	1.3
Miscellaneous Industrial Developments	9.1
Miscellaneous Business Developments	6.0
Retail Developments	1.0
New Middle School	1.0
New Magnet School	1.0
Total	**20.8**

Total Forecasted Demand Growth (2006-2012)	**35.7 MVA**

Table G-3: Main Substations Serving Oxford

Substation	Actual Peak Loads (MVA)				
	2002	**2003**	**2004**	**2005**	**2006**
Beacon Falls	56.7	52.5	54.4	67.2	69.3
Bates Rock	59.8	67.4	64.5	65.8	69.0
S. Naugatuck	37.7	34.0	34.7	38.5	42.0

New Oxford Substation

To resolve this capacity deficiency, CL&P proposes establishing a new distribution power source for the Town of Oxford, a bulk power substation. This new substation would be similar in size to the Beacon Falls and Bates Rock substations, providing between 70 and 75 MVA of substation capacity to the system. This additional capacity will not only provide enough supply to meet the needs of Oxford for years to come, it will also improve the reliability of the Town's distribution system by eliminating reliance on neighboring substations.

G.1 System Alternatives

CL&P's evaluation of system alternatives included construction of new distribution feeders (i.e., new distribution lines from existing substation facilities to serve the Oxford area), adding transformer capacity at the following 115-kV bulk substations: Bates Rock, Beacon Falls, South Naugatuck, and Stevenson, and distributed generation and demand response. Establishing a new substation in Oxford, however, was found to be the best solution. This determination was based on the following:

- Capacity – a new substation in Oxford results in a net increase in the available capacity of each substation (i.e., Bates Rock, Beacon Falls, South Naugatuck) to serve the customers in its core service area;
- Reliability and Operability – a new substation in Oxford reduces exposure to system outages and provides greater ability to transfer load in the event of outages; and,
- Cost – the cost of a new substation in Oxford is less than the system upgrades (i.e., addition of transformer capacity and construction distribution infrastructure from other substations) that would be required to meet the growing customer load.

Expansion of Existing Substations

An alternative solution to address the capacity shortfall is to expand neighboring substations. The closest, Beacon Falls, already has two feeders serving a portion of the

load in Oxford. Since both of these feeders are relatively long and near their rated capacity, expanding this substation would require the installation of additional distribution feeders.

- Capacity - Placing a third 47-MVA power transformer at the Beacon Falls Substation, an emergency mobile position, and new switchgear for four or more new 13.8-kV feeders would add, at most, a total of 57 MVA of rated capacity to the system. Other existing substations (i.e., Bates Rock or South Naugatuck) would also need to be upgraded to match the 70-75 MVA capacity that will be gained by construction of a new substation in Oxford.

- Reliability and Operability – construction of new and relatively long distribution feeders from existing substations increases system exposure and, therefore, the potential for system outages. Furthermore, this alternative would not provide the desired system flexibility to transfer load to meet the needs of customers during system outages.

- Cost - Adding new capacity at either the Bates Rock or South Naugatuck substations would require the addition of new and relatively long distribution feeders from these sources into Oxford. These new feeders would need to traverse steep terrain, which would be costly to construct and difficult to maintain. The feeders would need to extend an average of more than 7 miles to reach the load center in Oxford, and would cost roughly $500,000 per mile. At least two such feeders would be needed from each expanded substation. Based on estimates for four feeders, each 7 miles in length, the feeder costs alone would exceed 14 million dollars. Also, the additional equipment required to add capacity at each substation would cost at least 3 million dollars. The total estimate for upgrading two substations under this alternative exceeds 20 million dollars.

Based on the foregoing, this system alternative was considered impractical and too costly in comparison to the proposed Project.

Distributed Generation and Demand Response

The addition of properly sized, properly located, available, and dispatchable distributed generation (interconnected to distribution feeders or customer-side), and/or demand response could mitigate the growing pressure on local electric distribution system capacity. Generally speaking, distributed generation or demand response might assist in reducing some load on the substations and feeders presently serving Oxford, however, the reasonable-cost benefits and the added capacity of the Project will likely far exceed the opportunities for these alternatives.

Distributed generation ("DG") proposals would need to address the following:

- A large number of small generators would be needed to match the capacity offered by the Project, very likely more than the existing local distribution system could reliably interconnect.
- The generators would need to be installed on customer premises or be interconnected to the CL&P primary distribution system rather than to the transmission system.
- The design of the local distribution system would need to be carefully reviewed to ensure that multiple power-supply sources are appropriately integrated with the distribution system.
- The locations of, operating practices for, and protective devices on distributed generators and on CL&P's distribution feeders would need to be reviewed: to protect customers, utility workers, and the distribution system from over-voltages, potential damage during line switching, and unexpected energization of downed lines; and to protect the generators from automatic switching and reclosing events on the distribution system.

As part of Public Act 05-01 incentives to support the development of DG, CL&P has contacted a number of customers in the areas served by the Beacon Falls, Bates Rock, South Naugatuck, and Oxford Substations to determine if they will consider installing DG or Combined Heat and Power ("CHP") projects. To date approximately 2.5 MW of generators at multiple customer locations are under consideration for the 2007-2009 timeframe. No project has been approved yet.

The Company develops and manages Demand Side Management Programs to its customers statewide and offers an array of Connecticut Energy Efficiency Fund ("CEEF") programs to its residential, commercial and industrial customers statewide.

Since 2005, CL&P estimates that through these programs, customers in the towns served by the Beacon Falls, Bates Rock, South Naugatuck, and Oxford Substations have achieved peak-demand savings of approximately 11 MW and will save approximately 475,923,852 kWh of energy over the life of the installed measures.

CL&P's longstanding Demand Side Management Programs have only slightly reduced the summer peak demands in Oxford, and CL&P forecasts that any significant future reductions, on the scale of the proposed Substation Project, would not be cost effective.

There may be additional opportunities for small-scale DG and demand response to contribute to the overall solution, but it is likely they will be quite limited in comparison to the proposed Project.

Other System Alternatives

1) CL&P evaluated the addition of a new transformer at only one existing substation. This alternative is not considered feasible because it would not provide the needed capacity, and would still require additional distribution feeders to supply the necessary load to Oxford.

This is also a less reliable alternative because it would not spread the load among multiple substations. The costs associated with the new transformer and additional feeders (4 each), are estimated at roughly 17 million dollars, well in excess of the costs estimated for construction of the proposed Project.

2) CL&P also evaluated installation of additional feeders to more distant substations. Theoretically, an express feeder serving Oxford could be added beginning at the Bunker Hill Substation in Waterbury, which is one town removed from Oxford. One 13.8-kV feeder from the Bunker Hill Substation currently makes its way from Waterbury to the northern end of Oxford, but it can only be counted on to supply emergency power to a small northern part of the Town during non-peak load periods. Adding a feeder to this substation would be even more costly, based on the longer distances, and even less reliable.

Likewise, an 8.32-kV feeder originating from the Stevenson Substation, across the Housatonic River in Monroe, could theoretically supply Oxford, but this source is also only available to supply emergency power to a small area in the southwest part of the Town during non-peak load periods. The availability of this substation to routinely serve Oxford load is constrained by its devotion to backup the Sandy Hook Substation in Newtown.

Conclusion

Based on the alternatives analysis provided above, construction of a new bulk substation in Oxford is the most reliable and cost-effective solution to serve the growing load in Oxford. The proposed Project will include new distribution feeders at reasonable lengths and dedicated to serving the Oxford load, and will enhance distribution system reliability in Oxford. Furthermore, most of the Oxford load that is currently consuming substation capacity in adjacent towns will be transferred to the new Substation, freeing up capacity at those Substations to serve load growth in their host towns.

H.0 ALTERNATIVES EVALUATED

CL&P has investigated numerous solutions to address the load demands of the Town of Oxford, including an assessment of several alternative sites for the construction of a new electric power substation. Figure H-1 depicts the approximate limits of the search/study area. The search/study area is defined by proximity to transmission lines and central location to the customer load.

H.1 Analysis of Alternative Site Locations

CL&P received approval from the Council to acquire the Subject Property and adjacent easement area. See Council Docket No. 304, dated April 21, 2005 (Refer to Volume II, Appendix C). In the Docket, CL&P filed a *Site Evaluation and Selection Report* documenting the evaluation of alternative sites and reasons for selecting the preferred site. The analysis of alternative locations focused on the search/study area, where the need for additional power is the greatest. The analysis also considered the Town's planned land use north of Jacks Hill Road for industrial/business purposes. Land use south of Jacks Hill Road will be utilized more for residential, commercial, and Town purposes.

The analysis evaluated environmental, land-use/planning, physiographic issues, and engineering constraints associated with the site. The following specific elements were key to this analysis:

- Proximity to an existing 115-kV transmission circuit;
- Central location with respect to local distribution (customer) load area;
- Sufficient space for needed facilities;
- Proximity to residential neighbors and other surrounding features;
- Natural resource (i.e. inland wetlands) and cultural resource constraints;

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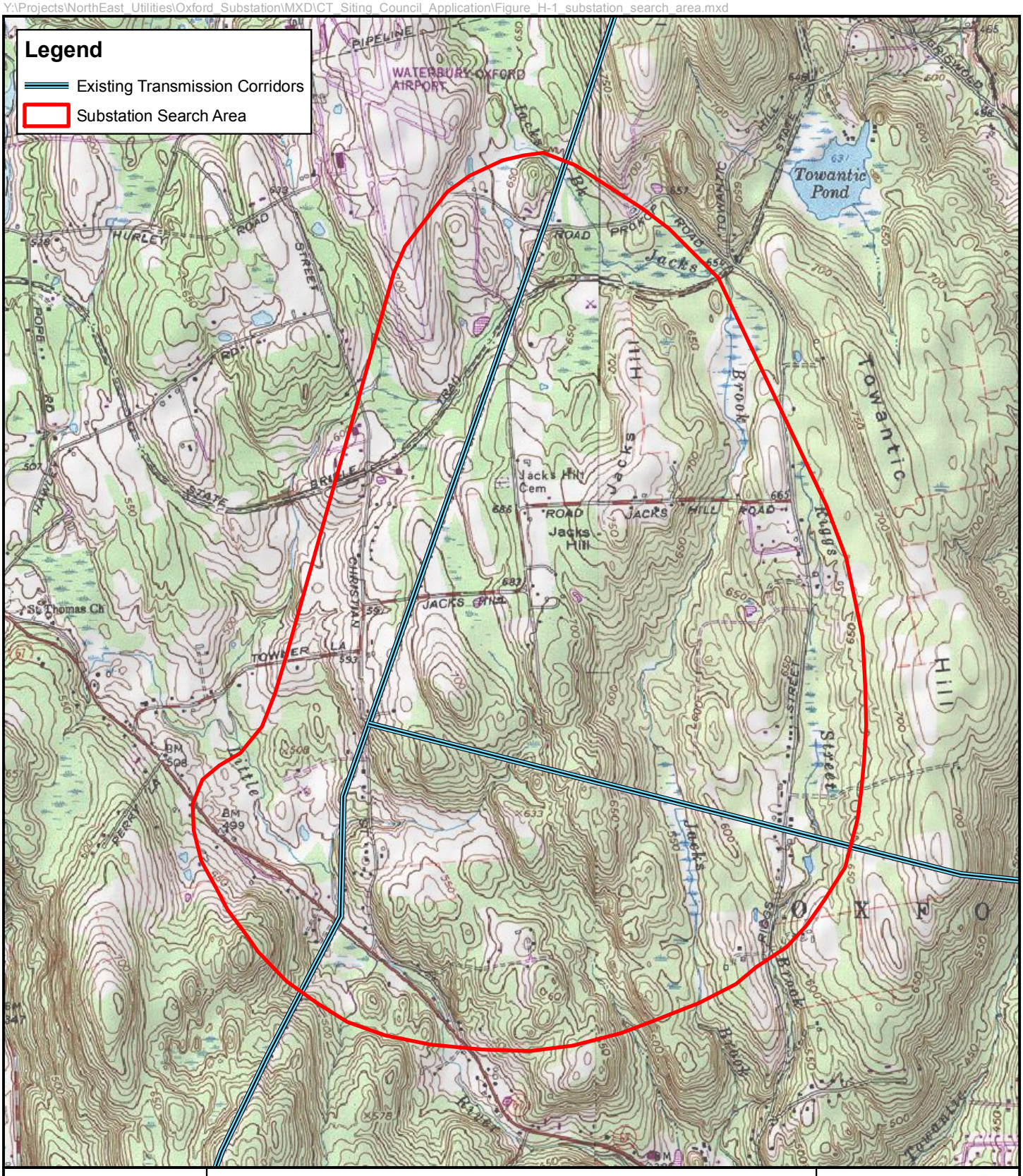
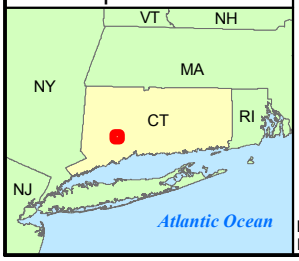


Map Location



N

Substation Search Area

Oxford 115- to 13.8-kV Substation

0 500 1,000 2,000 3,000 4,000 5,000 6,000 Feet

0 100 200 400 600 800 1,000 1,200 1,400 1,600 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: USGS Topographic Quadrangles: Southbury and Naugatuck, CT.

Scale: 1:24,000
(1 inch = 2,000 ft)

Northeast Utilities System

ENSR | AECOM

Figure H-1

Date: November 2006

Project #: 05022-012

- Existing and future land use;
- Access from a public road;
- Earthwork requirements based on existing topography; and
- Availability of property, if not owned by CL&P, for purchase, or at a minimum, negotiable for purchase.

The alternative site locations (as shown in Figure H-2) are described below. A review of the siting criteria for each alternative site is provided in Table H-1.

H.1.1 Preferred Site – Jacks Hill Road and Christian Street - Oxford Commerce Park

Following a detailed review of four sites, this parcel was selected as the most viable option for the new Substation. The parcel is located in the industrially-zoned area north of Jacks Hill Road, east of Christian Street, and west of North Larkey Road. (Refer to Figure H-1) Application for approval to purchase the land was submitted to the Council and approved in the summer of 2005.[1] The Town of Oxford also supported the land purchase and use of the parcel for development of a substation.[2] Purchase of the land was completed on October 30, 2005. (Refer to Volume II, Appendix C for documents).

[1] The Council ruled in Docket 304 regarding site 1 (the Preferred Site) that after having "given due consideration to the effects of such an acquisition, including the probable hardship for the owner of the property or owners of adjacent properties; development and potential development on and nearby the property to be acquired; environmental impact; public need; convenience of the owner, and the location of the property proposed to be acquired for the transmission of electric power within the state as required under Section 16-50-z1-4 of the Regulations of Connecticut State Agencies, and therefore [the Council] grants approval to CL&P to acquire the proposed 15.77-acre property between Jacks Hill Road and Christian Road in Oxford, Connecticut.'"

[2] On April 21, 2005, the First Selectman of Oxford provided comments to the Council regarding the proposed land acquisition. In these comments and at the public hearing the First Selectman stated his support of this land acquisition, and that the acquisition is consistent with proper planning for the Town of Oxford. (Town of Oxford letter, dated 4/19/05; Tr., pp.5-8)

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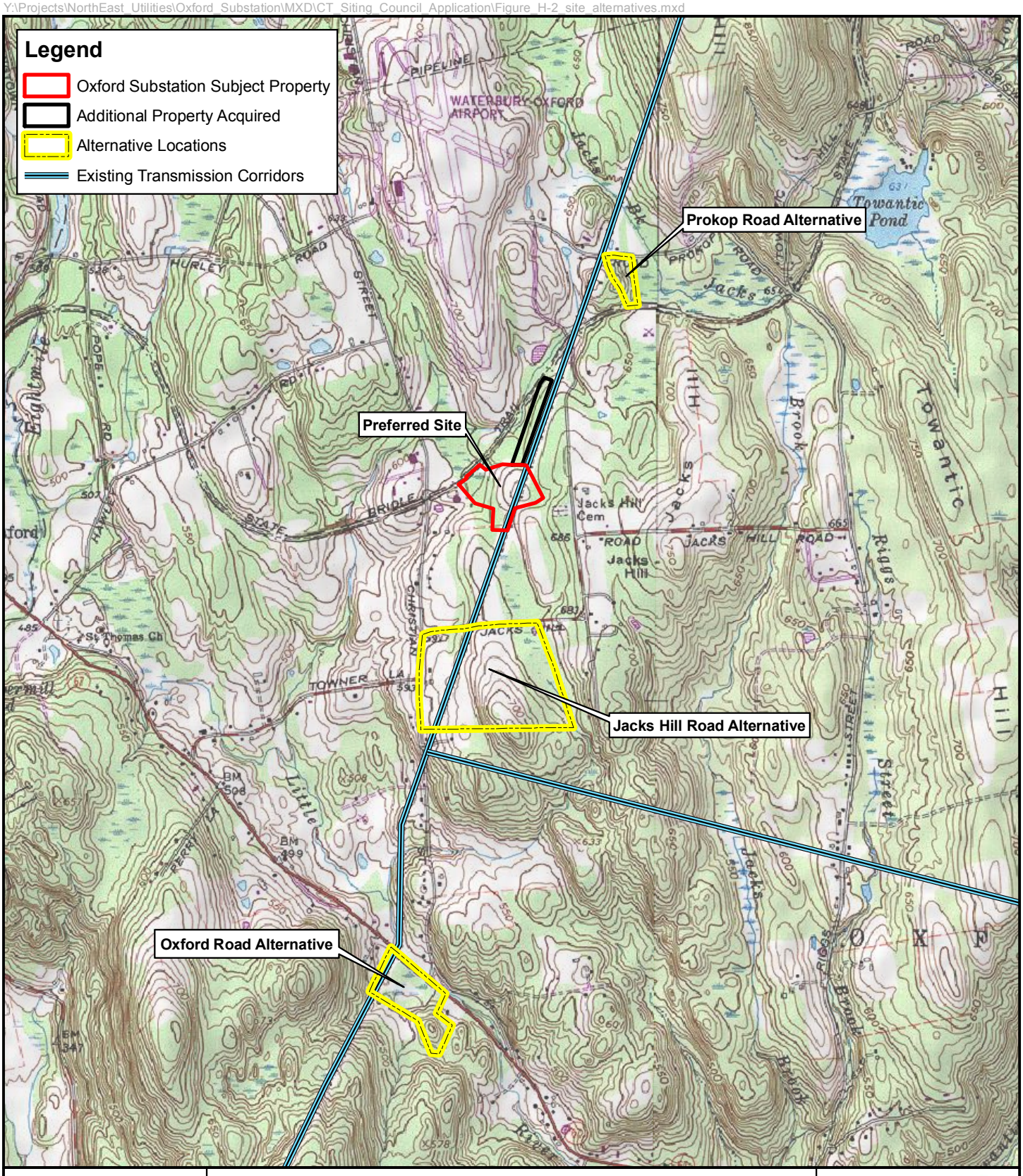
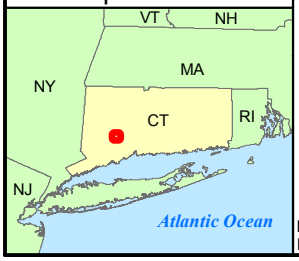


Map Location



Site Alternatives Map

Oxford 115- to 13.8-kV Substation

0 500 1,000 2,000 3,000 4,000 5,000 6,000 Feet

0 100 200 400 600 800 1,000 1,200 1,400 1,600 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: USGS Topographic Quadrangles: Southbury and Naugatuck, CT.

Scale: 1:24,000
(1 inch = 2,000 ft)

Northeast Utilities System

ENSR | AECOM

Figure H-2

Date: November 2006

Project #: 05022-012

The Subject Property is an ideal location for a substation given its central location relative to the load, and its easy interconnection to 115-kV transmission circuits that already traverse the property along a CL&P right-of-way.

The Property consists of Woodbridge, Paxton, and Ridgebury soils (two general upland soil series, and one general wetland soil series). The Paxton soil series is characterized by a moderate erosion hazard. Both the Woodbridge and Ridgebury series have a seasonal high water table. Steep slopes of excavations are unstable when the soil is saturated and tend to slump.

The Substation itself would have no effect on any inland wetlands or 100-foot upland review area. Site preparation and grading activities will be within upland review areas, these activities will be mitigated by implementation of (1) construction best management practices, (2) Connecticut Guidelines for Soil Erosion and Sediment Control, and (3) development and implementation of a landscape and site restoration plan.

The Subject Property allows CL&P to design a substation that meets the needs of the Town, is in an area already zoned for industrial use, minimizes adverse environmental effects and does not create a visual effect on residential neighbors.

H.1.2 Site Alternative – Jacks Hill Road – South Side of Road

A potential alternative site was identified to the south of Jacks Hill Road, east of Christian Street. The soils at this site consist of Paxton and Woodbridge fine sandy loam. The Paxton series consist of gently sloping (3-8% slopes) well drained soils on the top of drumlins, hills and ridges of glacial uplands. The Woodbridge series is gently sloping (3-8% slopes), moderately well drained soil found on the top of drumlins, in slight depressions, and at the base of drumlins on glacial uplands. Because of the seasonal high water table associated with this series,

excavations are often inundated. Steep slopes of excavations are unstable when the soil is saturated and tend to slump. The erosion hazard for this soil series is also moderate.

The zoning for the site was recently changed from Industrial to Residential as part of an approval from the Oxford Planning and Zoning Commission for development of senior housing (the Glendale residential development), and the site is not available for purchase. The residential development is currently under construction. Additionally, according to the State and Federal Species and Significant Natural Communities Map for Oxford, CT, published by the Connecticut Department of Environmental Protection ("CTDEP") Natural Diversity Database ("NDDB"), this location is located near a NDDB Area of Concern.

H.1.3 Site Alternative – Prokop Road Alternative

A potential alternative site was identified to the east of the transmission line and south of Prokop Road. The soils at this site include Ninigret fine sandy loam and Hollis-Charlton fine sandy loam. Ninigret fine sandy loam is a nearly level (0-3% slopes), moderately well drained soil in slightly depressional areas of broad outwash terraces and narrow stream valleys. Soils in this series are easy to excavate however the steep slopes of excavations are unstable due to a seasonal high water table. The Hollis-Charlton series is moderately steep to steep, somewhat excessively drained to well drained soils on uplands where the relief is affected by the underlying bedrock. Limitations of the Hollis-Charlton series include steep slopes, shallowness to bedrock, rock outcrops and stoniness.

Zoning for the site is industrial, however, uses west of the potential site consist of mixed use commercial / residential and residential development and the area north of the potential site contains residential uses. The potential alternative site and the area south of Prokop Road in general, contain steep grades and adjacent inland wetlands. A new easement (resulting in additional tree clearing and upland disturbance) would also be required for this alternative as

the site is not directly traversed by the existing transmission line and a new corridor would be needed to tie-in the transmission lines to the Substation.

H.1.4 Site Alternative – Oxford Road Alternative

This location is at the southerly edge of the search area. The potential alternative site was identified to the east of the transmission line and south of Oxford Road (Route 67). The parcel contains standing water and inland wetlands. The Little River flows across a portion of this site, and an additional portion of the site is located in the floodplain of the river. The soils present at this site include Walpole sandy loam, a wetland soil. This soil series is characterized by nearly level (0-3% slopes), poorly drained soil in depressions on broad outwash terraces and narrow stream valleys. These soils have a high water table. Because of this, excavations are often inundated and the steep slopes of excavations are not stable if the soil is saturated. In places, this soil is subject to ponding for several weeks during the winter.

The parcel fronts Oxford Road, a secondary state highway. Additionally, a significant amount of earthwork and tree clearing would be required to obtain access and to make the site suitable for construction of the Substation. These activities would result in wetland and floodplain impacts along a segment of the Little River. The transmission line tie-ins would also result in wetland impacts as the wetland area would need to be traversed in order to gain access to the existing transmission line which crosses the western portion of the site. Zoning for the site is commercial; public utility stations are not a permitted use in this zone. Adjacent parcels to the northwest and to the north of Oxford Road contain residential uses.

Table H-1 Oxford Substation Site Alternative Analysis Matrix

Review Criteria	Preferred Site	Jacks Hill Road Alternative	Prokop Road Alternative	Oxford Road Alternative
Proximity to Existing Transmission Line	√	√	√	√
Consistency with Zoning and Present Land Use	√		√	
Moderate Earthwork Requirements Based on Existing Topography	√	√		
Sufficient Space	√			√
Ease of Access	√	√	√	
Central Location with Respect to Customer Load	√	√	√	√
Limited Wetland & Floodplain Disturbance	√	√	√	
Moderate Cultural Resource Sensitivity	√	√	√	√
Minimal Upland Habitat Disturbance & Tree Removal	√	√		
Distance From Private Residences	√			
Availability of Property	√ Note: CL&P owned			

H.2 Connecticut Energy Advisory Board

Conn. Gen. Stat. § 16a-7c(b) requires the Connecticut Energy Advisory Board ("CEAB"), upon receipt of an Application, to issue a request for proposals to seek alternate solutions to the need that will be addressed by this Project. Under Conn. Gen. Stat. § 16-50*l*(a)(2), the CEAB process is triggered by the filing of certain applications with the Council, including a proposed Substation. The CEAB developed preferential criteria for evaluating responses to requests for proposals with a view toward balancing energy reliability, environmental and natural resource protection, cost effectiveness, and quality of life goals. The Oxford Substation Project is consistent with CEAB's preferential criteria since it:

- Enhances distribution system reliability, operability and capacity;
- Protects energy resources from physical risk through CL&P's substation security designs and practices;
- Provides long-term benefit (the Project will be designed to last for more than 40 years) and avoids stop-gap measures (the need for additional, long distribution feeders from substations in other towns over difficult terrain will be eliminated);
- Capitalizes on existing infrastructure by locating immediately adjacent to an existing transmission line with adequate capacity (no transmission expansion is needed);
- Meets an identified energy need and is consistent with forecasted resource needs as identified by the Regional System Operator ("ISO-NE") and the Council.

  The ISO-NE approved the plan for implementation of the Oxford (26N) Substation on January 26, 2006 stating, in relevant part, that the participant's (NU) proposed plan "will not have a significant adverse effect on the stability, reliability or operating

characteristics of the Northeast Utilities System Companies' transmission facilities..." (See Volume II, Appendix L).

- Provides local tax revenues; and
- Supports environmental protection, as discussed in Section K and L of this Application.

I.0 EXISTING CONDITIONS

The following section provides a detailed description of the existing conditions within the Subject Property (Refer to Volume II, Appendix B, Project Plans).

I.1 Existing Land Use

The Substation Property, and associated 4.4 acre easement, is located within the Oxford Commerce Park located north of Jacks Hill Road, west of Christian Street and east of North Larkey Road. The property has been zoned for I-industrial use per the Town of Oxford Zoning Regulations (Refer to Figure I-1, Vicinity Map). The state-owned Larkin Bridle Trail is located to the northwest, and the Oxford Science Park is to the south. The Waterbury-Oxford Airport runway is approximately 1,500 feet to the north. There are no existing homes in the area adjacent to the Property. Existing forested uplands and wetlands provide visual screening of the site. An existing 110-foot wide CL&P right-of-way traverses the Property and is occupied by three 115-kV transmission circuits on two rows of steel lattice towers.

I.2 Wetlands and Watercourses

Substation Property

On April 3 and 10, 2006, Soil Science and Environmental Services, Inc. ("SSES"), delineated and flagged the boundaries of the wetlands and watercourses on and immediately adjacent to the Property. The assessment was conducted to determine the presence and extent of inland wetlands and watercourses, and to confirm the boundary of wetland soils on and adjacent to the site. On June 7, 2006 ENSR Corporation ("ENSR") performed field

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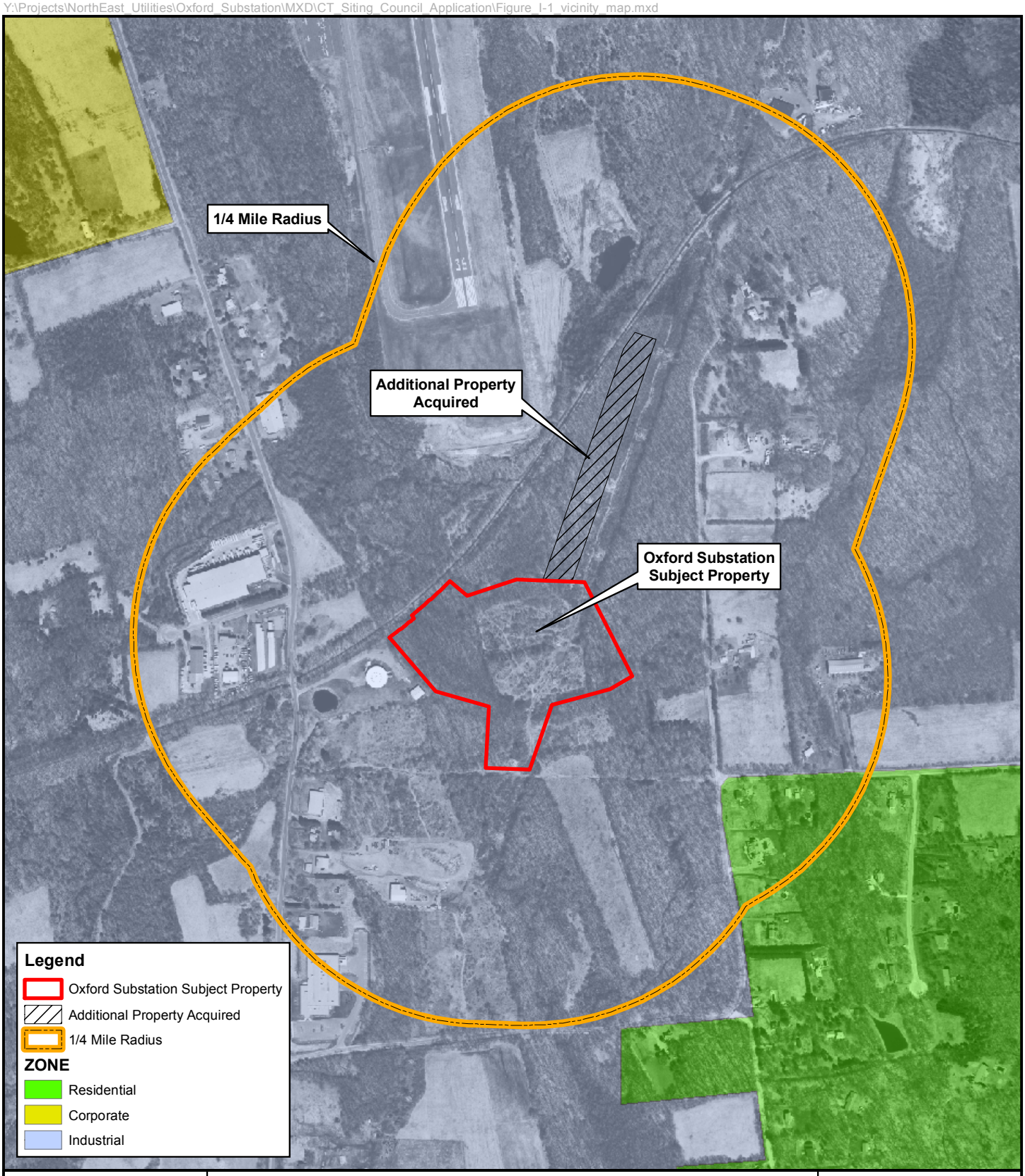

Map Location

Vicinity Map

Oxford 115- to 13.8-kV Substation

0 350 700 1,400 2,100 Feet

0 50 100 200 300 400 500 600 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: SBC aerials.

Scale: 1:8,400
(1 inch = 700 ft)

Northeast Utilities System

ENSR | AECOM

Figure I-1

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reconnaissance to evaluate wildlife habitats and vegetative cover types (Refer to Volume II, Appendix D, Environmental Assessment Report).

The boundaries of the inland wetlands and watercourses were determined based upon the definitions and methodology pursuant to the Connecticut Inland Wetlands and Watercourses Act, Conn. Gen. Stat. §§ 22a-36 through 22a-45. The wetlands boundary determination performed for the Property also included a review of the Town of Oxford Wetland Soils Map prepared by the CTDEP Environmental and Geographic Information Center (1995 Soils Digital Data), and a previous wetland delineation conducted by Environmental Planning Services, Inc. in 2004 for the re-subdivision of land owned by David B. Sippin. A Wetlands / Watercourses and Soil Report prepared by SSES is provided as an attachment to Volume II, Appendix D, Environmental Assessment Report, and documents the wetland soil types found on the Substation site.

The wetlands were classified according to the U.S. Fish and Wildlife Service classification system (Cowardin et al, 1979), and assessed based on the U.S. Fish and Wildlife Service Wetland Definition and Classification System utilizing Keys to Landscape Position of Landform Descriptors for U.S. Wetlands (Operational Draft).

The wetlands on the Property consist of palustrine scrub/shrub broad-leaved deciduous wetlands located within the existing 110-foot wide electric transmission line easement, and palustrine forested broad-leaved deciduous wetland (forested swamp) located along the fringes of the site. The scrub/shrub wetland system includes some inclusions of palustrine emergent persistent wetland (wet meadow). There are two main intermittent watercourses that cross the Property. One flows through the southern portion and the second watercourse flows along the northerly portion. These two watercourse systems converge at the western border of the Property and flow to the north, under the Bridle Trail. The watercourse/stream

system is ultimately tributary to the Little River located approximately 0.8 mile to the southwest of the site. Wetlands occurring on the Property receive surface and ground water, which passes through the wetland and is discharged to the streams and wetlands at lower elevations. The wetlands on and abutting the Property are located along the fringe and lower elevations of the till ridge that forms the central portion of the Property, and seasonal high groundwater and intermittent stream flows contribute to the hydrological characteristics of the wetland system.

The scrub/shrub wetlands are dominated by moderate to tall growing shrubs including southern arrowwood (*Viburnum dentatum*), silky dogwood (*Cornus amomum*), black willow (*Salix nigra*), pussy willow (*Salix discolor*), winterberry (*Ilex verticillata*), spicebush (*Lindera benzoin*) and multiflora rose (*Rosa multiflora*). The emergent wetlands interspersed within the scrub/shrub wetland are dominated by a plant community of spotted jewelweed (*Impatiens capensis*), sedge (*Carex spp*.), soft rush (*Juncus effusus*), knotweed (*Polygonum spp*.), rough-stemmed goldenrod (*Solidago rugosa*) and hydrophillic grasses (*Graminaea spp*.). The forested wetlands are dominated by a canopy of deciduous species including red maple (*Acer rubrum*), American elm (*Ulmus americana*), yellow birch (*Betula alleghaniensis*), sweet birch (*Betula lenta*) and to a lesser extent, eastern hemlock (*Tsuga canadensis*).

Easement Property

The forested wetlands on the easement property exhibit a canopy dominated by red maple (*Acer rubrum*), yellow birch (*Betula alleghaniensis*), American Elm (*Ulmus americana*) and eastern hemlock (*Tsuga canadensis*), subtended by an understory composed of these species as well as highbush blueberry (*Vaccinium corymbosum*), winterberry (*Ilex verticilatta*) and northern arrowwood (*Viburnum dentatum*). Herbaceous vegetation was sparse and consisted predominantly of skunk cabbage (*Symplocarpus foetidus*).

I.3 Vegetation and Wildlife

Substation Property

Upland areas consist of old field habitats, shrub/sapling thickets and mature deciduous forest. The old field habitat is comprised of orchard grass (*Dactylis glomerata*), common milkweed (*Asclepias syriaca*), galium/cleavers (*Galium aparine*), cow vetch (*Vicia cracca*) and common plantain (*Plantago major*). The plant species comprising the shrub thickets include autumn olive (*Elaeagnus umbellata*), gray-stemmed dogwood (*Cornus racemosa*), muliflora rose (*Rosa multiflora*), red cedar (*Juniperus virginiana*) and black cherry (*Prunus serotina*). Mature upland forest abuts the Property and the existing electric transmission line. The predominantly deciduous forest consists of large diameter trees including yellow birch (*Betula alleghaniensis*), white oak (*Quercus alba*), sweet birch (*Betula lenta*), red maple (*Acer rubrum*) and pignut hickory (*Carya glabra*). (Refer to Volume II, Appendix A, Site Photographs).

The plant communities in the upland and wetland cover types described above provide habitats for diverse wildlife. These wildlife habitats collectively function to provide escape cover, nesting sites, browsing and other feeding style opportunities, seasonal water, and migration corridors.

Easement Property

Upland areas on the easement property consist of old field habitats, shrub/sapling thickets and mature deciduous forest. Upland forested areas on the site are dominated by hardwoods such as white oak (*Quercus alba*), red oak (*Quercus rubra*), sweet birch (*Betula lenta*), white ash (*Fraxinus americana*), black cherry (*Prunus serotina*), hickory (*Carya spp.*) and red maple (*Acer rubrum*). The understory in these areas is composed of the canopy species mentioned above as well as highbush blueberry (*Vaccinium corymbosum*),

winterberry (*Ilex verticilatta*) and northern arrowwood (*Viburnum dentatum*). The herbaceous layer is dominated by Canada mayflower (*Maianthemum canadense*), partridgeberry (*Mitchella repens*), teaberry (*Gaultheria procumbens*), hay scented fern (*Dennstaedtia punctilobula*) and cinnamon fern (*Osmunda cinnamomea*).

Due to past agricultural activity and present vegetative maintenance in the right-of-way, the easement currently exhibits some old field habitat, all of which is interspersed with shrub/sapling thickets. These areas are dominated by grasses and forbes including deer tongue (*Panicum clandestinum*), Timothy (*Phluem pratense*), goldenrods (*Solidago spp.*), wild carrot (*Daucus carota*), milkweed (*Asclepias syriaca*), chickory (*Cichorium intybus*), among many others which are too numerous to name and ancillary to the main focus of the habitat assessment. Interspersed within this habitat cover type are various species of woody vegetation including species such as multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), gray dogwood (*Cornus racemosa*), silky dogwood (*Cornus amomum*), and northern arrowwood (Viburnum dentatum).

The upland shrub/sapling thickets on the easement property are areas which are grading from old field habitats to more forested conditions. Herbaceous vegetation is much reduced as compared to the old field habitats described above and woody vegetation dominates. Common plant species occurring in this cover type include plants such as multiflora rose (*Rosa multiflora*), autumn olive (*Elaeagnus umbellata*), gray dogwood (*Cornus racemosa*), silky dogwood (*Cornus amomum*), northern arrowwood (*Viburnum dentatum*), red maple (*Acer rubrum*), black cherry (*Prunus serotina*), hickory (*Carya spp.*) and oak (*Quercus spp.*). Vines such as poison ivy (*Toxicodendron radicans*), Virginia creeper (*Parthenocissus quinquefolia*) and bittersweet (*Celastrus scandens*) are common.

I.4 Rare, Threatened, and Endangered Species

According to the State and Federal Listed Species and Significant Natural Communities Map for the Town of Oxford (June 2006) prepared by the CTDEP NDDB, the Subject Property is not located within any mapped NDDB area of concern. The southernmost portion of the Property is located within ½ mile (upstream) of a mapped area of concern located south of Jack's Hill Road. Projects located within or less then ½ mile away from an area of concern must consult with the NDDB program.

In response to CL&P's August 9th inquiry on the presence of rare, threatened and endangered species, the CT NDDB indicated in its August 31st correspondence that a state-listed threatened species, American kestrel (*Falco sparverius*) occurred historically in the vicinity of the Property (Refer to Volume II, Appendix E, Agency Correspondence). The NDDB recommended that a species-specific field survey be completed to document any observations of American kestrel and the habitat characteristics of the site.

On behalf of CL&P, an ENSR biologist performed a habitat assessment on the Substation site on September 11th. The purpose of the habitat assessment was to determine if the site contained habitat which could potentially be utilized by the American kestrel. Various cover types were documented, with plant lists generated by cover type. Existing plant communities/cover types were photographically documented. An aerial photograph of the site as well as the immediate surroundings and general vegetation cover types are presented on Figure I-2. The entire site, including offsite areas which are visible from and/or immediately adjacent to the Property, were evaluated relative to American kestrel habitat. The American Kestrel Habitat Assessment Report is included in Volume II, Appendix F.

In Connecticut, the American kestrel is listed as a Species of Special Concern. The Atlas of Breeding Birds of Connecticut cites the two primary requirements of American kestrels as

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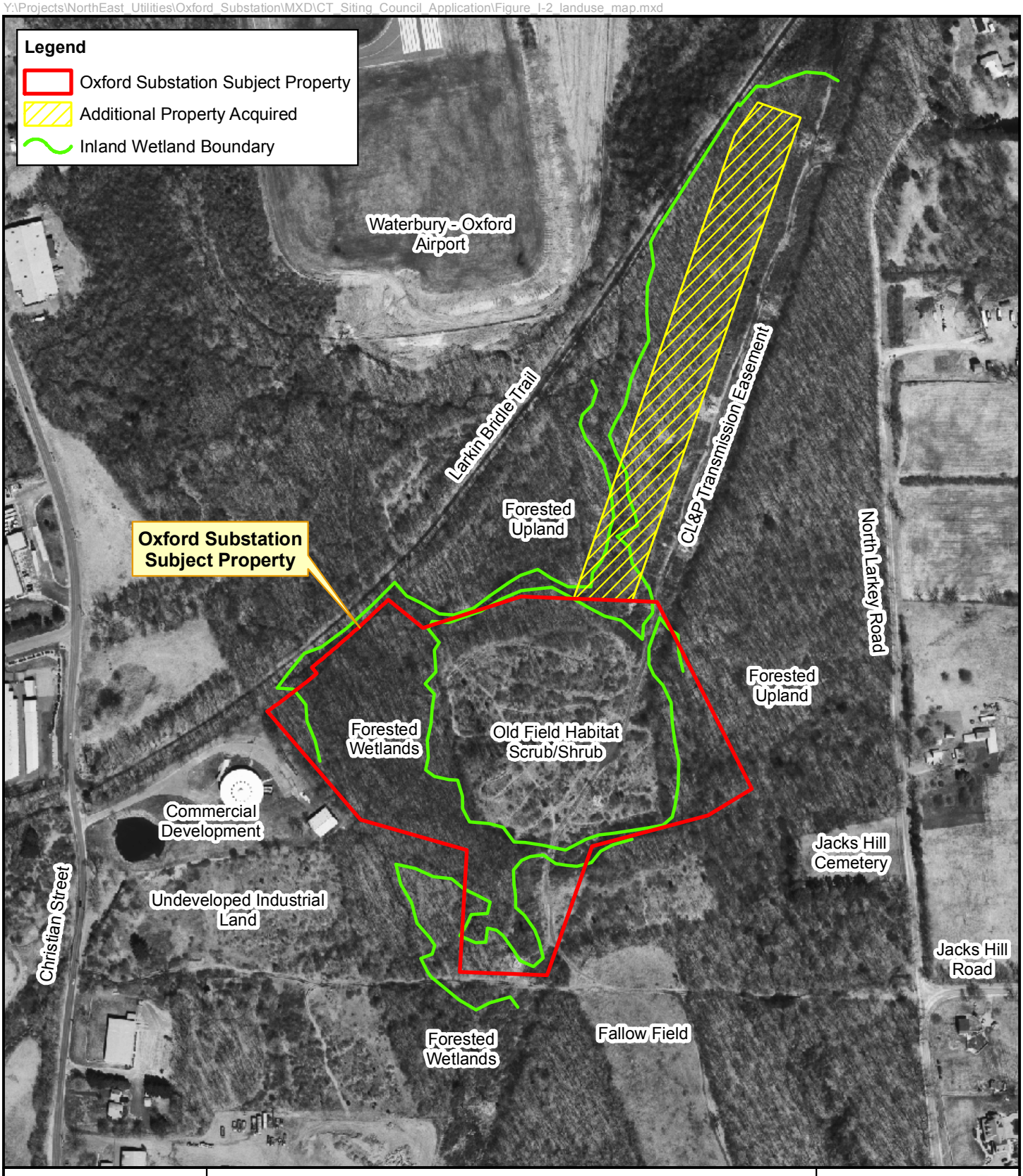

Map Location

N

General Land Use Map

Oxford 115- to 13.8-kV Substation

0 100 200 400 600 800 1,000 1,200 Feet

0 30 60 120 180 240 300 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: SBC aerials.

Scale: 1:4,200
(1 inch = 350 ft)

Northeast Utilities System

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Figure I-2

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being open terrain, which is utilized as hunting grounds, and tree cavities, which are used for nesting. The Atlas states that in Connecticut, American kestrels are usually seen around agricultural areas, airports, large parks and power line rights-of-way. Preferred habitat is grassland and/or shrubland at the edge of forest or open country with scattered trees. Kestrels feed on a wide array of food items including but not limited to large invertebrates, small vertebrates such mammals, herpetofauna and small birds.

Consultation with the U.S. Fish and Wildlife Service ("USFWS") has also been initiated by CL&P, a copy of which is provided in Volume II, Appendix E, Agency Correspondence.

I.5 Water Supply Areas

According to the Water Quality Classification Map of the State of Connecticut as classified by the CTDEP, groundwater within the Subject Property has been designated as GA. The designated use for groundwater within the GA classification is for existing private and potential public drinking water supplies.

Specifically, this classification includes ground waters within the area of influence of private and potential public water supply wells that are presumed to be suitable for direct human consumption without need for treatment.

According to the Town of Oxford, there are no public water supply wells located within ¼-mile of the Property. The area is presently partially served by the Heritage Village Water Company, which relies on a system of five wells to meet the Town's water supply. Additionally, Aquarion Water Company serves one customer at 154 Christian Street. The wells utilized by Heritage Village Water Company are located close to the Pomperaug River in the Town of Southbury. The wells pump water from the Pomperaug Aquifer which extends from the Housatonic River northward into Woodbury, along the Pomperaug River. Some of the homes and businesses on Christian Street and Jacks Hill Road and all businesses and

homes on North Larkey Road rely on private wells as a water source. Residences located within ¼ mile of the Substation site are shown on Figure I-3. Figure I-4 identifies those locations within ¼ mile which rely on private wells as drinking water sources.

The Property is not located within a State designated Aquifer Protection Area according to data obtained from the CTDEP Geographic Information Systems ("GIS") database. The location of these APAs is determined through preliminary mapping and later final mapping. The mapping is performed by the water companies who own the wells and is subject to approval by the CTDEP. No high yield public water supply wells are located within ¼-mile of the Property.

I.6 Scenic Areas

There are no documented scenic areas or scenic view-sheds designated within ¼ mile of the Subject Property. According to the Oxford Public Works Department, there are no scenic roadways officially designated within ¼ mile of the Property. A segment of the state-owned Larkin Bridle Trail is located to the northwest of the Property. Information on the Larkin Bridle Trail is provided in Section I.10 below.

I.7 Historic and Archaeological Resources

CL&P received correspondence from the Connecticut State Historic Preservation Officer ("CT SHPO") dated August 16, 2006 indicating that the preferred site and the alternate sites, possess moderate to high sensitivity for prehistoric and historic archaeological resources (Refer to Volume II, Appendix E, Agency Correspondence). The CT SHPO recommended that a professional reconnaissance survey be undertaken to identify and evaluate archaeological resources which may exist within the proposed project limits.

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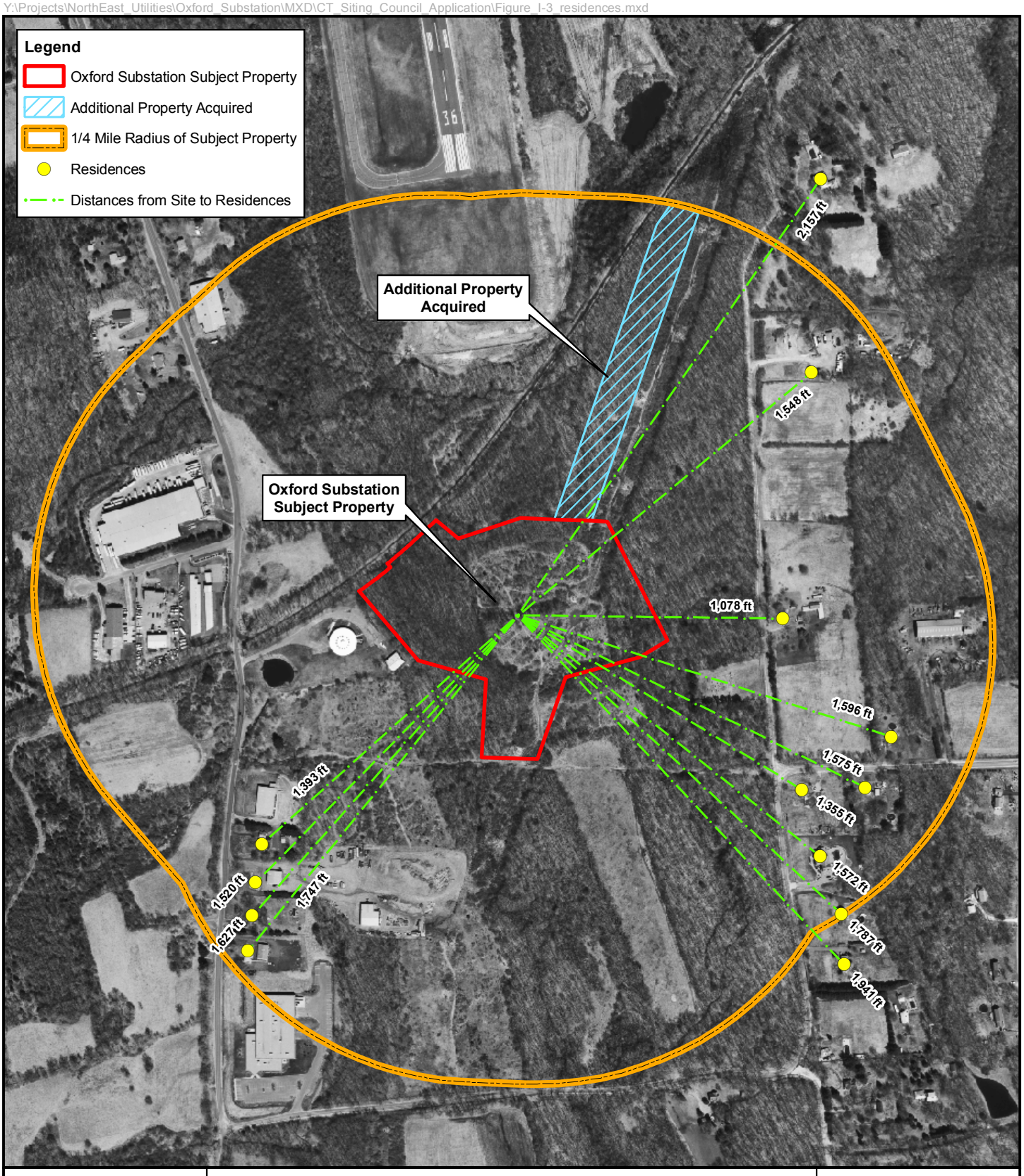

Map Location

Residences Within 1/4 Mile of Subject Property

Oxford 115- to 13.8-kV Substation

0 275 550 1,100 1,650 Feet

0 75 150 300 450 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: SBC aerials.

Scale: 1:6,600
(1 inch = 550 ft)

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Figure I-3

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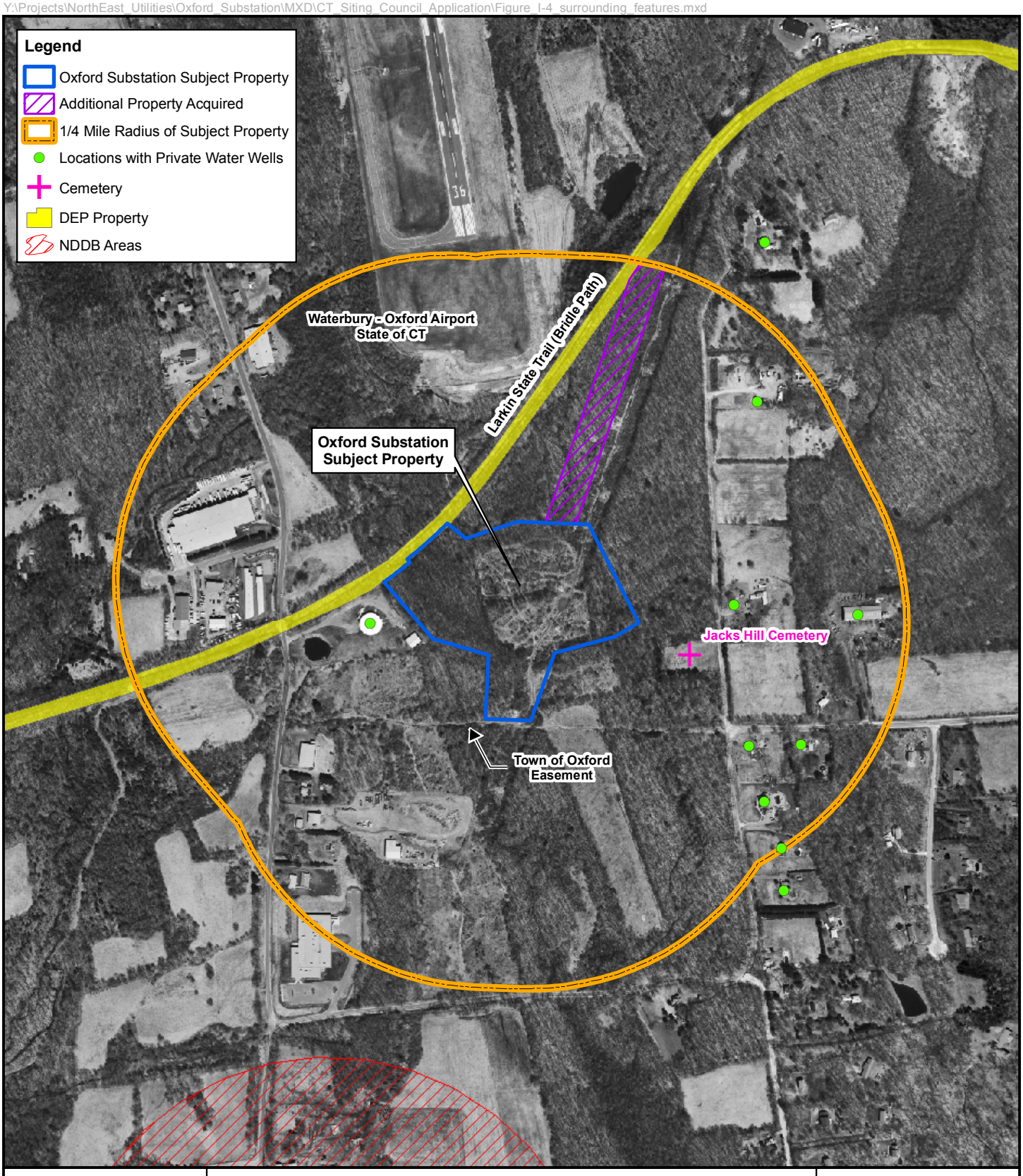

Map Location

Surrounding Features

Oxford 115- to 13.8-kV Substation

0 325 650 1,300 1,950 Feet

0 50 100 200 300 400 500 Meters

Map Projection: CT State Plane , NAD 83, US Feet.
Image Source: SBC aerials. Data Source: CT DEP and ESRI GIS data.

Scale: 1:7,800
(1 inch = 650 ft)

Northeast Utilities System

ENSR | AECOM

Figure I-4

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The cultural resource assessment conducted by Raber Associates in 2006 found no reported cultural resources within any project areas, and noted that any unreported resources in the Prokop Road alternative site would have been removed by the sand and gravel extraction operation which encompasses this entire property. The Substation site appeared highly sensitive for Native American archaeological resources. The Jacks Hill Road alternative, and limited areas of the Oxford Road alternative away from wetlands, also appeared sensitive for similar resources. The Cultural Resources Assessment Report is included in Volume II, Appendix G.

There are no historic resources adjacent or close to the Substation site which have been determined eligible for the National or State Registers of Historic Places. The former railbed to the northwest, now the Larkin Bridle Trail, possesses some historical context and appears potentially eligible. The Jacks Hill Cemetery is a protected historic resource under state statute. Consultations with the Oxford Historical Society and the Oxford Town Historian did not yield any additional information on historic resources adjacent or close to the Substation site.

In response to the CT SHPO's recommendation, an archaeological reconnaissance was completed by Raber Associates to locate any cultural resources with potential eligibility for the National or State Registers of Historic Places. Reconnaissance results are discussed in Section K.10 of this document.

I.8 Geology and Soils

According to the Bedrock Geology Map of Connecticut (Connecticut Geology and Natural History Survey, 1985), the bedrock underlying the Subject Property consists of well layered gray granofels. Granofels are medium to coarse grained metamorphic rock composed primarily of quartz and feldspar.

A review of the Surficial Materials Map of Connecticut, DEP, 1992, indicates that most of the site is underlain by thin till generally less than 10-15 feet thick.

The Substation Property consists of the following upland and wetland soil types. The Soil Report and sketch map of soil type locations mapped by SSES are included as an attachment to Volume II, Appendix D.

There are approximately 9.43 acres of uplands that occur within the 15.77 acre Property. The upland soil types consist of the following:

Woodbridge fine sandy loam (Aquic Dystrudepts)

The Woodbridge series consists of moderately well drained loamy soils formed in subglacial till. They are very deep to bedrock and moderately deep to a densic contact. They are nearly level to moderately steep soils on till plains, hills, and drumlins. Slope ranges from 0 to 25 percent. Saturated hydraulic conductivity ranges from moderately low or moderately high in the surface layer and subsoil and low or moderately low in the dense substratum.

Paxton fine sandy loams (Oxyaquic Dystrudepts)

The Paxton series consists of well drained loamy soils formed in lodgement till. The soils are very deep to bedrock and moderately deep to a densic contact. They are nearly level to steep soils on till plains, hills, and drumlins. Slope ranges from 0 to 45 percent. Saturated hydraulic conductivity is moderately high or high in the surface layer and subsoil and low to moderately high in the substratum.

Montauk fine sandy loams (Oxyaquic Dystrudepts)

The Montauk series consists of very deep, well drained soils formed in till derived primarily from granitic materials. These soils are on upland till plains and moraines. Slope ranges

from 0 to 35 percent. Saturated hydraulic conductivity is moderately high or high in the solum and low to moderately high in the substratum.

There is a continuous wetland system and two intermittent watercourses present on the Subject Property. The wetland area comprises approximately 6.34 acres. The wetland soils types consist of the following:

Ridgebury sandy loam (Aeric Endoaquepts)

The Ridgebury series consists of very deep, somewhat poorly and poorly drained soils formed in till derived mainly from granite, gneiss and schist. They are commonly shallow to a densic contact. They are nearly level to gently sloping soils in low areas in uplands. Slope ranges from 0 to 15 percent. Saturated hydraulic conductivity ranges from moderately low to high in the solum and very low to moderately low in the substratum.

Leicester fine sandy loam (Aeric Endoaquepts)

The Leicester series consists of very deep, poorly drained loamy soils formed in friable till. They are nearly level or gently sloping soils in drainageways and low-lying positions on hills. Slope ranges from 0 to 8 percent. Permeability is moderate or moderately rapid in the surface layer and subsoil and moderate to rapid in the substratum.

Whitman loam (Typic Humaquepts)

The Whitman series consists of very deep, very poorly drained soils formed in glacial till derived mainly from granite, gneiss, and schist. They are shallow to a densic contact. These soils are nearly level or gently sloping soils in depressions and drainageways on uplands. Permeability is moderate or moderately rapid in the solum and slow or very slow in the substratum.

I.9 Floodplain Areas

According to Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Map (Community Panel Number 090150 0003B and 090150 0001B), dated December 4, 1979, there are no flood hazard areas located within the Property.

I.10 Recreational Areas

The state-owned Larkin Bridle Park Trail (Bridle Trail) is located to the northwest of the Property (refer to Figure I-4). The Bridle Trail is a component of the Connecticut Rails-To-Trails System, and is an officially designed Connecticut Greenway (CTDEP). The trail is an abandoned rail line running between Waterbury and Brewster, NY. An approximate 10.3 mile section of the railway was dedicated to the State of Connecticut in 1943 for use as a park and bridle trail. The trail begins in Southbury and ends in Naugatuck, and consists of the original surface of ballast and cinder. The trail is used primarily by equestrians and hikers.

I.11 Seismic Areas

Based on review of USGS-National Earthquake Hazard Program maps, the seismic risk in the Project area is indicated as a peak acceleration (percent of gravity [%g]) value of 5 with 10 percent probability of exceedance in 50 years. The Subject Property is located in a lower (probability range) seismic hazard area according to the USGS Earthquake Hazards Program.

I.12 Noise

The existing land use of the Property produces noise levels well below the CTDEP standard regulated level of 70 dBA for a Class C receptor (Industrial use) as the land is currently unoccupied except for the eastern portion of the Subject Property which contains existing

CL&P transmission circuits. Some of the adjacent properties are currently under development as the initial components of the Oxford Commerce Park are constructed, including the main roadway Commerce Park Drive, all of which will eventually contribute to noise generation in the Project area. Other contributing factors for noise generation from the area of the Substation Property are traffic noises generated from nearby roadways, and regular operation of the Waterbury-Oxford Airport to the north of the Subject Property.

I.13 Lighting

The only lighting currently existing within the Subject Property is associated with the Waterbury-Oxford Airport safety lighting that has been affixed to multiple CL&P transmission line towers traversing the eastern portion of the site.

I.14 Other Surrounding Features

Figure I-4 (Surrounding Features) depicts the locations of other surrounding features within ¼-mile of the Property. The figure shows the location of municipal, state, and federal property, statutory facilities [as defined under Conn. Gen. Stat. § 16-50*l*(a)(1)(A)(iii)], and CTDEP NDDB areas. As shown on the figure, the Larkin Bridle Trail is located to the northwest, and the Waterbury-Oxford Airport to the north of the Property. No known statutory facilities [private or public schools [K-12], licensed child day care facilities, licensed youth camps, and public playgrounds] were identified within a ¼-mile radius of the Property. There are however 11 residences located within ¼-mile of the Property. None of these residences are located immediately adjacent to the site. The closest residence (14 North Larkey Road) is located approximately 1,078 feet to the east of the center point of the Substation Property (refer to Figure I-3).

The locations and approximate distances of these residences to the center point of the Substation Property are depicted on Figure I-3. The Jacks Hill Cemetery is an active

cemetery in use since the late 18th century, located approximately 200 feet to the east of the Property and approximately 650 feet to the east of the Substation footprint. The Jacks Hill Cemetery qualifies as an "ancient burial place" pursuant to Conn. Gen. Stat. § 19a-315, which defines "ancient burial places" as any tract of land within any municipality which has been used or has been in existence as a burial ground for more than one hundred years. The recent re-subdivision of the Oxford Commerce Park resulted in the creation of approximately 4.30 acres of open space surrounding the Jacks Hill Cemetery, which is located on the east side of the Property. Other land uses in proximity to the site include industrial, commercial, and mixed industrial-residential uses. The Substation Property is located entirely within an industrial zoned area of the Town of Oxford. The Property is one of five industrial-zoned lots incorporating the Oxford Commerce Park. Some of the adjacent lots are currently under development for the stormwater management system for Commerce Park Drive.

J.0 SAFETY AND RELIABILITY INFORMATION

The Project would be constructed in full compliance with the standards of the National Electrical Safety Code and good utility practice. Should equipment experience a failure, protective relaying would immediately remove the equipment from service, thereby protecting the public and the equipment within the Substation.

Fire/smoke detection would automatically activate an alarm at Connecticut Valley Electric Exchange ("CONVEX"), and the system operators then would take the appropriate action. The control enclosure would be equipped with fire extinguishers.

The Substation has been 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 "loop through" design configurations for the existing 115-kV overhead transmission lines, transformer protection, and redundant automatic protective relaying equipment.

The 115-kV portion of the Substation would include a circuit breaker to facilitate a "loop through" design configuration. In the event of a 115-kV line fault, the circuit breaker would open to help isolate the faulted line. Protective relaying equipment is incorporated into the Project design to automatically detect abnormal system conditions and send a protective trip signal to the respective circuit breaker(s) at each end of a line to isolate the faulted section of the transmission system. The protective relaying schemes include fully redundant primary and backup equipment so that an outage of one scheme does not require the portion of the transmission system being monitored by the protective relaying equipment to be removed from service.

The protective relaying and associated equipment, along with a SCADA system for remote control and equipment monitoring, would be housed in the switchgear enclosures as well as in the control enclosure as depicted on the attached Project Plans (Refer to Volume II, Appendix B). These enclosures would have smoke detectors installed which would be monitored from a remote location.

Other devices would constantly monitor the Substation equipment to alert CL&P of any abnormal or emergency situations. The access drive to the Substation would be gated and the perimeter of the Substation would be enclosed with a 7-foot high chain link fence topped with an additional foot of 3 strands of barbed wire to discourage unauthorized entry and vandalism. Lighting would be provided within the Substation yard to facilitate work at nighttime or during inclement weather.

CL&P would install an oil sump to serve as a spill-containment chamber around the two proposed transformers. The sumps would be sized with sufficient capacity to contain a spill in the event of an inadvertent release of oil. CL&P would propose to install an Imbiber Beads Drain Protection System® similar to containment systems installed at other CL&P Substations, such as the Shunock Substation in North Stonington and the proposed Wilton Substation in Wilton.

In accordance with 14 CFR Subpart 77 “Objects Affecting Navigable Airspace”, a Notice of Proposed Construction will be filed with the Federal Aviation Administration (“FAA”), since the Substation and associated transmission towers are to be located within approximately 1,500 feet of the end of the runway at the Waterbury-Oxford Airport. The Connecticut Department of Transportation (“CTDOT”) Commissioner will also be notified of construction activities within 1/2 mile of the end of a public airport runway. Copies of these consultations and notifications will be provided to the Council when complete.

K.0 EFFECTS ON THE ENVIRONMENT

The development of the Substation would not have significant, long-term adverse effects on the existing environment or ecological characteristics of the Property, or on the scenic, historic or recreational values of the surrounding area. Please refer to the Project Plans located in Volume II, Appendix B that depict the proposed conditions associated with the Substation.

K.1 Public Health and Safety

The Project would be constructed in full compliance with the standards of the National Electrical Safety Code and good utility practice. Applicable signage would be installed alerting the general public of the dangers of high voltage with the Substation.

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

The Project is consistent with local, State, and Federal land use plans. According to the Oxford Zoning Regulations, the Substation Property lies within an area zoned for Industrial use (I) and is not within an Aquifer Protection Zone. Pursuant to Schedule A of the Oxford Zoning Regulations, *public utility stations* are a permitted use in the Town of Oxford's Industrial District. The general area of the Property is designated in the *Town of Oxford 1999 Draft Plan of Conservation and Development Economic Base Analysis North Area Industrial Plan* (April, 1999) for industrial development.

CL&P has also reviewed the *Conservation and Development Policies Plan for Connecticut 1998 - 2003* ("C&D Plan") for information relating to the State's growth in general, and the Town of Oxford and neighboring communities specifically. The objective of the C&D Plan is to guide and balance response to human, environmental, and economic needs in a manner that best suits Connecticut's future.

Based upon the general planning information provided in C&D Plan, the Project is consistent with the overall goals and objectives of the Plan and serves a public need for a reliable source of electricity for a developing town such as the Town of Oxford. As stated in the C&D Plan, "the growth of firms involved in the production of energy-related products and the provision of energy related services helps retain capital and preserve and expand job opportunities within Connecticut" (p. 16).

There are no Federal properties or Federally-designated areas located on or within ¼-mile of the Substation Property, therefore, the Project is not affected by any applicable Federal land use plan.

K.3 Existing and Future Development

The Substation would benefit the community by improving the electric reliability of existing service to the Town and provide the ability to meet increased energy demands. The Substation would effectively eliminate reliance on the other area substations.

The Substation would be contained within an approximately 1.1-acre fenced area. The fenced area would be approximately 226- by 229-feet, with a trap-rock surface and secured by a 7-foot high chain link fence topped with one foot of barbed wire. The 115-kV line interconnection with the Substation would be made using two 74-foot high laminated wood pole intermediate structures, and one 55-foot high wooden H-Frame line terminal structure. The Substation would consist of typical components including power transformers, metal-clad distribution switchgear, circuit switchers, circuit breakers, a relay and control enclosure (approximately 48 feet by 14 feet) and a battery enclosure (approximately 24 feet by 14 feet) within the fenced area of the Substation. The enclosures would contain protective relaying and control equipment associated with the transmission portion of the Substation. Also within the switchgear and control enclosures, equipment for full Supervisory Control and

Data Acquisition (SCADA) system functions and digital metering would be installed at the Substation for control and monitoring of the Substation from a remote location.

K.4 Site Access / Roads

Access to the Substation will be from Commerce Park Drive, which is currently under construction by others to provide access to the Oxford Commerce Park. CL&P would construct an access drive near the terminus of the Commerce Park Drive in a northerly direction into the Subject Property (approximately 600 linear feet) (Refer to Volume II, Appendix B, Project Plans). The travel lane of the access drive will be approximately 15 feet wide to accommodate CL&P vehicles, with the remaining width of approximately 10 feet comprising the driveway embankments. A bituminous concrete apron would be installed at the entrance of the access drive at the junction with Commerce Park Drive. At the northern terminus of the driveway, a level, crushed stone parking area would be created for CL&P maintenance vehicles. Distribution getaways would exit the Substation underground in conduits beneath the access drive.

Once operational, CL&P does not plan to permanently staff the Substation; periodic trips (two trips per month) to the Substation would be anticipated for monitoring and maintenance purposes.

K.5 Wetlands and Watercourses

The Substation facility is sited outside of inland wetlands and the locally regulated 100-foot upland review area. Site preparation and grading activities for the construction of the Substation will extend into portions of the upland review area. Approximately 22,700 square feet of upland review area will be disturbed during the construction phase of the Project. The proposed work within the 100-foot upland review area will be predominantly grading activities to construct the embankments around the Substation and to construct the gravel access

drive and associated drainage swale to provide access to the Substation. Access to the Substation will be via a new gravel access drive constructed on the north side of Commerce Park Drive. Access to the Substation would require crossing an inland wetland and intermittent watercourse. There is a scrub-shrub/emergent wetland located at the southern portion of the site with two "finger-like" projections of wetland that extend easterly across the site. The first crossing will be approximately 50 linear feet across and the second wetland/watercourse crossing will be approximately 40 linear feet across. There is no other feasible means of upland access from a public road to the site. CL&P has evaluated multiple crossing locations to reduce the overall inland wetland and watercourse effects from the construction of a new access drive. CL&P would construct the minimum width driveway required to safely access and egress the Substation. Constructing a new access drive for the Substation would temporarily affect approximately 1,300 square feet of inland wetlands and permanently affect approximately 3,400 square feet of inland wetlands.

The northern finger-like projection of wetland to be crossed by the access drive borders an intermittent watercourse. Construction of the access drive would require crossing of this approximately six foot wide intermittent watercourse. The area of the watercourse to be affected is located within the existing electric transmission line right-of-way. The watercourse at this location consists of shallow, gradually sloping banks with a gravel / cobble substrate. Approximately 50 linear feet and approximately 300 square feet of this intermittent watercourse would be permanently affected by the construction of the access drive. The watercourse crossing would be accomplished while maintaining ambient base flows of the stream. CL&P's culvert crossing design includes an 18-inch reinforced concrete pipe with the capacity to maintain ambient stream flow and to handle anticipated storm flows. The sizing and structure type of the culvert is supported by the watershed and drainage calculations provided in Volume II, Appendix H. A second culvert has been designed by

CL&P to be installed just north of Commerce Park Drive to maintain the local watershed characteristics of the wetland crossed by the proposed access drive (Refer to Volume II, Appendix H, Watershed and Drainage Calculations). .

Constructing the overhead tie-ins from the existing 115-kV transmission line into and out of the Substation will require expansion of the easement area, which results in the clearing/removal of trees within the forested wetland bordering the Substation to the north and south. The clearing of trees will result in secondary impacts to wetlands, as defined by the U.S. Army Corps of Engineers ("USACE"). These secondary wetland impacts total approximately 0.70 acre for the clearing of an approximate 90-foot wide corridor, of which approximately 0.60 acre is comprised of forested wetland that would be converted to scrub/shrub wetland under the new overhead lines. CL&P would propose to remove the trees in the winter months to minimize tracking disturbances within the wetlands. No removal of stumps or grubbing is proposed within the wetland portion of this new easement, nor are any permanent structures proposed to be erected within the wetlands crossed by the new easement.

CL&P is preparing a permit application for submittal to the USACE in accordance with the Category 2 provisions of the Department of the Army Programmatic General Permit of the State of Connecticut.

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

K.6 Wildlife and Vegetation

The upland on the Substation Property consists predominantly of shrub/saplings thickets and old field habitats with some fringes of upland deciduous forest. Portions of these upland habitat types will be displaced by the construction of the Substation and associated access drive. In an effort to reduce vegetative impacts and impacts to wildlife habitats, forest cutting and vegetation clearing have been minimized to the extent possible for the Project. However, portions of the Project will result in converting upland forested cover types to scrub/shrub cover types in the immediate vicinity of the Substation footprint.

A Landscape Plan has been prepared by CL&P to provide the following: 1] visual screening of the Substation; 2] revegetation and restoration of disturbed uplands habitats; and 3] enhancement of available wildlife habitat. (See Volume II, Appendix B).

The inland wetlands on the Property are composed predominantly of scrub-shrub and emergent wetland habitats. A mixed deciduous-coniferous forested wetland is located along the perimeter of the Property outside the limits of the Substation footprint and alignment of the access drive. As discussed in Section K.5 above, the proposed access drive will permanently displace some of the scrub-shrub and emergent wetland located within the transmission line right-of-way. To mitigate for these adverse effects, CL&P is proposing to restore wetland areas temporarily disturbed during construction of the access drive, and to incorporate into the Landscape Plan plantings that would enhance wetland habitat characteristics on the Property adjacent to the proposed wetland disturbances.

The affected wetland area is anticipated to retain the same hydrologic regime and will continue to function the same in terms of flood storage/desynchronization, groundwater recharge/discharge, and water quality maintenance/improvement.

Wildlife habitat utilization of both upland and wetlands which have had their cover types altered will change due to the change in canopy coverage and denser shrub and herbaceous growth. This will tend to attract a different association (similar to those wildlife species utilizing the existing right-of-way) of wildlife than the existing wooded habitat, with more edge and patchy profile diversity than under current conditions. However, the site's wetlands will continue to offer excellent wildlife habitat.

Upon completion of construction, CL&P would re-vegetate disturbed areas with seed mixtures specified by the County Natural Resources Conservation Service ("NRCS"), including any applicable wetland seed mixture applications. In the absence of other specific requirements, disturbed areas will be re-vegetated in compliance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*. Timely restoration of the disturbed areas on the construction access drive and the Substation area and reseeding with an appropriate seed mix will minimize the time of vegetative disturbance and the potential for erosion.

K.7 Rare, Threatened and Endangered Species

ENSR, on behalf of CL&P, performed an American kestrel habitat assessment on September 11, 2006, of the Substation Property and surrounding areas. ENSR's findings were presented in an American Kestrel Habitat Assessment Report which was filed with the CT NDDB (Volume II, Appendix F). CL&P received a response from the CTDEP Wildlife Division on the American kestrel habitat assessment (Refer to Volume II, Appendix E, Agency Correspondence). The CTDEP Wildlife Division agreed with ENSR's recommendation that artificial nest boxes be installed to mitigate potential effects on habitat utilized by the American kestrel. The CTDEP Wildlife Division provided CL&P with plan specifications for the construction of nest boxes, and recommended that the nest boxes be field checked monthly from March through July for a period of three years, which is to be

documented in a yearly report submitted to the CTDEP Wildlife Division. CL&P has been in consultation with the CTDEP Wildlife Division and has agreed to these mitigation measures, including the installation of a minimum of two American kestrel nest boxes to be installed north of the Substation, in accordance with the specifications provided by the CTDEP Wildlife Division.

The CT Wildlife Division, in their October 18th, 2006 response letter, recommended that CL&P prepare and execute a vegetation management plan to maintain the foraging habitat as open area preferably grassland. CL&P and their Service Forester will consult with the CT Wildlife Division in responding to this request to maintain the foraging habitat around the Substation site as well as along the existing transmission line corridor.

K.8 Water Supply Area

The Project will not result in any adverse effects on public water supplies. According to the Town of Oxford, there are no public water supply wells within ¼-mile of the Property. Private wells that have been identified within ¼-mile of the Property are shown on Figure I-4. In the event that blasting is required for the construction phase of the Project, CL&P would evaluate the need to conduct pre-blast surveys and well inspections of nearby residences and businesses.

K.9 Scenic Areas and Visual Effects

The Substation is proposed to be built within an industrially zoned area of the Town of Oxford, and therefore future development around the Substation is anticipated to be relatively compatible with the Substation. Although much of the Property is surrounded by an existing vegetative buffer of forested uplands and wetlands, a Landscape Plan prepared by CL&P (Refer to Volume II, Appendix B, Project Plans) will mitigate for, to the extent feasible, potential views of the Substation by providing vegetative screening. CL&P has prepared a

visual simulation of the proposed Substation (Refer to Volume II, Appendix I, Visual Simulations) to depict the anticipated appearance of the Substation from Commerce Park Drive view to the north.

The Larkin Bridle Trail is located to the northwest of the Substation Property and approximately 400 feet from the footprint of the Substation. The section of the Larkin Bridle Trail closest to the Substation may be slightly affected by seasonal (winter months) views of some of the Substation facilities and transmission structures. The existing 81-foot high steel lattice towers on CL&P's existing right-of-way are partially visible from the Larkin Bridle Trail during "leaf-off" conditions. The existing dense forest growth between the Larkin Bridle Trail, and the sloping topography of the Substation site provide a natural buffer between the two areas. CL&P's Landscape Plan incorporates measures to minimize visual effects on the trail to the extent feasible taking into account the need to avoid creating hazards with overhead lines and the Substation electrical components within the Substation yard.

CL&P does not anticipate any adverse visual effects on the Jacks Hill Cemetery located to the east of the Property, as the Substation is to be constructed to the west side of the existing transmission line corridor away from the cemetery by over 600 feet. A forested upland and wetland provides a buffer between the cemetery and the Substation.

K.10 Historic and Archaeological Resources

In response to the CT SHPO's recommendation for a professional reconnaissance survey, Raber Associates, on behalf of CL&P, completed an archaeological reconnaissance in 2006 (see Volume II, Appendix G, Cultural Resources Reconnaissance Report) to locate any cultural resources with potential eligibility for the National or State Registers of Historic Places. Reconnaissance results indicated no eligible resources are present within the Substation site, and that no further investigations appear necessary. The reconnaissance

report was field with the CT SHPO for review. On December 11, 2006, The CT SHPO responded via e-mail (see Volume II, Appendix E, Agency Correspondence) to the electronic version of the final reconnaissance report received by their office indicating that the CT SHPO would draft and post a "no effect" determination upon receipt of two hard copies of the final reconnaissance report. CL&P has since filed two hard copies of the final reconnaissance report with the CT SHPO.

There will be no direct Project effects on the Jacks Hill Cemetery. Unless CL&P determines that any blasting for construction might disturb the historic railroad embankment/bridle trail, there will be no direct effects on this resource. CL&P will evaluate and address potential blasting effects, if it becomes necessary; however, based upon the geotechnical boring program competed by CL&P, including the advancement of 27 soil borings, CL&P is not anticipating blasting.

Due to dense tree cover and distance (over 600 feet), and the fact that virtually no trees will be removed between the existing transmission right-of-way and the cemetery, it is unlikely that the proposed Substation will be visible from the Jacks Hill Cemetery. No visual effects of any kind are anticipated for this resource.

The Substation may be slightly visible from the railroad embankment/bridle trail. There is an existing vegetated buffer of dense forested wetlands and forested uplands located between the Bridle Trail and the Substation site. Some of the structures proposed at the Substation may be slightly visible from the Bridle Trail during winter leaf-off conditions, however clear observation points to the Substation are obscured by the presence of existing trees and dense shrub understory. Preservation of the forested buffer located between the Bridle Trail and the Substation, in addition to CL&P's Landscape Plan, will mitigate any adverse visual

effects, to the extent feasible while realizing the need to avoid vegetation hazards to overhead lines and the Substation electrical components within the Substation yard.

K.11 Geology and Soils

Moderate earthwork would be required for construction of the Substation and access drive into the Substation. The upland till ridge located in the central portion of the Property would have to be slightly regraded to provide a relatively level surface on which to construct the Substation. In the event that blasting is required, CL&P would develop a blasting control plan in compliance with industry and CL&P standards. All disturbed areas outside of the Substation footprint and along the new access drive would be stabilized, restored and re-vegetated.

K.12 Floodplains

The Subject Property is not located within any mapped flood hazard area. Therefore no adverse effects on floodplains are expected.

K.13 Recreational Areas

The Larkin Bridle Trail is the only known recreational area located within ¼ mile of the Substation Property. Mature forested land exists at the northwestern portion of the Property between the Substation footprint and the trail itself. The Larkin Bridle Trail may provide seasonal (winter months) views of some of the upper portions of Substation facilities and transmission structures. As mentioned previously, CL&P's Landscape Plan incorporates measures to minimize visual effects on the trail to the extent feasible.

K.14 Noise

The levels of noise that would be generated by the Substation are projected to be below those levels allowed by Regulations of Connecticut State Agencies § 22a-69-3.5 for a Class C Emitter (Substation) to a Class C Receptor (Industrial Uses) of 70 dBA levels. Impulse

noise, though rare, would be generated from switching and circuit breaker opening and closing. The impulse noise levels would not exceed the levels permitted at the property line by Regulations of Connecticut State Agencies § 22a-69-3.2.

K.15 Lighting

The Substation yard would contain manually-operated lights affixed to the Substation terminal structures. The floodlights would be used to facilitate work at nighttime or during inclement weather. Additional lighting would be installed on the building structures within the Substation yard 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.

CL&P's design will accommodate the continued use of its transmission towers to support airport safety lighting for the Waterbury-Oxford Airport. Two new structures will be located alongside and lower than the existing marked towers, and the third new structure will be significantly below all other transmission facilities and proposed substation facilities in the area. The Waterbury-Oxford Airport has provided CL&P with a conceptual plan for its airport lighting approach. CL&P has designed the Substation to accommodate the airport lighting approach scheme to the extent feasible.

K.16 Other Surrounding Features

No significant environmental effect is anticipated on the facilities (i.e., residences, commercial and industrial properties) depicted on the attached Figures I-3 and I-4. The only potential effect on these surrounding features would be visual effects during construction and to a lesser degree during the operation of the Substation. No other effects on these areas are anticipated because all other facilities are located a sufficient distance from the Property and are currently well-screened by forested land.

L.0 MITIGATION MEASURES

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

L.1 Pre-Construction Considerations

Prior to the commencement of any construction activities, CL&P would prepare a Development and Management Plan ("D&M Plan"). The D&M Plan would include CL&P's *2005 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 control, spill prevention and control, construction staffing and hours, traffic control if necessary and restoration and landscaping after construction. The D&M Plan would also provide contact information should questions or concerns arise during the construction or operation of the Substation.

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

L.2 Construction Phase Activities

All construction activities would be conducted in accordance with the D&M Plan as approved by the Council. In the event that bedrock is encountered, excavation, drilling, or pneumatic hammer would be the preferred methods to remove rock. Although not anticipated, if extensive bedrock is encountered during construction, provisions for blasting would be considered and developed by CL&P, in accordance with controlled blasting techniques.

CL&P has sited and designed the Substation to minimize the extent of grading and earth work associated with construction of the Substation. However, during site preparation and installation of the Substation components, it would be necessary to temporarily stockpile soils within the Property. These stockpiles would be located at a minimum of 50 feet from the delineated wetland boundaries and would be covered and protected against runoff during storm events with erosion controls. Should soils be stockpiled for a period of 21 days or more, CL&P may temporarily seed or mulch the piles to ensure stability depending on weather and season.

The siting and design of the Substation provides for a significant setback from the Commerce Park Drive. Prior to earth work activities on the site, CL&P would install a temporary crushed stone apron, placed on geotextile fabric, at the junction of Commerce Park Drive. This stone apron would serve as an anti-tracking pad to minimize tracking of mud onto the public street. The driveway and Substation would be graded to direct stormwater runoff into the Property. Stormwater generated on the gravel access drive would be directed to the vegetated slopes and vegetated swales along the edges of the driveway. The remainder of the stormwater would infiltrate through the gravel base of the Substation or would be allowed to run off through vegetated uplands. No untreated stormwater would be discharged directly to wetlands or into the watercourse.

In regards to mitigation for the state-listed American kestrel, CL&P will install a minimum of two artificial nest boxes in accordance with the recommendations made by the CT Wildlife Division.

L.3 Post-Construction Features

Upon completion of construction activities, all exposed areas would be stabilized and revegetated. Upland areas would be restored with topsoil and seeded with a New England conservation/wildlife seed mixture that would provide for a permanent cover of grasses, forbs and wildflowers that provide soil stability as well as food and escape cover for wildlife. Areas temporarily disturbed within the wetland would be re-graded to establish the pre-construction contours and seeded with a New England "Wetmix" or equivalent. Erosion controls would remain in place until final site stabilization is achieved.

Although much of the Property provides vegetative buffers from surrounding features, CL&P's Landscape Plan further mitigates for any potential views of the Substation.

The effects on the existing habitats would be predominantly temporary in nature and would be mitigated through the restoration of disturbed areas and supplemental plantings. Additional details on these restoration activities and supplemental plantings are provided in the Landscape Plan (Refer to Volume II, Appendix B, Project Plans).

In response to the recommendation made by the CTDEP Wildlife Division, CL&P will monitor the American kestrel nest boxes for a period of three years between the months of March through July and provide the Division with a yearly report documenting the success rate of the nest boxes, measures taken to prevent/minimize predation on the nest boxes, and any other observations of significance. Further, the CT Wildlife Division, in their October 18th, 2006 response letter, recommended that CL&P prepare and execute a vegetation management plan to maintain the foraging habitat as open area preferably grassland. CL&P

and their Service Forester will consult with the CT Wildlife Division in responding to this request to maintain the foraging habitat around the Substation site as well as along the existing transmission line corridor.

L.4 Construction Sequencing

The general sequence of events that takes place during the construction of a substation includes:

- Placement of erosion and sedimentation control barriers;
- Removal of vegetation from the proposed fenced area and access drive;
- Construction of the access drive;
- Preparation of the Substation Site (cut, fill, grading);
- Stabilizing all slopes by loaming and seeding exposed soils with a conservation meadow seed mixture;
- Installing fence, substation foundations, buried conduits and the ground grid;
- Spreading trap rock;
- Installing electrical components and hardware;
- Installing tie-ins to transmission lines and distribution lines;
- Energizing substation;
- Completing site stabilization, landscaping and site restoration;
- Removing erosion control barriers upon completion of site stabilization.

M.0 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 fenced-in equipment. Substation-caused magnetic fields off the property 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 more than 150 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 Subject Property

At and beyond the boundaries of the Subject Property, the predominant existing sources of power-frequency electric and magnetic fields ("EMF") are the transmission lines (circuits 1575, 1585 and 1990). Two existing lines of CL&P transmission towers supporting these three circuits (Note: 1990 is a bundled circuit on the easterly line of lattice steel towers, and the 1575 and 1585 circuits occupy the westerly line of towers) run side-by-side across the Subject Property from north to south. There are no existing distribution lines on the Subject Property.

The highest levels of EMF along the property lines will be found on the northerly and southerly property lines beneath where the three transmission circuits cross over these property lines. Field levels drop off rapidly with distance from a source, so the levels of EMF at all points east and west of these transmission circuits will be much lower than the levels found beneath the circuits. Many locations along the property line of the Subject Property, particularly on its west side, are at relatively long distances from the transmission circuits, more than a few hundred feet, where EMF levels from these circuits drop to negligible levels.

Calculations were made of pre-project electric and magnetic fields produced by the existing transmission circuits along profile paths in the vicinity of the northerly property line and the southerly property line at Commerce Park Drive which cross beneath the transmission circuits. [Refer to Figure M-1 for the location of these profile paths.] Per standard practice, these calculations assumed balanced three-phase line currents in the transmission circuits, equal phase angles and predominant directions for the transmission circuit currents, level

terrain, and bottom 115-kV line conductor heights above grade which are typical for the location where the conductors cross over these property lines. For electric fields, bare terrain is also assumed. Electric fields will be lower at ground level if the terrain holds vegetation or other objects which will partially shield electric fields from the line.

All calculations of electric and magnetic fields were made assuming that the transmission circuits are the only sources of such fields on the Subject Property.

Projected peak line currents in the year 2013, determined by system power-flow model simulations, were used for these calculations. Other assumptions used in the system power-flow model were ISO-NE's forecast system summer peak load in 2013, no transmission circuit outages, 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 2013, 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 in 2013. These choices were made for compliance with Section IV of the Council's draft 2006 "Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Facilities in Connecticut". Graphical representations of the calculation results are found in Figures M-2 through M-7.

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

The fence of the proposed Substation is more than 100 feet at its closest point from any 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 the property lines. However, there will be changes to the existing electric and magnetic field levels at points on

a property line of the Subject Property due to the following three factors: 1) physical changes will be made to the 1575 transmission line circuit to interconnect it with the Substation; 2) the Substation and associated distribution load shifts will cause changes to the currents flowing on the transmission circuits; and 3) new underground distribution circuit getaway cables from the Substation will cross under property lines.

New 115-kV line spans (i.e., "substation entry spans") will be constructed to loop the existing 1575 transmission circuit in and out of the Substation. This change will alter the configuration and spacing of the 115-kV line conductors of this circuit in the vicinity of the north property line where it meets the existing CL&P right-of-way. This will lead to changes in the electric and magnetic fields along the north property line for a short distance on either side of the transmission lines. This change will be in addition to changes in magnetic field levels caused by changes in currents on the transmission circuits.

All three transmission circuits at this location experience relatively light power transfers because of their location within the transmission network. The interconnection of Oxford Substation and associated load shifts to it will primarily affect current flows over the 1575 circuit. CL&P's model projections for the peak circuit currents in future years are all below 300 amperes.

Calculations were made of pre-project electric and magnetic fields produced by the existing transmission circuit along the profile paths in the vicinity of the northerly and southerly property lines. Per standard practice, these calculations assumed balanced three-phase line currents in the transmission circuits, equal phase angles and predominant directions for the transmission circuit currents, level terrain, and a bottom 115-kV line conductor height above grade which is typical for the location where the conductors cross over the property line. For electric fields, bare terrain is also assumed. Electric fields will be lower at ground level if the

terrain holds vegetation or other objects which will partially shield electric fields from the line. Post project, the line-conductor span crossing over the westerly property line will be in a vertical configuration, and the line-conductor span crossing over the easterly property line will be in a transition from a vertical configuration to delta. For simplified modeling, the line-conductor configuration over the easterly property line was modeled as delta.

These calculations of electric and magnetic fields were made assuming that these circuits are the only source of such fields on the Subject Property. Contributions to EF and MF from distribution circuits crossing or close to the property line are not included.

Projected peak line currents in the year 2013, determined by system power-flow model simulations, were used for these calculations. Other assumptions used in the system power-flow model were ISO-NE's forecast system summer peak load in 2013, no transmission circuit outages, Oxford 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 2013, 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 2013. These choices were made for compliance with Section IV of the Council's draft 2006 "Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Facilities in Connecticut". Graphical representations of the results are found in Figures M-2 through M-7, overlaying the results for the pre-project line configuration for ease of comparison.

The highest levels of EMF will continue to be found on the northerly and southerly property lines directly beneath where the 115-kV transmission circuit conductors cross over these property lines. The results depicted in Figures M-2 through M-7 demonstrate that EMF levels beneath and close to the 115-kV circuits along the northerly property line will increase under both of the load conditions, and EMF levels beneath and close to the 115-kV circuits along the southerly property line will decrease under both of the load conditions.

The highest magnetic field level along the northerly property line, post-project, will be 39.69 mG under the modeled peak-load condition and 25.81mG under the modeled peak-day average load condition. The highest electric field level in this same location will be 0.97 kV/m.

The highest magnetic field level along the southerly property line, post-project, will be 10.91mG under the modeled peak-load condition and 7.09 mG under the modeled peak-day average load condition. The highest electric field will be 1.08 kV/m.

As depicted on Figures M-2 through M-7, the EMF levels will continue to drop off rapidly with distance from the transmission line sources, so the levels of EMF at all points along a property boundary to the east and west of the transmission circuits will be much lower than the levels found beneath the circuits. Beyond distances of not more than 200 feet from the center of the outermost circuit, EMF levels will remain at very low background or negligible levels.

Underground 13.8-kV distribution cables will exit the Substation southerly to Commerce Park Drive, under the Substation access drive. Current flows over these distribution cables will produce magnetic fields along this property line, perhaps extending to a distance of 50 feet to either side of the cable crossing of the property line. However, this is also an area beneath

the 115-kV transmission circuits, so the presence of the distribution cables here will simply alter the transmission line's magnetic field profile.

Measurements of Electric and Magnetic Fields

Measurements of electric and magnetic fields were taken on the Subject Property on September 21, 2006. The measurement results are plotted on two attached graphs, one for magnetic fields and the other for electric fields. [Refer to Figures M-8 and M-9] Per an industry standard, these measurements were made at 1 meter above grade over a path on the Subject Property that is perpendicular to the existing transmission lines. The result is called a lateral profile. This profile extends to a distance of 150 feet easterly of the centerline of the easterly row of line towers, and to a distance of 160 feet westerly of the centerline of the westerly row of line towers. The locations of the centerlines of each row of towers are marked on the graphs. The highest magnetic field level recorded was 9.3 mG, and the highest electric field recorded was 1.19 kV/m.

The specific lateral profile path on the Subject Property was one where the terrain was open and reasonably level and where the conductor heights above grade were typical for this area. This path is not in the vicinity of either of the northerly or southerly property lines. Other lateral profile locations would pass under the transmission lines where the conductor heights above ground are different, and this difference would cause the measurement results to be different, particularly at distances beneath and closer to these lines.

The magnetic field measurement results represent magnetic field levels recorded for a specific point in time, produced by the set of transmission 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 on September 21, 2006, 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 Subject Property.

Summary

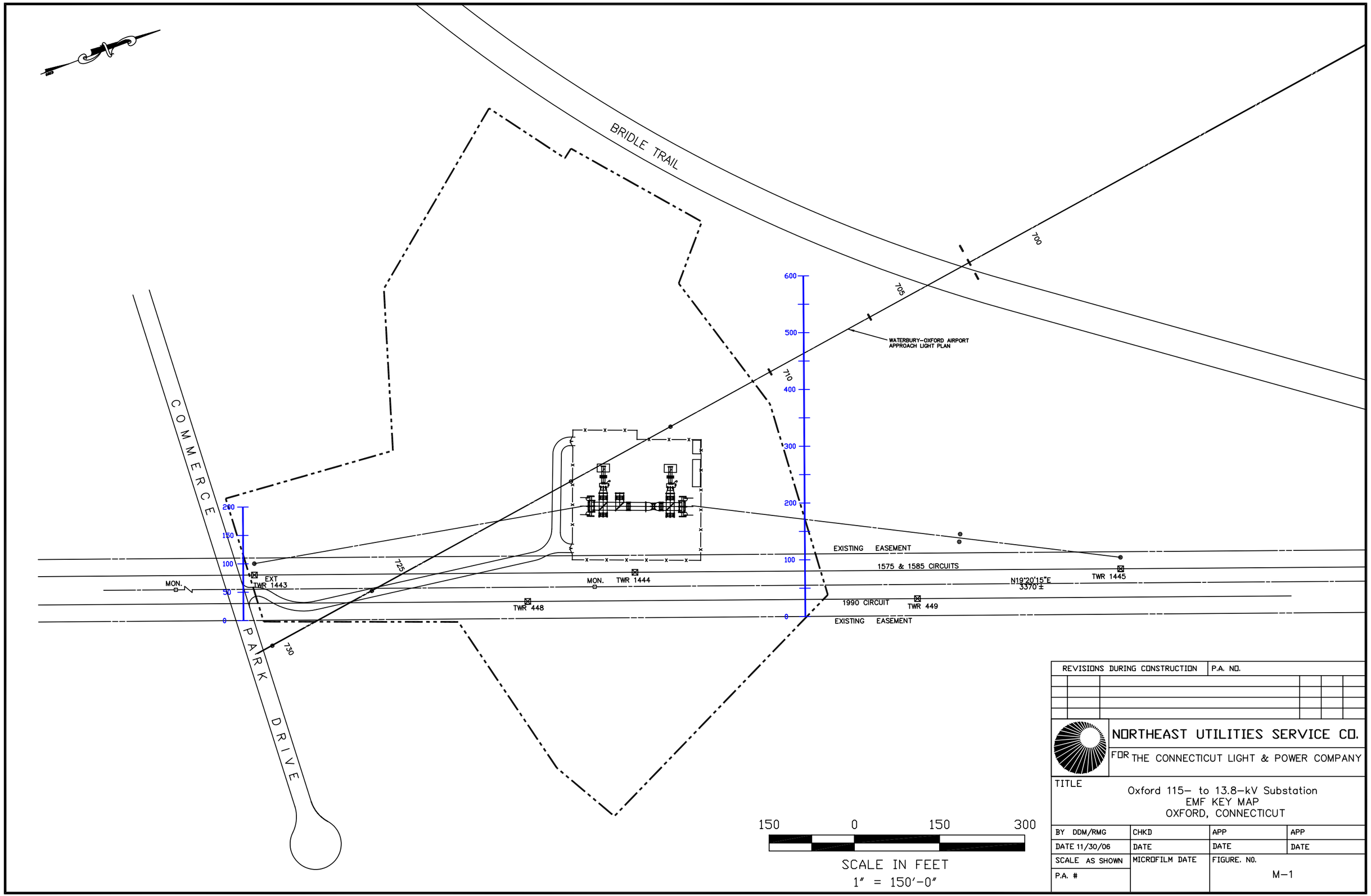
Consistent with the Connecticut Siting Council's Electric and Magnetic Field Best Management Practices for the Construction of Electric Transmission Facilities in Connecticut, the design of the Substation will incorporate field management practices as follows:

- the Substation has been located very 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
- new 13.8-kV distribution lines will exit the Substation underground with close circuit spacings and conductor-phase spacings
- 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 Institute of Electrical and Electronic Engineers ("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:

	EF (kV/m)	MF (mG)
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.



REVISIONS DURING CONSTRUCTION	P.A. NO.

NORTHEAST UTILITIES SERVICE CO.

FOR THE CONNECTICUT LIGHT & POWER COMPANY

TITLE

Oxford 115– to 13.8–kV Substation
EMF KEY MAP
OXFORD, CONNECTICUT

BY DDM/RMG	CHKD	APP	APP
DATE 11/30/06	DATE	DATE	DATE
SCALE AS SHOWN	MICROFILM DATE	FIGURE. NO.	
P.A. #		M–1	

Figure M-2: MAGNETIC FIELDS UNDER AVERAGE PEAK-DAY CONDITIONS, NORTH OF OXFORD SUBSTATION

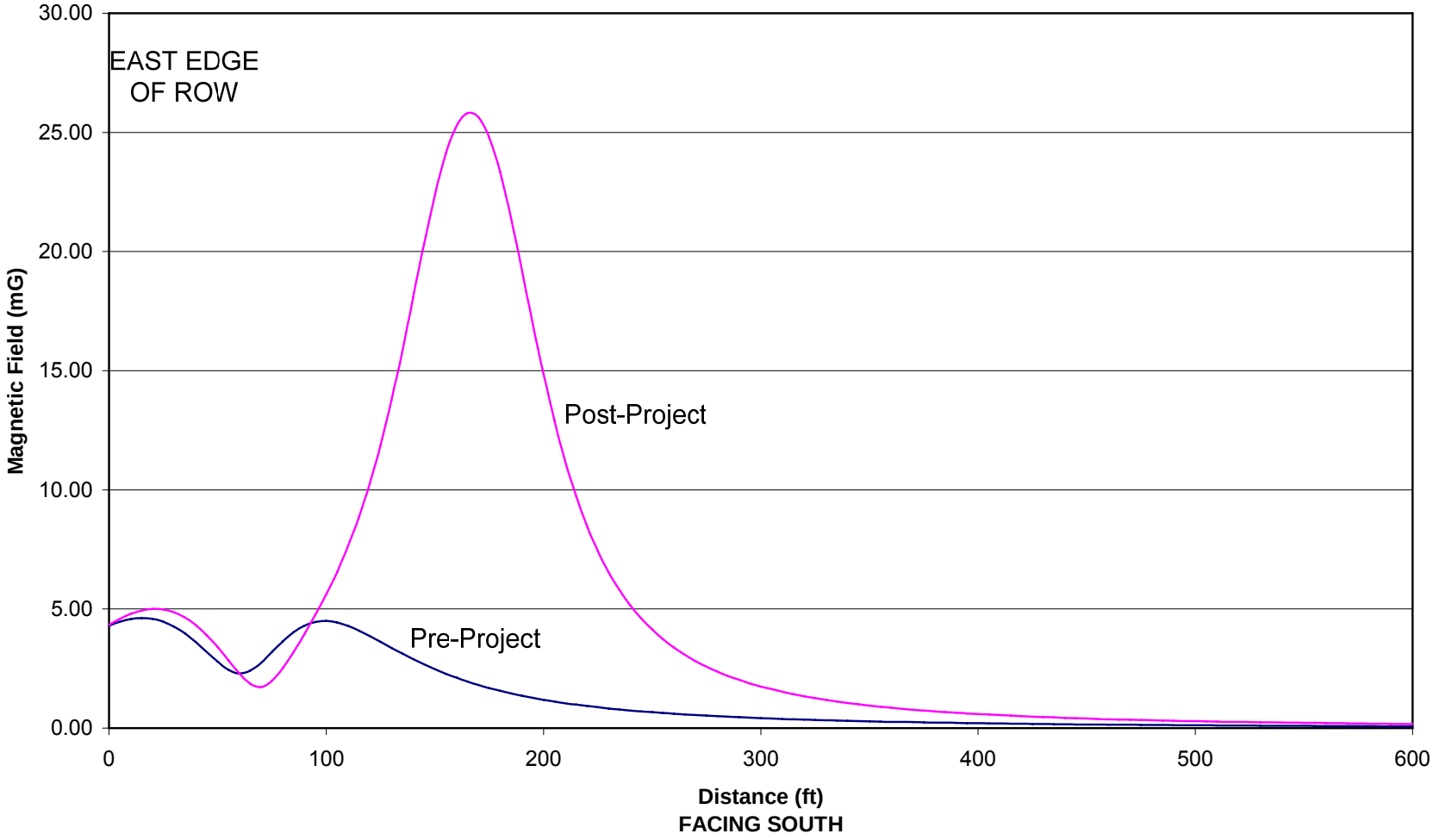


Figure M-3: MAGNETIC FIELDS UNDER PEAK LOAD CONDITIONS, NORTH OF OXFORD SUBSTATION

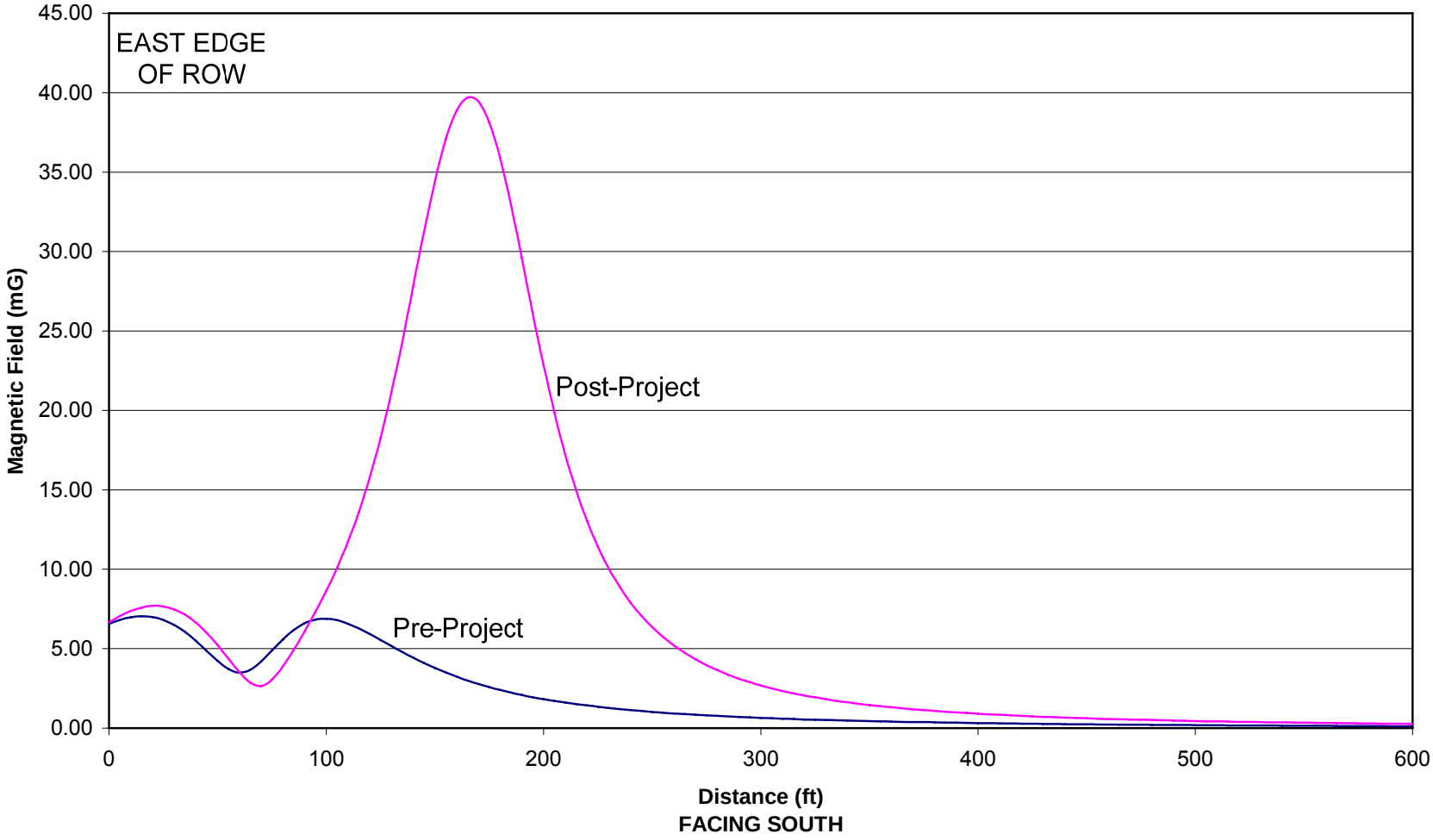


Figure M-4: ELECTRIC FIELDS, NORTH OF OXFORD SUBSTATION

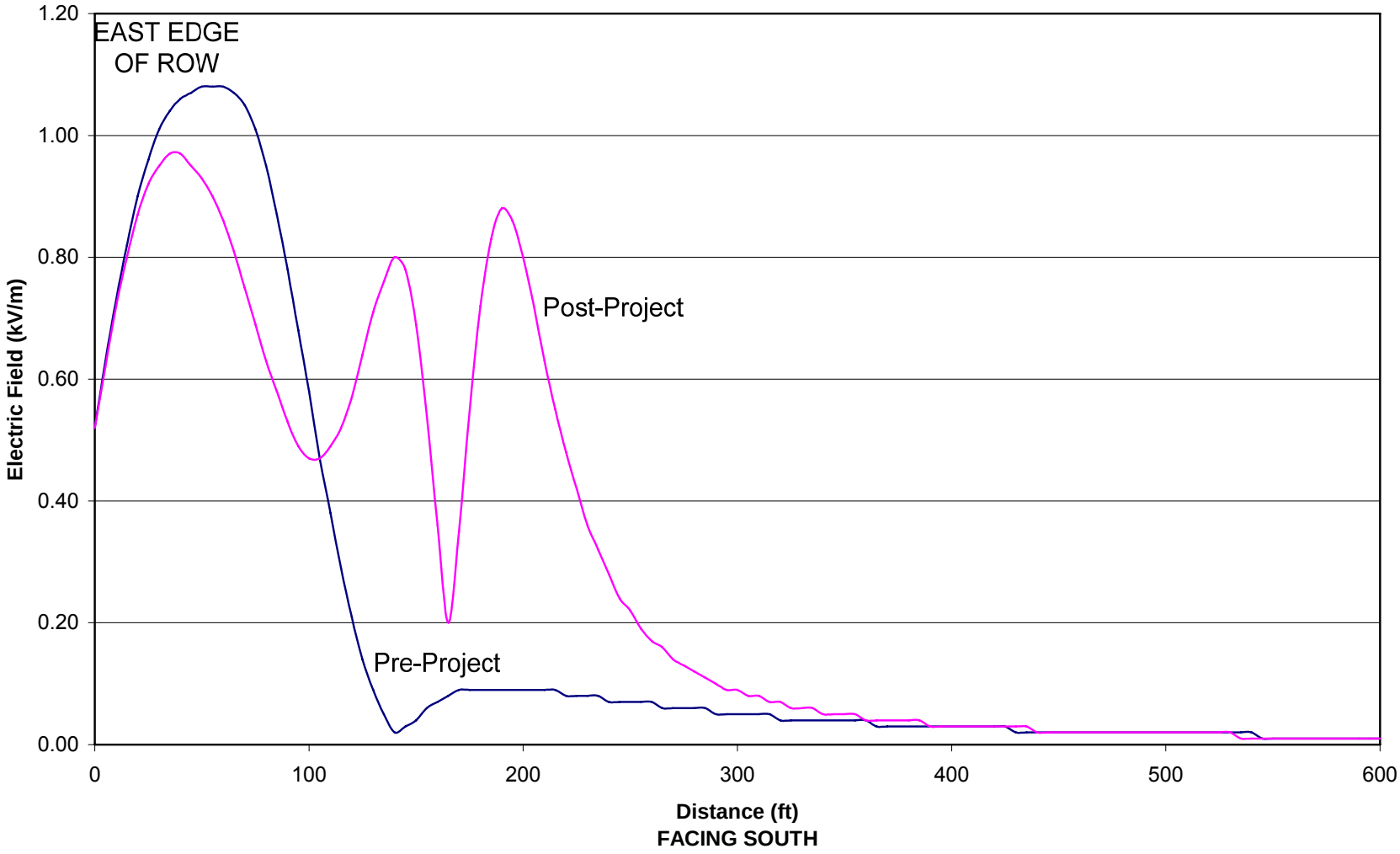


Figure M-5: MAGNETIC FIELDS UNDER AVERAGE PEAK-DAY CONDITIONS, SOUTH OF OXFORD SUBSTATION

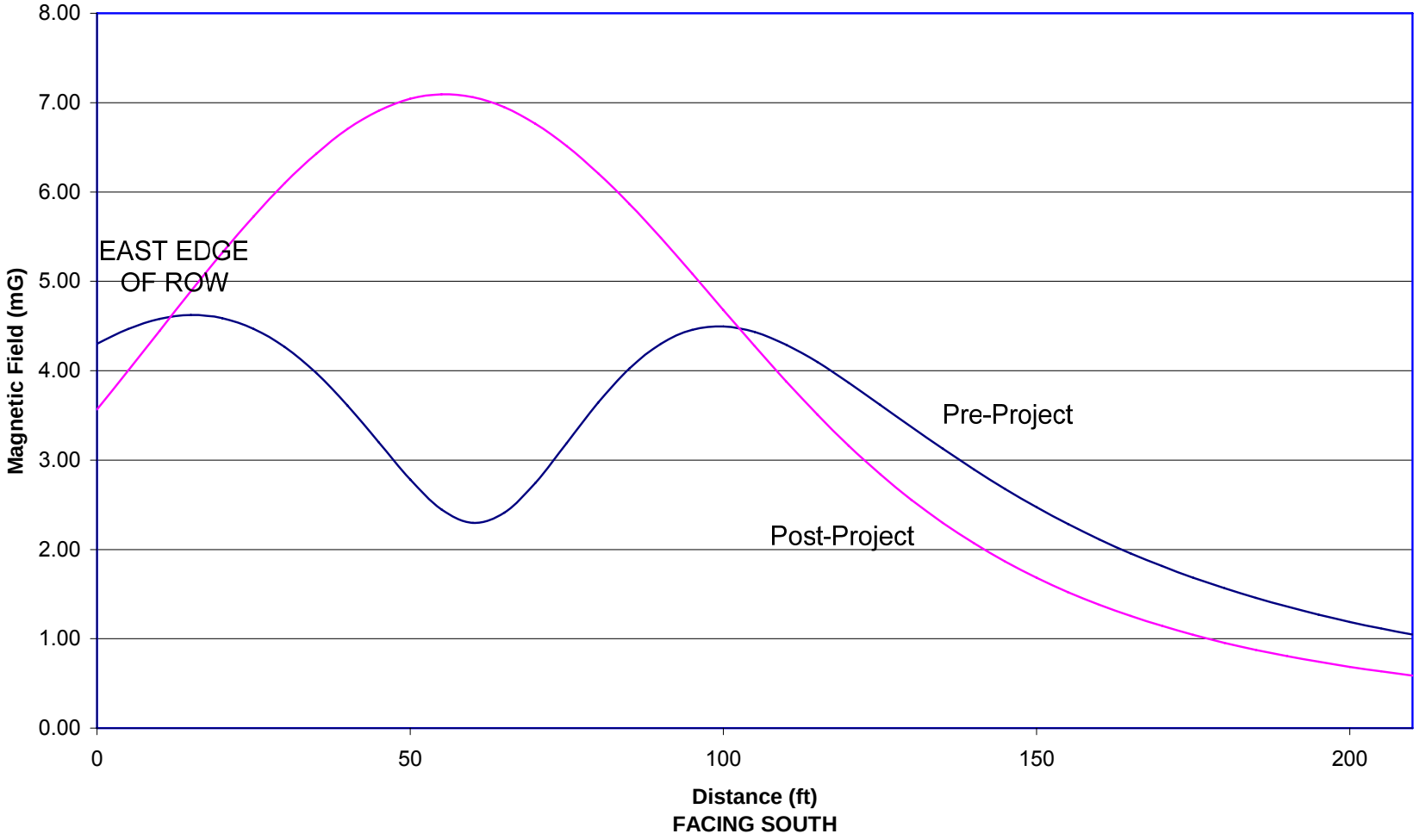


Figure M-6: MAGNETIC FIELDS UNDER PEAK LOAD CONDITIONS, SOUTH OF OXFORD SUBSTATION

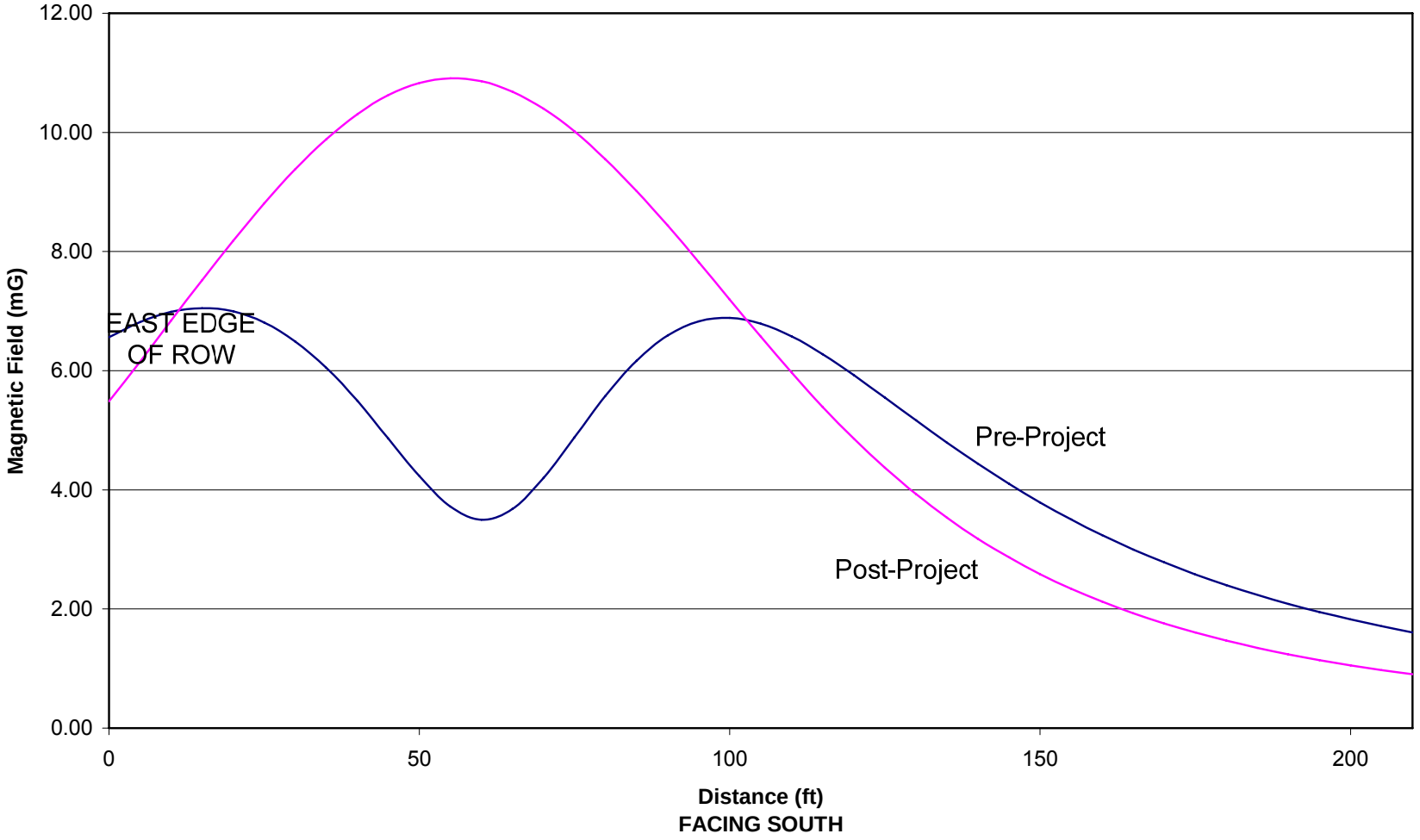


Figure M-7: ELECTRIC FIELDS, SOUTH OF OXFORD SUBSTATION

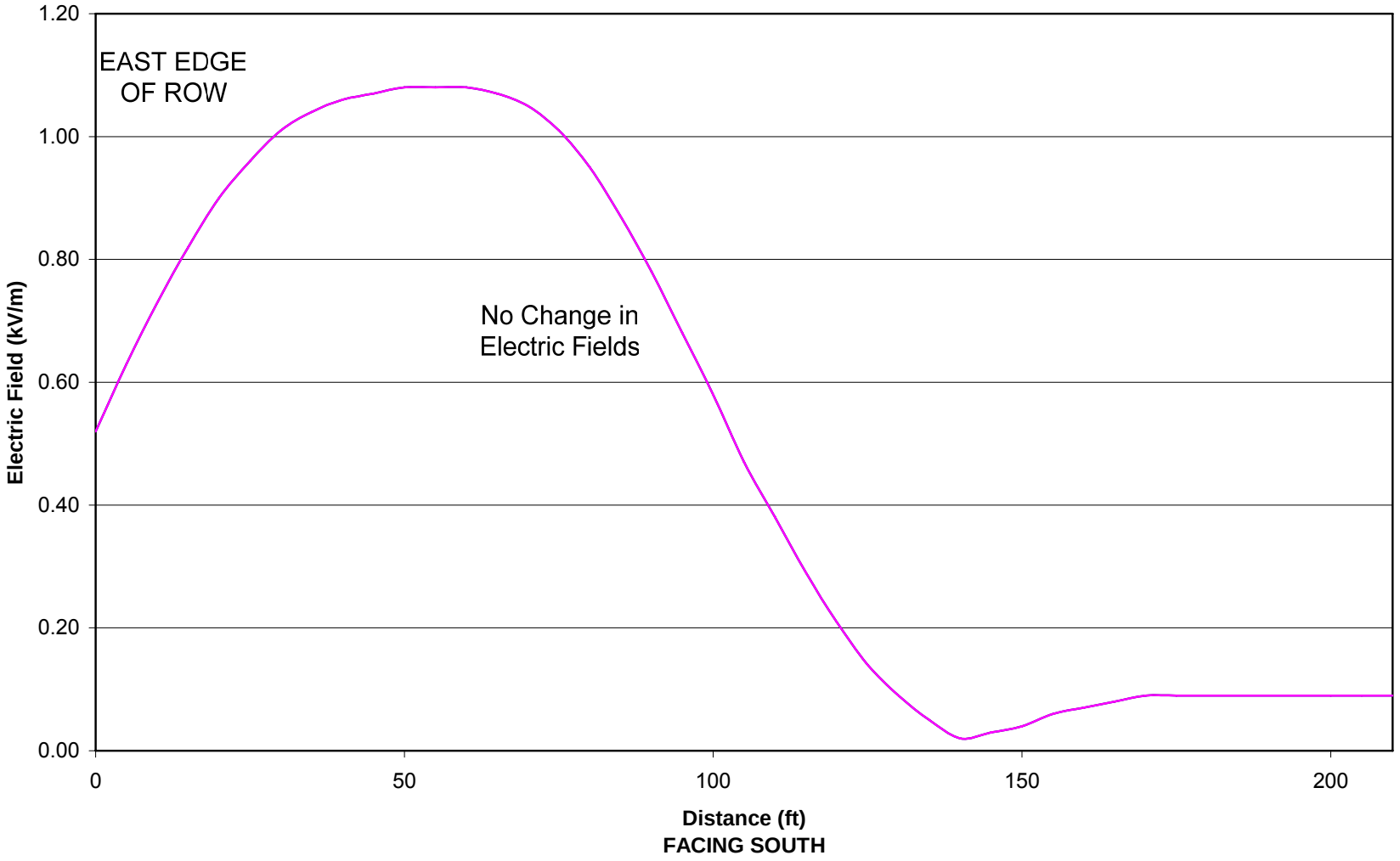


Figure M-8: OXFORD SUBSTATION PROPERTY
MAGNETIC FIELD MEASUREMENTS, SEPTEMBER 21, 2006

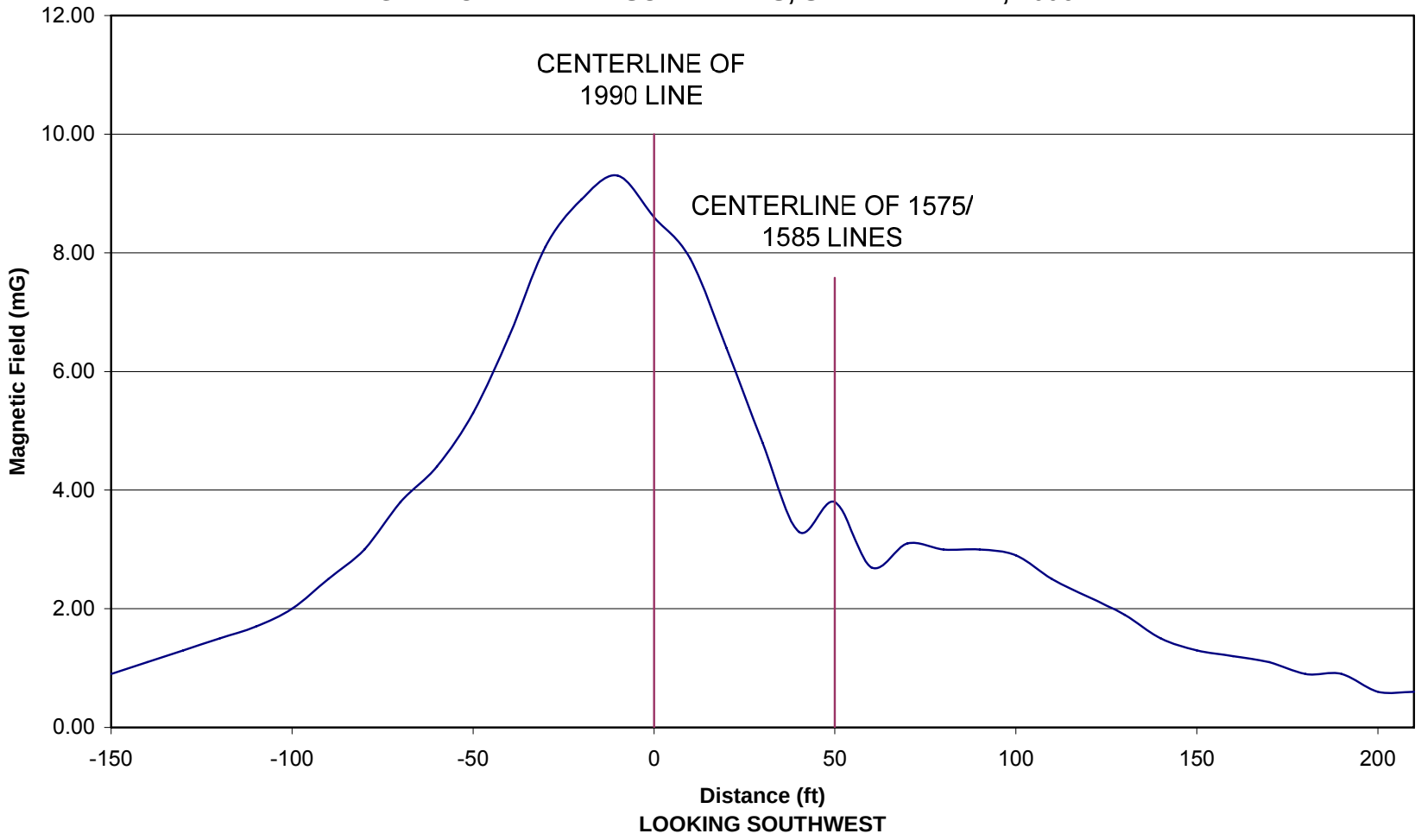
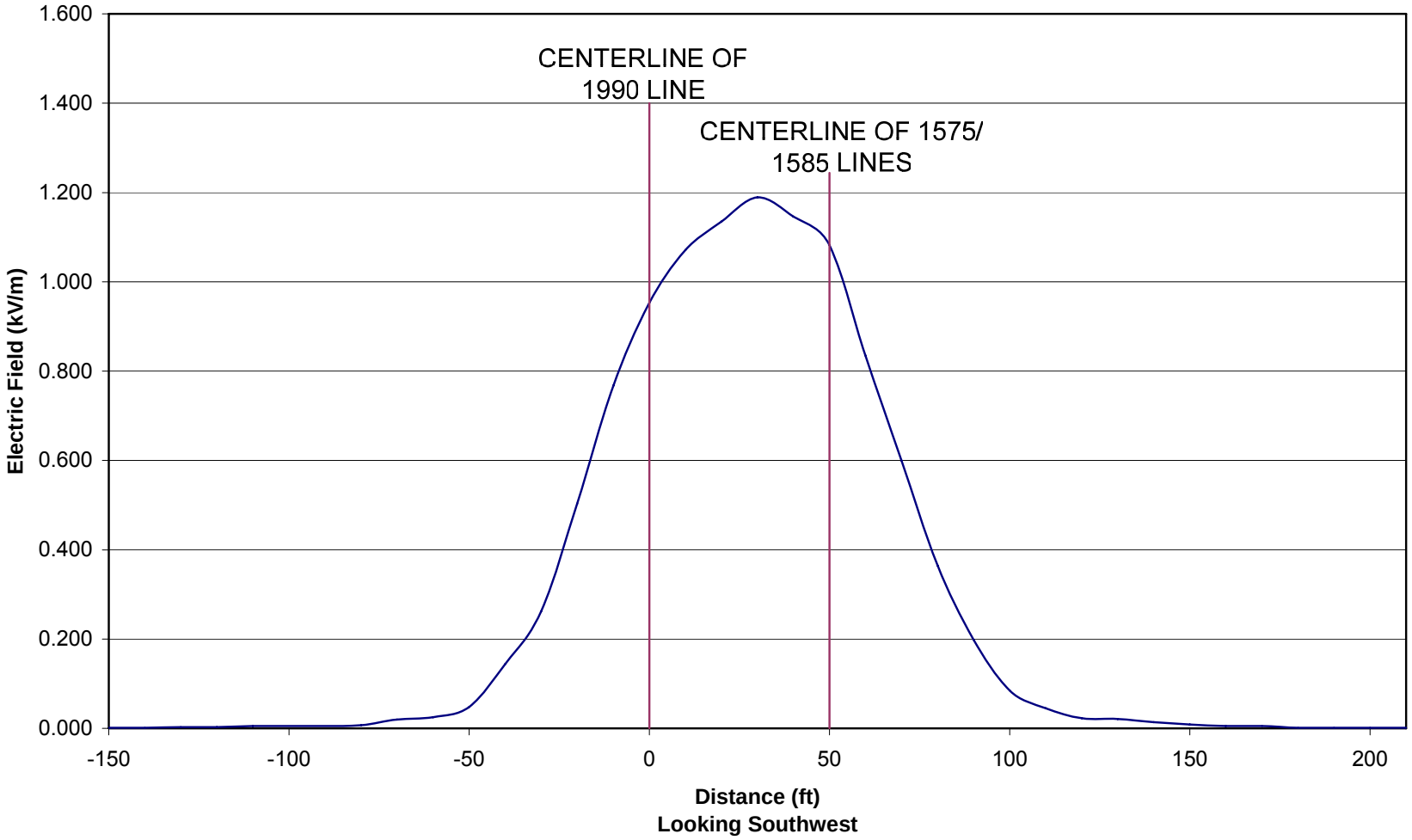


Figure M-9: OXFORD SUBSTATION PROPERTY
ELECTRIC FIELD MEASUREMENTS, SEPTEMBER 21, 2006



M.2 Site Security

A 7-foot high chain-link fence topped by one foot of three strands of barbed wire would enclose the Substation yard to prevent unauthorized access to the site. A locked gate would be installed at the entrance to the access drive off of Commerce Park Drive. The Substation yard would also be gated and locked. All gates would be padlocked at the end of the workday during the construction phase and at all times after the Substation is in-service. Appropriate signage would be posted at the Substation alerting the general public of the high voltage facilities 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 Substation equipment to alert CL&P of any abnormal or emergency situations.

M.3 Traffic Considerations and Hours of Operation

Construction traffic would be localized and short term and will not affect local traffic. Access to the site will be made via Route 67, Christian Street and Commerce Park Drive. Post-construction site conditions would not significantly affect existing traffic patterns. Once construction of the Substation is complete, the Substation would be remotely operated, with personnel on site only for periodic inspections, maintenance and emergency work.

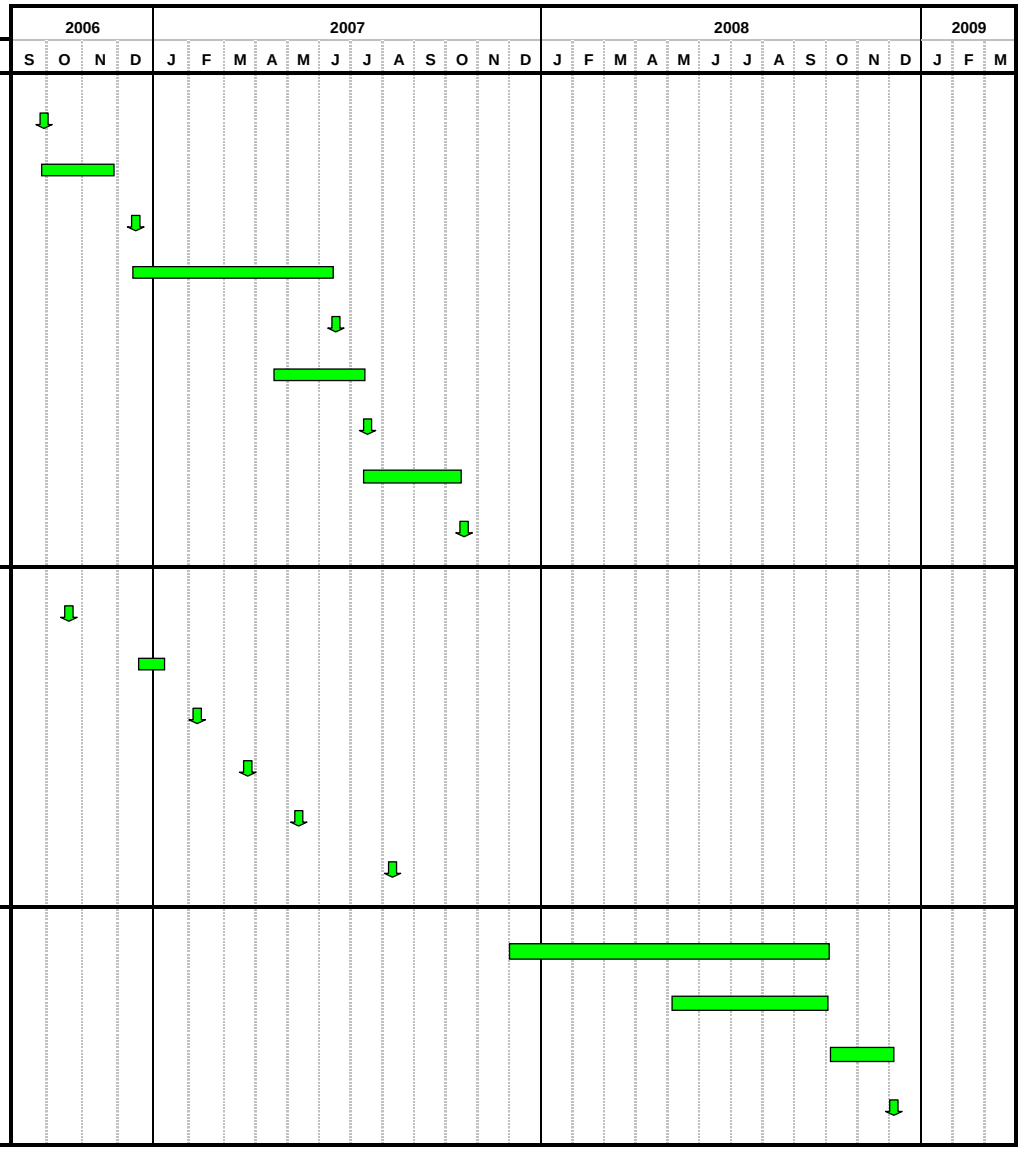
N.0 GENERAL PROJECT SCHEDULE

The following bar chart provides a generalized overall Project schedule for the construction of the Substation, installation of the transmission structures, and Substation testing and commissioning. The construction of the Substation is anticipated to begin in November 2007 with a completion date and in-service date of December 2008.

Representative Project Schedule for Oxford Substation

15-Dec-06

Activity	Start	Finish
Connecticut Siting Council Process [1]	5-Jul-06	29-Nov-06
Submit Municipal Consultation Filing (MCF)		29-Sep-06
Municipal Consultation Period	29-Sep-06	28-Nov-06
Submit Application to CT Siting Council		15-Dec-06
CSC Review Process	15-Dec-06	15-Jun-07
CSC Decision Issued		18-Jun-07
Prepare D&M Plan	16-Apr-07	16-Jul-07
Submit D&M Plan to CSC		16-Jul-07
CSC D&M Plan Review Process	16-Jul-07	16-Oct-07
CSC Approval of D&M Plan		16-Oct-07
CT Energy Advisory Board (CEAB) Process [2]	2-Oct-06	10-May-06
CEAB Provides Public Notice		17-Oct-06
CEAB Prepares and Issues RFP	18-Dec-06	8-Jan-07
RFP Deadline		7-Feb-07
CEAB Issues Report to CSC (if RFP response received)		26-Mar-07
Third Party CSC Application (if any)		10-May-07
CSC Schedules Hearing		10-Aug-07
Construction Period	4-Sep-07	1-Dec-08
Substation Site Work & General Construction	17-Dec-07	3-Oct-08
Substation Electrical Construction	5-May-08	3-Oct-08
Substation Testing & Commissioning	6-Oct-08	8-Dec-08
Substation In-Service Date		8-Dec-08



Notes:

1. CSC schedule and dates shown are tentative, and may be affected by the CEAB process (i.e., if RFP responses and/or a 3rd Party CSC Application is submitted, the schedule illustrated here will require revisions).
2. CEAB schedule and dates are provided for reference only.

Legend:

Proposed Milestone

Proposed Activity

O.0 GOVERNMENT OBTAINED APPROVALS

Table O-1 identifies the required permits and approvals applicable to the Substation Project. Pursuant to Conn. Gen. Stat. § 16-50*l*(e), the Municipal Consultation Filing ("MCF") was completed and delivered to the Town of Oxford Chief Elected Official on October 2, 2006, beginning the 60-day municipal consultation process. Prior to the MCF process, CL&P representatives and Town officials have had ongoing discussions about the need for a new substation to better serve the residents of Oxford and surrounding communities as well as to provide capacity for load growth within the Town. In 2005, August A. Palmer, III, First Selectman for the Town of Oxford, enthusiastically supported the acquisition of the Substation Property during the proceedings before the Council in Docket No. 304. The Council acknowledged the Town's support in its Findings of Fact (See Volume II, Appendix C, FOF #10) and approved the acquisition of the Property, which CL&P purchased on October 31, 2005.

In 2006, Mr. Palmer provided CL&P with a letter of support for the Project dated August 15th. In addition, after the MCF filing with the Town, the Board of Selectmen adopted a resolution supporting the Project (See Volume II, Appendix K, Government Approvals Obtained).

Pursuant to Conn. Gen. Stat. § 16-50x(d), CL&P consulted with the Oxford Conservation Commission/ Inland Wetlands Agency ("CC/IWA") and the Planning and Zoning Commission ("P&Z") as to the location of the Substation. CL&P filed an application with the CC/IWA on August 7, 2006. At its regular meeting on August 14, 2006 after a presentation of the Project highlights by CL&P, the CC/IWA unanimously approved the conceptual location for the Substation with conditions. (See Volume II, Appendix K).

CL&P also filed an application with the P&Z on August 14, 2006. At its regular meeting on August 17, 2006, the P&Z unanimously approved the location of the Substation after a presentation by CL&P. (See Volume II, Appendix K).

TABLE O-1
PERMITS APPLICABLE TO THE OXFORD SUBSTATION PROJECT

Agency	Permit	Date Submitted/ Anticipated Submittal	Date Received/ Anticipated Receipt	Location
Federal				
Federal Aviation Administration	Notice of Proposed Construction under 14 CFR Subpart 77,	January 2007		Will be provided to CSC when filed
U.S. Army Corps of Engineers	PGP Category 2 Permit	January 2007		Will be provided to CSC when filed
U.S. Fish and Wildlife Service	Clearance under the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 460 et seq.)	November 27, 2006		CSC Application Appendix E, Agency Correspondence
Connecticut				
Connecticut Siting Council	Statement of Intent to Acquire Property under Connecticut General Statutes § 16-50z (a) and § 16-50z-1	November 10, 2004		CSC Application Appendix C, CSC Documentation
Connecticut Siting Council	Certificate of Environmental Compatibility and Public Need under Connecticut General Statutes § 16-50*l*(a)(1)	December 15, 2006		
Connecticut Natural Diversity Data Base	T&E clearance under state Endangered Species Act (Connecticut General Statutes § 26-303 to § 26-315)	Consultation initiated on August 9, 2006	October 18, 2006	CSC Application Appendix E, Agency Correspondence

TABLE O-1
PERMITS APPLICABLE TO THE OXFORD SUBSTATION PROJECT

Agency	Permit	Date Submitted/ Anticipated Submittal	Date Received/ Anticipated Receipt	Location
Connecticut Historic Preservation Office	Cultural Resource Consultation under Section 106 of the National Historic Preservation Act	Consultation initiated on August 10, 2006		CSC Application Appendix E, Agency Correspondence
Connecticut Department of Transportation	Consultation with Commissioner regarding construction within ½ mile of public airport runway	January 2007		Will be provided to CSC when filed
Local				
Town of Oxford	Municipal Consultation Filing under Connecticut General Statutes § 16-50/(e)	October 2, 2006		CSC Application Bulk Filing #1
Town of Oxford Conservation Commission / Inland Wetlands Agency	Local Approval Application under Connecticut General Statutes § 16-50 x(d)	August 7, 2006	August 14, 2006	CSC Application Bulk Filing #1
Town of Oxford Planning and Zoning Commission	Local Approval Application under Connecticut General Statutes § 16-50 x(d)	August 10, 2006	August 17, 2006	CSC Application Bulk Filing #1

P.0 BULK FILING OF MUNICIPAL DOCUMENTS

A bulk filing of municipal regulations and documents that were submitted to the Town of Oxford 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 Oxford Conservation Commission/Inland Wetlands Agency pursuant to Conn. Gen. Stat. § 16-50x(d) Location Review;
- Application to the Town of Oxford Planning and Zoning Commission pursuant to Conn. Genn. Stat. § 16-50x(d) Location Review;
- Town of Oxford Inland Wetlands and Watercourses Regulations;
- Zoning Regulations for the Town of Oxford, Connecticut, and accompanying amendments;
- Oxford Plan of Conservation and Development; and
- Municipal Consultation Filing.

Q.0 ADMINISTRATIVE NOTICE, PUBLIC AND ABUTTERS NOTICE, SERVICE AND OTHER FILING REQUIREMENTS

Pursuant to the Connecticut Siting Council requirements, CL&P is furnishing one original and twenty (20) copies of the Application, along with an electronic version of the Application. This Application is presented based on the Council's Application Guide for Electric Substation Facility, dated September 19, 2000, to assist applicants in filing for a Certificate of Environmental Compatibility and Public Need for the construction of an electric substation as defined in Conn. Gen. Stat. § 16-50i (a)(4).

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

Q.1 Administrative Notice

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

- Connecticut Siting Council Electric and Magnetic Field Best Management Practices, February 11, 1993;
- Connecticut Siting Council Review of the Connecticut Electric Utilities Ten-Year Forecast of Loads and Resources, 2006;
- Connecticut Guidelines for Soil Erosion and Sediment Control, 2002;

- Connecticut General Statutes § 16-243 and §§ 16-11-134 and 135 of the Regulations of Connecticut State Agencies (and by reference, the National Electrical Saftey Code ANSI C2, 2002 Edition);

- 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; and

- ISO approval per Section I.3.9 of the ISO New England Inc. Transmission, Markets and Service Tariff for the Oxford 26N Substation.

Q.2 Pre-Application Process

CL&P met with Town of Oxford representatives prior to distribution of the MCF. On October 2, 2006, the MCF was delivered to the Chief Elected Official of the Town of Oxford thereby initiating the formal municipal consultation process. During this period, CL&P sought comment from local government representatives on the Project.

Q.3 Application Filing Fees

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

Estimated Construction Cost	Fee
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 filing fee schedule and the estimated construction cost for the Project presented in Section F, a check for the Council's Application Fee in the amount of $11,100.00 payable to the Treasurer, State of Connecticut accompanies this Application.

Pursuant to Conn. Gen. Stat. §16-50l (a) (1), CL&P also encloses a separate check in the amount of $25,000.00 payable to the Treasurer, State of Connecticut for the Municipal Participation Fee.

Q.4 Proof of Service

This Application was served on the following:

- The chief elected official/chief executive officer, and where applicable, 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;
- The regional planning agency;
- The State Attorney General;
- Each member of the Legislature in whose district the facility is proposed;
- Any federal agency which has jurisdiction over the proposed facility;
- The State Departments of 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; and
- Connecticut Energy Advisory Board.

The names of government officials and agencies on whom a copy of the Application is being served (the “Proof of Service”) are provided in Exhibit 1 (Affidavit and Service List) of this Volume.

Q.5 Public Notices

Notice of the Application (the "Notice") was published at least twice prior to the filing of the Application in newspapers 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:

- Connecticut Post on November 30, 2006 and December 1, 2006;

Copies of the legal notices ("Public Notices") are provided in Exhibit 1 of Volume I.

Q.6 Notice to Owners of Property Abutting Substation Site

Notice of the Project was provided to abutters to the Substation and nearby owners. That notification provided via certified mail, return receipt requested.

An Affidavit regarding the notice to owners of properties abutting the proposed Substation and nearby, and a listing of abutter names and addresses ("Affidavit of Abutters Legal Notice" and "List of Abutting and Nearby Property Owners of Land of CL&P") are provided in Exhibit 1.

R.0 OTHER RELEVANT INFORMATION

R.1 Filing with the Connecticut Energy Advisory Board

As required by Conn. Gen. Stat. § 16-50*l*(e), CL&P filed the same information submitted to the Town of Oxford in the MCF with the Connecticut Energy Advisory Board ("CEAB") on October 2, 2006, the same day that it was provided to the Town of Oxford. Such information was filed in accordance with instructions received from CEAB representatives. Copies of the receipts for the CEAB deliveries are provided in Volume II, Appendix L.

In addition, at the CEAB's request, CL&P representatives have communicated with Mr. Richard Hahn of LaCapra Associates, the CEAB's consultant, to discuss the Project need and to answer questions about the Project.

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 businesses.

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

Autotransformer: A transformer with a single winding per phase in which the lower voltage is obtained by a tap on the winding. (see transformer).

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

Arrester: Protects lines, transformers and equipment from transient overvoltages due to lightning and switching 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 electric 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. Performs the same function as a circuit breaker in a home.

CL&P: The Connecticut Light and 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 current to flow.

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

Conversion: Change made to an existing power 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.

CONVEX: Connecticut Valley Electric 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 electric power 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.

D&M Plan: Development and 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 (EF): 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 (SF_6).

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 the frequency of alternating current; one cycle/second.

ICNIRP: International Commission on Non-ionizing Radiation Protection.

IEEE: Institute of Electrical and Electronic Engineers.

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

Magnetic Flux Density: Level of magnetic field.

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

MOD: Motor-Operated Disconnect switch.

MVA: Megavolt Ampere. Measure of electrical capacity equal to the product of the voltage, the current and the square root of 3 for three-phase systems. 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 conductor 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 of existing structures.

Right-of-way: ROW; corridor of land within which a utility company holds legal rights necessary to build, operate and maintain power lines.

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.

SF_6: 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, power transformers, line terminal structures, and other equipment enclosures and structures. Voltage change, adjustments of voltage, monitoring of circuits and other service functions take place in this installation.

Switching Station: Same as Substation except with no power transformers. 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, used particularly for distribution voltages where several such devices may be contained in a common metalclad enclosure. 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: An insulated fitting used to connect underground cables to overhead lines.

PGP: Programmatic General Permit

Power 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. Power transformers have a high voltage and a low voltage winding for each phase.

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

Upgrade: See Reinforcement.

USACE: United States Army Corps of Engineers

USFWS: United States Fish and Wildlife Service

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

V/m: Volts per meter; kilovolt per meter; 1000 V/m = 1 kVm.

Voltage: A measure of the push or force which transmits electricity. Usually given as the line-to-line root-mean square magnitude for three-phase systems.

Voltage Collapse: A condition where voltage drops to unacceptable levels and cascading interruptions of transmission system elements occur..

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 jurisdiction 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.

Exhibit 1

Administrative Filing Requirements

Legal Notice

CONNECTICUT POST

Certificate of Publication

Classified Advertising Department

410 State Street, Bridgeport, CT 06604
203-330-6213, 800-423-8058, ext. 6213
Fax 203-384-1158

This is to certify that the advertisement of Cronin & Company – Northeast Utilities

was published in the Connecticut Post newspaper on 11/29 and 12/1/06
(*Month, Day, Year*)

Signed Maureen O'Connor
(*Advertising Representative*)

Ad Number 1078237 Account/Telephone Number 01856

Purchase Order Number : e-mail

Subscribed and sworn to before me

This 7th day of December 2006

Donna L. Robinson
Notary Public

Sate Commission Expires 09/30/2007

OFFICIAL SEAL
Donna L. Robinson
Notary Public
Connecticut
My Commission Expires Sept. 30, 2007

LEGAL NOTICE

Notice of Application by The Connecticut Light and Power Company to the Connecticut Siting Council for Certificate of Environmental Compatibility and Public Need for the Oxford 26N Substation in Oxford, Connecticut.

Pursuant to the provisions of §§16-50l(b) of the General Statutes of Connecticut, §§16-50l-1-(e) of the Regulations of the Connecticut Siting Council and the Application Guides for Electric Substation Facilities of the Connecticut Siting Council (adopted September 19, 2000), notice is hereby given that The Connecticut Light and Power Company (CL&P) will, on or about December 5, 2006, submit an application to the Connecticut Siting Council seeking a Certificate of Environmental Compatibility and Public Need for a new substation in Oxford, Connecticut. The property where the substation is proposed, consists of 15.77 acres located north of Jacks Hill Road, east of Christian Street and west of North Larkey Road.

The purpose of the new Oxford 26N Substation is to provide needed increased distribution system capacity and reliability for the town of Oxford and the surrounding service area.

If the project is approved by the Connecticut Siting Council, construction is projected to begin in November 2007 with an in-service date of December 2008.

PAID ADVERTISEMENT

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Service List

Oxford Substation Application Service List

Local Authorities

Chief Executive Officer Town Of Oxford
August A. Palmer III, First Selectman
Town Hall
486 Oxford Road
Oxford, CT 06478-1298

Planning & Zoning Commission
Vincent A. Vizzo, Chairperson
Planning & Zoning Commission
Town Hall
486 Oxford Road
Oxford, CT 06478-1298

Conservation Commission/Inland Wetlands Agency
Michael Herde, Chairperson
Conservation Commission and Inland Wetland Commission
Town Hall
486 Oxford Road
Oxford, CT 06478-1298

Regional Planning Agency
Council of Governments of the Central Naugatuck Valley
Peter Dorpalen, Executive Director
Council of Governments of the Central Naugatuck Valley
60 North Main Street, 3rd Floor
Waterbury, Connecticut 06702-1403

Connecticut Association of Conservation and Inland Wetland Commissions
CACIWC, Inc.,
Tom Odell, President
P.O. Box 2373,
Vernon, CT 06066-1773

Elected Officials

State Senator Louis C. DeLuca
Senate District 32
Senate Republican Office
Legislative Office Building Room 3400
Hartford, CT 06106

State Representative David Labriola
House District 131
Senate Republican Office
Legislative Office Building Room 4200
Hartford, CT 06106

State Agencies Service List

Attorney General

Attorney General Richard Blumenthal
Office of the Attorney General
55 Elm Street
Hartford, CT 06106

Department of Environmental Protection

Gina McCarthy, Commissioner
The Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Department of Public Health

J. Robert Galvin, M.D., M.P.H., Commissioner
Department of Public Health
410 Capitol Avenue,
Hartford, Connecticut 06134-0308

Council on Environmental Quality

Thomas F. Harrison, Chairman
Connecticut Council on Environmental Quality
79 Elm Street
Hartford, CT 06106

Karl J. Wagener,
Executive Director
Connecticut Council on Environmental Quality
79 Elm Street
Hartford, CT 06106

Department of Agriculture

F. Philip Prelli, Commissioner
Department of Agriculture
65 Capitol Avenue
Hartford, CT 06106

Department of Public Utility Control

Donald W. Downes, Chairman
Department of Public Utility Control
Ten Franklin Square,
New Britain, CT 06051

Office of Policy and Management

Robert L. Genuario, Secretary
Office of Policy and Management
450 Capitol Avenue
Hartford, CT 06106-1308

Department of Economic and Community Development

James F. Abromaitis, Commissioner
Department of Economic & Community Development
505 Hudson Street
Hartford CT 06106

Department of Transportation

Ralph J. Carpenter, Commissioner
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131-7546

Bureau of Aviation & Ports
Department of Transportation
2800 Berlin Turnpike
Newington, CT 06131-7546

Matthew J. Kelly
Waterbury-Oxford Airport
300 Christian Street
Oxford, CT 06478

Federal Agencies

Federal Energy Regulatory Commission

Magalie Roman Salas
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Army Corps of Engineers

US Army Corps of Engineers
Attention: Joseph Bocchino, Executive Assistant
New England District
696 Virginia Road
Concord, MA 01742-2751

Federal Aviation Administration

Reid F. LaVerne
Manager, Airports Division
Federal Aviation Administration
New England Region
ANE-600
12 New England Executive Park
Burlington, MA 01803

Others (Courtesy Copies)

Connecticut Energy Advisory Board

Connecticut Energy Advisory Board
c/o Gretchen Deans
CERC
805 Brook Street
Building 4
Rocky Hill, CT 06067

State Archeologist

David A Poirier, Staff Archeologist
Historic Preservation and Museum Division
59 South Prospect Street
Hartford, CT 06106

Affidavit of Abutters Legal Notice

AFFIDAVIT OF ABUTTERS LEGAL NOTICE

State of Connecticut)
) ss: Waterbury, Connecticut
)
County of New Haven)

Pursuant to Section 16-50*l*(b) of the Connecticut General Statutes, I hereby certify that on or about November 28, 2006, 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 proposed Oxford Substation Project (Oxford, Connecticut) to be sent by certified or registered mail to each person who is appearing of record as the owner of property which abuts and/or is nearby the proposed site at Commerce Park Drive, Oxford 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.

In addition, on December 4, 2006, notices addressed to Michael Tarby at 16 North Larkey Road, Oxford, Connecticut 06478 for properties identified as Map 25, Block 18, Lot 8-B1 and Map 25, Block 18, Lot 8B2 were returned as undeliverable. On December 4, 2006, after further inquiry with the Tax Assessor, I caused the notices to Michael Tarby to be sent to 82 Bagley Road, Southbury, Connecticut 06488.

NAME: ROBERT S. GOLDEN JR.
TITLE: ATTORNEY

On this the 4th day of December, 2006, 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

List of Abutting and Nearby Property Owners

List of Abutting Property and Nearby Property Owners
Oxford 115- to 13.8 kV Substation
Map 25, Block 25, Lot 1BB3 (Subject Property)
Map 25, Block 25 Lots 1BB1 & 1BB2 (4.4-acre Easement)

1. Map 25, Block 25, Lot 1BB

   David Sippin
   234 Main Street
   Monroe, CT 06486

2. Map 25, Block 25, Lot 1BB1

   David Sippin
   234 Main Street
   Monroe, CT 06486

3. Map 25, Block 25, Lot 1BB2

   David Sippin
   234 Main Street
   Monroe, CT 06486

4. Map 25, Block 25, Lot BB4

   David Sippin
   234 Main Street
   Monroe, CT 06486

5. Map 18, Block 25, Lot 1A

   Oxford Science Park, LLC
   One American Way, 178 Christian Street
   Oxford, CT 06478

6. Map 25, Block 25, Lot 2

   Jacks Hill Cemetery
   Southford Cemetery Association
   c/o Mr. Frederick Rowland, President
   62 Tower Lane
   Oxford, CT 06478

7. Map 25, Block 25, Lot 1AA

   David Sippin
   234 Main Street
   Monroe, CT 06486

8. Map 25, Block 18, Lot 1

   Korowothy Zigmund Trust
   60 North Larkey Road
   Oxford, CT 06478

9. Map 25, Block 18, Lot 7D

   Andrew J. Turmel
   20 North Larkey Road
   Oxford, CT 06478

10. Map 25, Block 18, Lot 7

    Francini Naples Company
    Unit 201
    1 Trap Falls Road
    Shelton, CT 06484

11. Map 25, Block 18, Lot 8-B1

    Michael Tarby
    16 North Larkey Road
    Oxford, CT 06478

    Michael Tarby
    82 Bagley Road
    Southbury, CT 06488

12. Map 25, Block 18, Lot 8A

    Diane & Peter Alder
    14 North Larkey Road
    Oxford, CT 06478

13. Map 25, Block 18, Lot 8B2

    Michael Tarby
    16 North Larkey Road
    Oxford, CT 06478

    Michael Tarby
    82 Bagley Road
    Southbury, CT 06488

14. Map 25, Block 18, Lot 3

    Connecticut Department of Aeronautics
    c/o Dept. of Transportation
    2800 Berlin Turnpike
    Newington, CT 06131-7546

    Waterbury-Oxford Airport
    Matthew J. Kelly
    300 Christian Street
    Oxford, CT 06478

15. Map 25, Block 18, Lot 5

    Connecticut Department of Aeronautics
    c/o Dept. of Transportation
    2800 Berlin Turnpike
    Newington, CT 06131-7546

    Waterbury-Oxford Airport
    Matthew J. Kelly
    300 Christian Street
    Oxford, CT 06478

16. State of Connecticut (Bridle Path)

Connecticut Department of Environmental Protection
State Parks Division, Recreational Trails
79 Elm Street
Hartford, CT 06106