Connecticut Siting Council
Docket No. 272

Development & Management Plan
for the
Middletown-Norwalk
345-kV Transmission Line Project

Segment 2a –
Beseck Switching Station to Cheshire/Hamden Town Line
Wallingford and Cheshire

Volume 1 of 2

March 2006

Connecticut Light & Power

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for the

Middletown-Norwalk
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Submitted By:
The Connecticut Light and Power Company

March 2006

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APPENDICES

1.0 INTRODUCTION

The Connecticut Light and Power Company (CL&P) hereby submits this Development and Management (D&M) Plan for Segment 2a of the Middletown-Norwalk 345-kV Project (the Project), in accordance with the Connecticut Siting Council (Council) Decision and Order for Docket No. 272 of April 7, 2005, and pursuant to Sections 16-50j-60 through 16-50j-62 of the Regulations of Connecticut State Agencies, *Requirements for a right-of-way development and management plan*. Segment 2a includes all of the transmission line construction for the Project from the Beseck Switching Station in Wallingford to the Cheshire/Hamden Town Line, including the 115-kV underground line in the Old Farms neighborhood in Cheshire.

The Middletown-Norwalk Project consists of approximately 69 miles of 345-kV transmission line construction from CL&P's existing Scovill Rock Switching Station (located in the City of Middletown in Middlesex County), through New Haven County to CL&P's existing Norwalk Substation (located in the City of Norwalk in Fairfield County). The Project will include approximately 45 miles of overhead transmission line construction and 24 miles of underground transmission line construction. The overhead portion of the Project will extend from the Scovill Rock Switching Station to the East Devon Substation in the City of Milford. The underground portion will extend from the East Devon Substation to the Norwalk Substation in Norwalk. The Project will include the construction of two new electric substations (East Devon in the City of Milford and Singer in the City of Bridgeport) and one new switching station (Beseck in the Town of Wallingford), as well as modifications to the existing Norwalk Substation and Scovill Rock Switching Station. CL&P will own all overhead portions of the Project, as well as the underground portion from East Devon Substation to the first splice vault west of the Housatonic River in Stratford. CL&P ownership also includes the underground segment from the Singer Substation to the Norwalk Substation. The United Illuminating Company will build and own the Singer Substation and the underground segment from the Singer Substation to the first splice vault, inclusive of the vault, located west of the Housatonic River, a distance of approximately 5.6 miles.

CL&P plans to submit 12 separate D&M plans for its portion of the Project. The D&M plans will be developed based on the type of construction and geographic location along the route, as follows:

<u>Switching Stations and Substations</u> (4 D&M plans)

- Scovill Rock (Middletown) – Approved by the Council on August 25, 2005
- Beseck (Wallingford) – Approved by the Council on February 22, 2006
- East Devon (Milford)
- Norwalk (Norwalk)

<u>Overhead Lines</u> (4 D&M plans)

- Segment 1a: Scovill Rock Switching Station to Chestnut Junction, Oxbow Junction to Beseck Switching Station (with the exception of the Royal Oak Bypass), and Black Pond Junction to Beseck Switching Station
  (Middletown, Haddam, Durham, Middlefield, Meriden, Wallingford) – Approved by the Council on March 8, 2006
- Segment 1b: Royal Oak Bypass
  (Middlefield, Middletown)
- Segment 2a: Beseck Switching Station to Cheshire/Hamden Town Line
  (Wallingford, Cheshire)
- Segment 2b: Cheshire/Hamden Town Line to East Devon Substation
  (Hamden, Bethany, Woodbridge, West Haven, Orange, Milford)

Underground Lines (3 D&M plans)

- Segment 3: East Devon Substation to UI ownership point in Stratford (Milford, Stratford) – Filed with the Council January 24, 2006
- Segment 4a: Singer Substation to Fairfield/Westport Town Line (Bridgeport, Fairfield) – Approved by the Council on February 22, 2006
- Segment 4b: Fairfield/Westport Town Line to Norwalk Substation (Westport, Norwalk)

Underground Watercourse and Railroad Crossings (1 D&M plan)
(Milford, Stratford, Bridgeport, Fairfield, Westport, Norwalk)

1.1 PROJECT DESCRIPTION

Segment 2a consists of one continuous path for the proposed 345-kV transmission line from the new Beseck Switching Station in Wallingford to the Cheshire/Hamden Town Line, south of Cook Hill Junction. Four 115-kV circuits are rebuilt in Segment 2a for the proposed project. A short segment of one of these 115-kV circuits is rebuilt as an underground line in the towns of Cheshire and Hamden. The new transition structure and a portion of the duct bank for this underground line is just over the Chester/Hamden Town Line and is included here for information only. This structure and duct bank in Hamden will formally be included in the D&M Plan in Segment 2b.

Segment 2a consists of five continuous overhead sub-segments totaling 11.0 miles in length, and one underground sub-segment of 0.9 miles, as shown on the Key Map (see Figure 2-1). Following are brief descriptions of the six sub-segments:

Overhead Sub-Segments

- Beseck Switching Station to East Wallingford Junction in Wallingford (5.8 miles): construction of a new single-circuit 345-kV line with only minor modifications to an existing 345-kV line that it will parallel (see Volume 2, Typical Cross Section, Figure 5).
- East Wallingford Junction to Wallingford Junction in Wallingford (1.8 miles): replacement of an existing 115-kV line with a new 345/115-kV double-circuit line (see Volume 2, Typical Cross Section, Figure 6 east, middle and west).
- Wallingford Junction in Wallingford to a new transition structure west of the Wallingford/Cheshire Town Line in Cheshire (2.5 miles): construction of a new single-circuit 345-kV line with only minor modifications to an existing double-circuit 115-kV line (see Volume 2, Typical Cross Section, Figure 7A, 7AB).
- New transition structure west of the Wallingford/Cheshire Town Line to Cook Hill Junction in Cheshire (0.4 miles): construction of a new double-circuit 345/115-kV line on self-supporting steel monopoles (see Volume 2, Typical Cross Section, Figure 7B).
- Cook Hill Junction to the new transition structure south of the Cheshire/Hamden Town Line in Hamden (0.5 miles): construction of a new double-circuit 345/115-kV line on steel monopoles (see Volume 2, Typical Cross Section, Figure 8A, 8AB).

Underground Sub-Segment

- New transition structure west of Wallingford/Cheshire Town Line in Cheshire to new transition structure south of the Cheshire/Hamden Town Line in Hamden (0.9 miles): construction of one circuit of 115-kV underground transmission line between the transition structures (see Volume 2, Drawing 01149-45003 page 001, Duct Bank Sections).

1.1.1 Beseck Switching Station to East Wallingford Junction

From the new Beseck Switching Station south to East Wallingford Junction there is currently one 345-kV line within the existing right-of-way (ROW), supported on wood H-frame structures with a typical height of 90 feet. There are no 115-kV line components within this sub-segment.

From the new Beseck Switching Station to Powers Road just north of The Tradition Golf Club, a distance of approximately 5.0 miles, the new 345-kV line will parallel the existing 345-kV line to the east. The structures for the new 345-kV line will be a standard delta monopole design with a typical height of 108 feet as shown in Volume 2 (Typical Cross Section, Figure 5). The existing 345-kV line will require modifications at three locations along this sub-segment. The first location is a 0.4-mile section of line beginning approximately 0.5 miles south of the new Beseck Switching Station. It consists of four spans that will be relocated toward the west within the existing ROW. The second location at structure 24264 is where the existing ROW width decreases from 275 feet to 200 feet for approximately 570 feet. At this one location the delta structure will be replaced with a single vertical monopole. The third location, consisting of one span, will be lowered to accommodate the crossing of the proposed 345-kV line at Powers Road. No additional ROW will be required along this corridor.

At Powers Road the new 345-kV line will cross over the existing 345-kV to the west and will continue south to East Wallingford Junction approximately 0.8 miles. The structures for the new 345-kV line will be a standard delta monopole design with a typical height of 108 feet as shown in Volume 2 (Typical Cross Section, Figure 5 TGC). Construction of the Tradition Golf Club re-route will require a new ROW of 125 feet, all of which will be acquired from The Tradition Golf Club. The Tradition Golf Club has been developed on existing CL&P ROW. To avoid construction on the golf course, CL&P and The Tradition Golf Club have negotiated an easement on land owned by The Tradition Golf Club outside the boundaries of the golf course. For construction of the Project, the existing ROW and structures will remain in their present locations.

1.1.2 East Wallingford Junction to Wallingford Junction

From East Wallingford Junction to Wallingford Junction there is currently one 115-kV line within the ROW supported on wood-pole H-frame structures with a typical height of 57 feet. No additional ROW will be required along the existing corridor.

From East Wallingford Junction to North Haven Junction, approximately 1.2 miles, the 115-kV H-frames will be removed and replaced with double-circuit 345/115-kV monopoles with a typical height of 135 feet, as shown in Volume 2 (Typical Cross Section, Figure 6 East).

From North Haven Junction to Pent Road Junction (approximately 0.3 miles), the existing 115-kV H-frames will remain. The new 345-kV line will be located south of the existing structures using a standard delta monopole design with a typical height of 108 feet as shown in Volume 2 (Typical Cross Section 6 Middle).

From Pent Road Junction to Wallingford Junction (approximately 0.3 miles), the existing 115-kV H-frames will be removed and replaced with double-circuit 345/115-kV steel monopoles with a typical height of 105 feet, as shown in Volume 2 (Typical Cross Section, Figure 6 West).

1.1.3 Wallingford Junction to a Transition Structure West of Wallingford/Cheshire Town Line

From Wallingford Junction to the new transition structure west of the Wallingford/Cheshire Town Line in Cheshire (approximately 2.5 miles), there are currently two 115-kV circuits within the ROW, both of which are supported on the same double-circuit lattice towers with a typical height of 90 feet. The

structures for the new 345-kV line will be standard delta with a typical height of 108 feet as shown in Volume 2 (Typical Cross Section, Figure 7A). The existing 115-kV lines will remain, but will require modifications only at the west end of this sub-segment since one of the two circuits will terminate on a new overhead-to-underground transition structure near the Wallingford/Cheshire Town Line in Cheshire as shown in Volume 2 (Typical Cross Section, Figure 7AB). No additional ROW will be required along the existing corridor.

1.1.4 Transition Structure West of Wallingford/Cheshire Town Line to Cook Hill Junction

From the transition structure west of the Wallingford/Cheshire Town Line to Cook Hill Junction in Cheshire (approximately 0.4 miles), there are currently two 115-kV circuits within the ROW, both of which are supported on the same double-circuit lattice towers with a typical height of 90 feet. These lattice towers will be removed. The new 345-kV line and one of the existing 115-kV lines will be supported on a 345/115-kV standard composite monopole with a typical height of 108 feet as shown in Volume 2 (Typical ROW Cross Section, Figure 7B). No additional ROW will be required along the existing corridor.

1.1.5 Cook Hill Junction to Transition Structure South of Cheshire/Hamden Town Line

From Cook Hill Junction in Cheshire to the new transition structure south of the Cheshire/Hamden Town Line in Hamden (approximately 0.5 miles), there are currently three sets of 115-kV lines. Two of these 115-kV lines are supported on separate H-frames with a typical height of 57 feet and the other 115-kV line is supported on double-circuit steel lattice towers with a typical height of 80 feet. These existing structures will be removed. The new structure will be a 345/115-kV compact composite steel monopole with a typical height of 120 feet as shown in Volume 2 (Typical ROW Cross Section, Figure 8A). The 115-kV Line 1690 at and south of Cook Hill Junction will be removed. A guyed wood pole will be installed just north of Cook Hill Junction to terminate the remaining Line 1690 conductors and shield wires. At the south end of this sub-segment there will be the transition of the new 115-kV underground line to overhead on a transition structure near the Cheshire/Hamden Town Line in Hamden as shown in Volume 2 (Typical ROW Cross Section, Figure 8AB). No additional ROW will be required along the existing corridor.

1.1.6 Wallingford/Cheshire Town Line Transition Structure to Cheshire/Hamden Town Line Transition Structure

A new 115-kV underground line will be constructed in Cheshire and Hamden within Old Farms Road and Old Lane Road (approximately 0.9 miles). The existing overhead easement will be used to gain access to these roads from the overhead transition structures. The width of the existing ROW will not have to be expanded; however, CL&P will have to acquire rights to install underground facilities along this portion of the ROW.

The underground construction work in Segment 2a will include five separate construction activities that will occur sequentially and at times concurrently, but not continuously. As described in greater detail below, these activities include the following:

- Duct bank Installation
- Splice-vault Installation
- Cable Pulling
- Cable Splicing
- Restoration (temporary and final)

1.1.6.1 Duct Bank Installation

The typical duct bank configuration includes the three 3500-kcmil copper XLPE 115-kV transmission cables and grounding wire. The work zone for duct bank construction will measure approximately 400 feet in length. The following activities will occur in the work zone:

- saw cutting pavement
- trench excavation
- duct placement
- backfilling
- temporary pavement restoration (see 1.1.5 for Permanent Pavement Restoration)

1.1.6.1.1 Saw Cutting Pavement

Roadway pavement will be saw cut on both sides of the planned excavation to a width slightly greater than that for the standard duct bank configuration (See Volume 2, Drawing No. 01229-45003 PG 001). Alternate duct bank configurations to avoid existing utilities may require slight variations in the width of pavement requiring saw cutting.

1.1.6.1.2 Trench Excavation

The standard duct bank configuration requires excavation of a 3-foot wide trench to a minimum depth of 5.5 feet. This depth provides a minimum cover of 2.5 feet. As previously mentioned, at certain locations alternative duct bank configurations will be required to avoid existing utilities and these locations will typically require greater trench depths. Typical cross sections are provided in Drawing No. 01229-45003 PG 001 in Volume 2. Trenching is anticipated to proceed at a rate of 50 to 200 linear feet per day. Steel plating of the open trench will be utilized as allowed by the Towns of Hamden and Cheshire to facilitate the construction process and open up travel lanes during restricted construction periods. A soil management plan will be issued for handling spoil material removed during excavation.

Subsurface utility engineering (SUE), including identification of potential conflicts with existing utilities, has been performed. Results of this study are incorporated on the Plan and Profile Drawings. Site specific traffic plans will be developed for excavations and included in the Maintenance and Protection of Traffic (MPT) Plans. MPT Plans will be submitted to the towns.

1.1.6.1.3 Duct Placement

Schedule 40 Polyvinyl Chloride (PVC) ducts housing the XLPE 115-kV cables and grounding cables will be placed into the excavated trench in a predefined arrangement. Three six-inch ducts will house the XLPE 115-kVcables and one 2-inch duct will house the coated copper grounding cable. The ducts will be supported by incrementally spaced duct spacers and, in certain locations, these ducts will be strapped together to prevent movement during backfilling operations. Spacing of the ducts is critical and is dictated by system ampacity requirements, which are negatively affected by mutual heating of the cables. Detailed information regarding spacing is provided in the duct bank cross-section drawings noted as construction details on Drawing No. 01229-45003 PG 001 in Volume 2.

1.1.6.1.4 Trench Backfilling

Backfilling will be performed incrementally with various materials. The ducts will be encased in 3000-psi concrete (earthen formed), and then the trench will be backfilled with a 100-psi fluidized thermal backfill to a depth below the existing unbound layers or as specified by the Towns of Hamden and Cheshire. Aggregate material will then be installed in multiple lifts with alternating compaction techniques.

1.1.6.1.5 Temporary Pavement Restoration

Pavement restoration using hot patch will be temporarily used until final pavement restoration occurs. The temporary hot patch will be installed in the width of the saw-cut trench and will match the existing roadway grade.

1.1.6.2 Splice-vault Installation

Splice vaults serve as the location where successive lengths of cable are connected. Each vault will house three cable splices, one splice for each phase of the circuit. A pre-cast concrete splice vault with approximate outside dimensions of 24 feet in length, 7 feet in width and 8 feet in height, with an approximate 1-foot wall thickness, will be installed at approximate intervals of 1,600 feet along the underground route. Splice-vault excavations will be to a minimum depth of 15 feet, providing a minimum cover of 2.5 feet, with over excavations of two feet on each side for workspace. Each vault will have two 36-inch entry man-holes. Vault locations are provided on the Plan and Profile Drawings in Volume 2 (Drawing Nos. 01229-1001 PG 001 through PG 007).

Depending on site-specific conditions (such as overhead obstructions, proximity to existing structures and geotechnical conditions) vault installation will take approximately 7-14 days (assuming 12-hour shifts). Handling and disposal of spoil materials will be included in the soil management plans.

CL&P has made extensive efforts to locate splice vaults so as to minimize impacts to traffic, taking additional social factors into account. A temporary steel plating system may be utilized at the vault locations within roadways to maintain traffic flow during restricted work hours. Traffic control is addressed in the MPT Plans that will be issued to the municipalities of Hamden and Cheshire.

1.1.6.3 Cable Pulling

The approximately 5-inch diameter XLPE 115-kV transmission cable will be pulled into each duct between splice-vaults using reel carts located above splice vaults and pulling machines situated at the next splice vault along the alignment. Typical reels with 1800 feet of cable measure 12-14 feet in height and eight feet in width and weigh approximately 50,000 lbs. Due to the size of reel carts and clearance limitations along the route, an engineering review will be performed to designate shipping routes and approved travel routes from potential material staging areas. Pulling operations will take 3 days per splice vault. Specific traffic control measures for each vault location will be included in the MPT Plan.

1.1.6.4 Cable Splicing

Cable splicing within the splice vaults requires controlled temperature and humidity, provided by splicing trailers parked on top of the vault locations. Splicing operations will take 12 days for each vault based on 12-hour shifts, as recommended by cable manufacturers.

1.1.6.5 Permanent Pavement Restoration

Permanent pavement restoration will be performed to standards outlined by the Towns of Cheshire and Hamden for locations within public road right-of-way.

1.2 CONDITIONS

In addition to the *Requirements for a right-of-way development and management plan* found in Sections 16-50-j-60 et seq. of the Regulations of Connecticut State Agencies, the Council stipulated certain requirements for the D&M plans in conditions 14-21 of its Decision and Order for the Project. A copy of this portion of the Decision and Order is provided in Appendix A. Those requirements have been incorporated in this D&M Plan either directly or by reference (see Section 5.1 below). Construction

procedures will also be described in the *Method and Manner of Construction* filing that will be submitted to the Connecticut Department of Public Utility Control pursuant to Connecticut General Statutes §16-243 and associated Department regulations. The Project is also subject to a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act and Section 10 of the River and Harbors Act.

1.3 CONSULTATIONS

Prior to preparing this D&M Plan, CL&P consulted with officials and residents of the two Segment 2a municipalities – the Town of Wallingford and the Town of Cheshire. Consultations with the Town of Hamden will be discussed in the Segment 2b D&M Plan.

Municipal consultations included meetings with municipal officials, meetings with residents directly affected by the Project and town-wide public meetings. The public meetings began with a presentation by CL&P officials outlining several topics: the Council decision; the D&M Plan process, including ways to provide input; schedule; and potential options for the municipality to consider. The presentation was followed by a question and answer session. Input was solicited on potential changes to structure heights, structure finish and limited linear movement of structures along the ROW. Preliminary detailed drawings and handouts were available to discuss specific preferences.

Residents were informed that engineers were available for site visits and to conduct magnetic field measurements. Commonwealth Associates, an independent Technical Advisor, was available to assist residents and municipal officials with their requests. Residents were also provided a project hotline telephone number to further facilitate open and timely communications.

Many questions were addressed during the public meetings. Written requests or comments were submitted to CL&P during or after these public meetings. Written requests included questions concerning design changes, construction, vegetation, electric and magnetic fields (EMF) and noise. Additionally some residents requested copies of the presentation or drawings. Where appropriate, correspondence conveying CL&P's resolution of requests was provided to the municipalities. Copies of this and other relevant correspondence between CL&P and the municipalities are provided in Appendix B.

1.3.1 Town of Wallingford

A meeting with Wallingford officials, including the Mayor and Director of Public Utilities, was held on July 19, 2005 to review the Council decision and to notify them of the availability of the Technical Advisor. Prior to this meeting, the Mayor had solicited input from residents at an informational session held on May 3, 2005. This input was shared with CL&P at the July 19th meeting. A public meeting for residents was held on September 15, 2005. Many comments and requests were received at this meeting. See Appendix B for the February 7, 2006 correspondence to the Town detailing the resolution of these requests.

In addition, an on-site meeting was held on February 22, 2006 with the Mayor, Director of Public Utilities and residents of the Shweky Court/Stony Brook Road neighborhoods to discuss viewscape concerns raised by neighbors resulting from CL&P granting a request for the relocation of a structure on property owned by a nearby resident . Correspondence concerning this issue is provided in Appendix B.

1.3.2 Town of Cheshire

A meeting was held with the Town Manager and the Town Attorney on July 27, 2005 to review the Council decision and to notify them of the availability of the Technical Advisor. A follow-up meeting with Town officials to specifically discuss the 115-kV underground route was conducted on August 23, 2005. A public meeting with Cheshire residents was held on August 25, 2005. Written requests from

residents and correspondence with the Town regarding preferences and their responses can be found in Appendix B.

2.0 DRAWINGS AND SITE INFORMATION

CL&P inventoried and assessed environmental conditions and cultural resources as part of the Application to the Council in Docket No. 272 (the Application). The following provides descriptive information regarding the existing conditions and modifications that will take place within Segment 2a. Much of this information is shown graphically on the Plan drawings included in Volume 2 and as described below.

2.1 KEY MAP

The location of the route that comprises Segment 2a is shown on the Key Map, Figure 2-1.

2.2 PLAN DRAWINGS

Volume 2 of this D&M Plan includes drawings that depict the plan view for the overhead portion of the Project, as well as for the underground portion in Segment 2a. Volume 2 also includes cross-sections depicting typical overhead structure and underground duct bank profiles, as well as ROW requirements.

2.3 LAND OWNERSHIP

Most of the land within the existing ROW in Segment 2a is privately owned, although there are small tracts of land owned by companies in the Northeast Utilities System (NU) along the route. Specific information on land ownership is identified on the Plan Drawings in Volume 2. Landowner information for parcels where additional rights will have to be acquired for an expanded easement for The Tradition Golf Club re-route and for the 115-kV underground cable in Segment 2a is provided in Table 2-1.

In addition to the property rights to be acquired that are set forth in Table 2-1, CL&P may need to acquire certain easements in connection with the access roads identified on the drawings in Volume 2. CL&P is currently preparing an inventory of where such rights will be needed and will file an amendment to this D&M plan to identify such rights pursuant to the D&M Plan Change Approval Process discussed in Section 4.2.2 and outlined in Appendix F.

2.4 PUBLIC ROADS AND LANDS

Approximately 21 public roads will be crossed along Segment 2a. Of these, five are State Routes, while the remaining 16 are local roads. The State Routes crossed include Route 68 (Barnes Road), Route 150, Interstate 91, Route 5, and Route 15 (Wilbur Cross Parkway). Segment 2a also crosses three sets of rails owned and operated by two different railroad companies. The first two rail crossings are owned by Tilcon Connecticut, Inc. and operated by the Providence & Worcester Railroad Company. The third rail crossing is owned by Amtrak and operated by Amtrak, CSX Corporation and Connecticut Southern Railroad. The first crossing is between existing structures 8776 and 8777 (Volume 2, Sheet 28 of 30, the second crossing is near the intersection of the ROW and Powers Road (Volume 2, Sheet 26 of 30) and the third crossing is near the intersection of the ROW and South Colony Road (Volume 2, Sheet 24 of 30).

Approximately 0.9 miles of Segment 2a will be underground, primarily within Old Farms Road and Old Lane Road. This underground portion of the route is located primarily in Cheshire between the Wallingford – Cheshire Town Line and the Cheshire – Hamden Town Line.

2.5 TOPOGRAPHY AND GRADING

No significant changes in topography or grade will occur as a result of the construction and installation of new overhead or underground transmission lines in Segment 2a. Minor deviations may occur along

N:\NUSCO\38565\Cadd\OHD-M_PLAN\Segment 2\FIGURE 2-1_2a.dwg (SHEET 1) 02-28-2006 09:23 JPB B&McD

NORTH HAVEN JUNCTION

EAST WALLINGFORD JUNCTION

BESECK S/S

THE TRADITION GOLF CLUB

Source: USGS 1:24,000
Topographic Quadrangles:
Durham & Wallingford 1996

Scale: 0 2000' 4000'
SCALE IN FEET

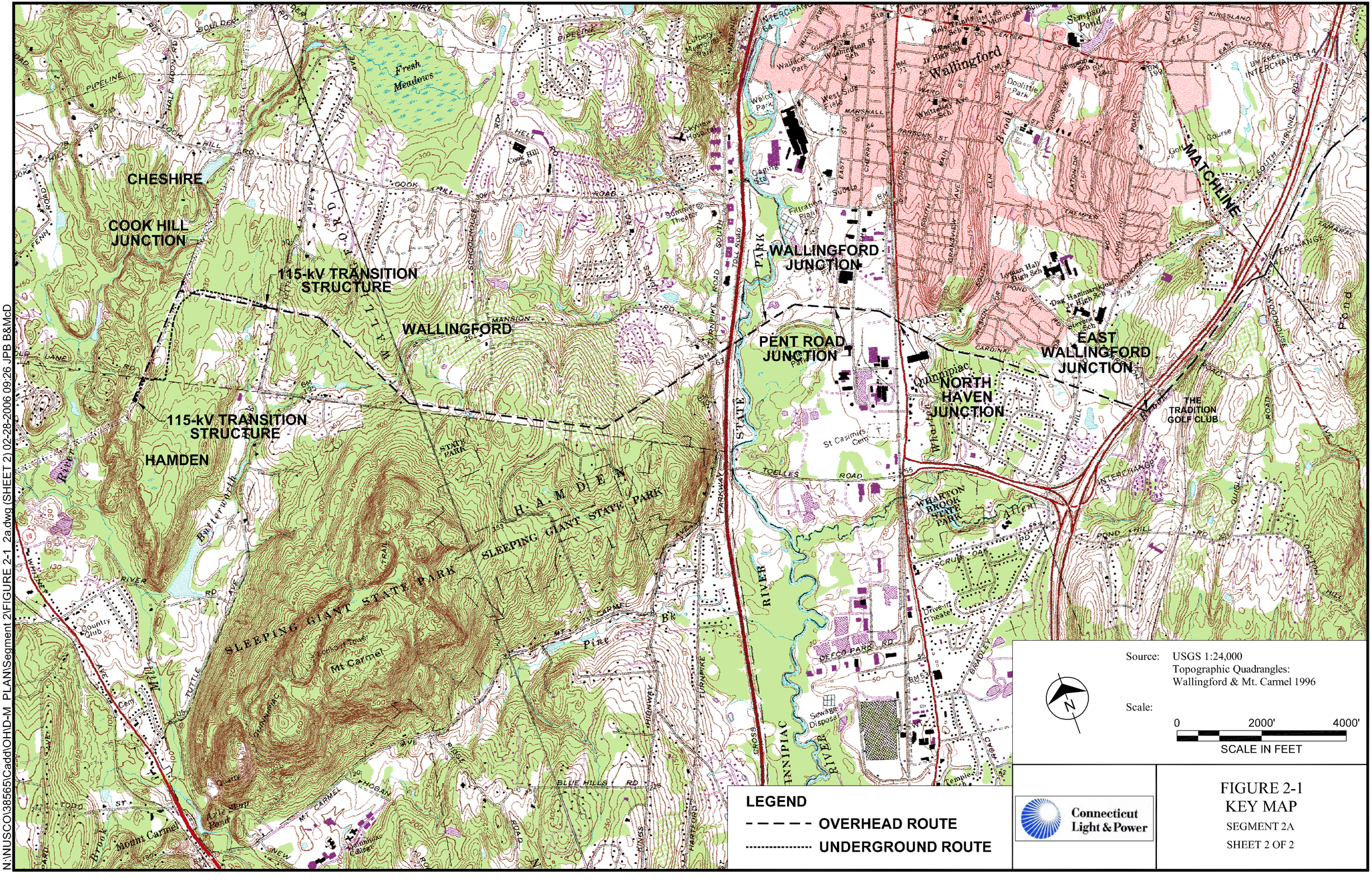
LEGEND

- - - - - OVERHEAD ROUTE

---------- UNDERGROUND ROUTE

Connecticut Light & Power

FIGURE 2-1
KEY MAP
SEGMENT 2A
SHEET 1 OF 2



N:\NUSCO\38565\Cadd\OH\D-M PLAN\Segment 2\FIGURE 2-1 2a.dwg (SHEET 2) 02-28-2006 09:26 JPB B&McD

Table 2-1. Landowner Information for Parcels Requiring Acquisition of Easement

	Owner Name	**Site Address**	**Contact Address**	**Assessors Parcel Number**	**Acreage of Additional Easement Rights Needed**
	Tilcon Connecticut, Inc. Branford Steam Railroad Co.	Woodhouse Road Wallingford, CT 06492	1 Forest Road North Branford, CT 06471		0.4 (OH)
847	Harbour Ridge Golf Club, LLC	Harrison Road Wallingford, CT 06492	9700 Miller Pond Run Toano, VA 23168	220 1 9	11.3 (OH)
741	Korenblat, Bonnie M. & Donato, Michael R.	125 Old Farms Road	Cheshire, CT 06410	95 13	0.4 (UG)
				Total	12.1

OH – Overhead Easements
UG – Underground Easements

access roads or at stream crossings. Locations where construction mats are used may require some grading to provide a level work area.

2.6 STRUCTURE AND FOUNDATION LOCATIONS

The location and type of new structures and foundations along the ROW are shown on the Plan Drawings provided in Volume 2. A drawing depicting typical foundation configurations is found in Volume 2 on Drawing 01229-60001. Underground construction drawings, including duct bank details, are also provided in Volume 2.

2.7 ACCESS POINTS FOR CONSTRUCTION

Access roads (and alternates) are identified on the D&M Plan Drawings provided in Volume 2. Access includes both existing access roads and new construction access roads, including spurs from existing access roads to structures where needed. Some maintenance to existing access roads will likely be necessary. The width of access roads is typically 15 feet. Only roads approved by the Council will be used for access. Prior to the initiation of construction activities, the Owner's Representative or the Construction Supervisor representing CL&P will install signage identifying access roads restricted from vehicular traffic associated with construction.

2.8 VEGETATION AND CLEARING

Vegetation types occurring in Segment 2a can be divided into two categories: vegetation in the cleared ROW and vegetation outside of the cleared ROW. The locations of vegetation identified in Section 16-50j-61(b)(6) of the Regulations of Connecticut State Agencies are provided on the drawings in Volume 2.

2.8.1 Vegetation

In general, vegetated areas adjacent to the existing cleared ROW in Segment 2a are dominated by mixed hardwood forests of various ages and size that range from 50 to 85 feet in height.

Cleared portions of the existing ROW that do not contain hayfields, pastures, or manicured grasses are dominated by upland shrubs, grasses and forbs. Shrubs are typically less than 20 feet tall.

2.8.2 Clearing

Clearing will occur along the majority of Segment 2a as described below. Vegetation clearing practices to be used are consistent with NU's Design and Application Standard titled "Right-of-Way Vegetation Clearing Standard for 69-kV through 345-kV Transmission Lines" (TRM 81.021), the New England Independent System Operator's Vegetation Clearing Standard OP-4, and the National Electrical Safety Code Rule 218 as adopted by the Connecticut Department of Public Utility Control (Regulation Section 16-11-134). The construction clearing practices include retention of a buffer for wetlands and watercourses. A 50-foot buffer will be used near intermittent streams and wetlands and a 100 foot buffer will be used near perennial streams. TRM 81.021 is provided in Appendix C. A professional forester will oversee clearing activities.

2.8.2.1 Beseck Substation to the Tradition Golf Club

Approximately 75 additional feet of the existing ROW will need to be cleared from the Beseck Switching Station to the Tradition Golf Club in the Town of Wallingford. Some tree clearing will be required.

2.8.2.2 Tradition Golf Club to West of North Haven Junction

The entire proposed 125 foot wide ROW in the vicinity of the Tradition Golf Club to East Wallingford Junction in the Town of Wallingford will require clearing. Approximately 25 feet of the existing 200 foot ROW from the East Wallingford Junction to just east of North Haven Junction will require clearing, the

exception being the ROW between Route 5 and Pent Road Junction where minimal tree clearing is anticipated.

2.8.2.3 North Haven Junction to Wallingford Junction

Of the existing 200 foot wide ROW from North Haven Junction to Wallingford Junction, approximately 25 additional feet of the existing ROW will require minimal tree clearing.

2.8.2.4 Wallingford Junction to Wallingford/Cheshire Town Line

Of the existing 200 foot wide ROW from Wallingford Junction to the Cheshire Town Line, approximately 80 additional feet of the existing ROW will require clearing.

2.8.2.5 Wallingford/Cheshire Town Line to Cook Hill Junction

Of the existing 200-foot wide ROW from the Cheshire Town Line to Cook Hill Junction, approximately 20 additional feet of the existing ROW will require clearing.

2.8.2.6 Cook Hill Junction to Cheshire/Hamden Town Line

Of the existing 165-foot wide ROW from Cook Hill Junction to the Hamden Town Line, no additional clearing will be required. Selective tree cutting may be required.

2.8.3 Low-Impact Tree Clearing

Low-impact tree clearing incorporates a variety of approaches, techniques and equipment to minimize site disturbance and to protect forests, wetlands, watercourses, soils and cultural resources, including stone walls, old cemeteries and old foundations. Low impact tree clearing includes the following activities:

- Professionally prepared harvesting plan detailing landing areas, access and stream/wetland crossings.
- Employing directional tree felling – both hand felling and mechanical felling.
- Following Best Management Practices (BMP's) for harvesting in the design and implementation phase as outlined in *Logging and Water Quality in Connecticut* – developed by the Connecticut 208 Forestry Advisory Committee, 1982.
- Professionally prepared harvesting contract that includes specifications for access, wetland/stream crossings, vegetation removal, cultural resource protection and residual site quality.
- Selecting tree-clearing contractors who are experienced in low impact tree clearing and certified in the State of Connecticut.
- Utilizing a professional forester to oversee the tree clearing operations, access development, wetland/watercourse crossings, wetland and archaeological site protection and wood removal for contract compliance.
- Regulate days of operation due to suitable/unsuitable ground conditions.
- Using a variety of tree clearing equipment to minimize impacts – forwarders, feller bunchers (cut-to-length systems), cable and grapple skidders, high-flotation tires, portable bridges and temporary culverts. The correct equipment will be matched to each specific site and conditions.
- The skidding of severed trees (tops of trees are dragged along the ground behind a skidder) will be limited to areas of low erosion potential. A forwarder is the preferred equipment type in areas with sensitive soil conditions.
- Cutting trees close to the ground, while leaving stumps and root systems in the ground to naturally decompose over time. These decaying root systems provide additional soil stability as well as hosting native organisms.

- Maximizing use of upland portions of the existing cleared ROW for landing areas and the use of existing access roads.

The benefits of low-impact tree clearing compared with conventional land clearing are substantial. Low-impact tree clearing strives to minimize site disturbance and maximize timber utilization. These objectives are less of a factor in conventional land clearing. Most land that is conventionally cleared for roads, homes and commercial development is stumped, excavated and graded.

Trees will be directionally felled either by hand – a chainsaw and operator – or felled mechanically by the equipment described below, which typically includes a felling head (a type of rotary saw) attached to a boom. The boom extends out to the tree, the felling head severs the tree, and the boom and operator place the tree on the ground.
Skidders are large articulated tractors with either a grapple or cable winch at the rear of the machine. The winch allows the skidder to be parked away from sensitive areas and to winch trees back to the machine. They may have rubber tires or tracks.

A forwarder is a tractor with a loading boom and bunk on the back of the machine to hold logs. A forwarder drives up to a pile of logs, loads the logs onto its bunk and drives back to the landing area. The logs are never skidded on the ground.

A feller buncher is a "cut-to-length" system consisting of a tractor with a specialized felling head on a boom that is capable of cutting a tree, directing its fall, removing the limbs and cutting the bole into logs. This system is more commonly used for smaller diameter conifers.

There are some variations to the equipment described above, including whether the equipment is mounted on tracks or rubber tires, but these devices are typically the equipment recommended for use in this type of clearing.

2.9 ENVIRONMENTALLY SENSITIVE AREAS

Wetlands and watercourses are identified on the D&M Plan Drawings in Volume 2. Erosion and sediment control measures necessary to protect the resource are provided in Volume 2. Several slopes identified on the D&M Plan Drawings are considered to have a higher than average potential for erosion without protection. Recommended best management practices for these potential erosional areas are included on the D&M Plan drawings.

A potential vernal pool (Wetland #66) is located in Wallingford between Stony Brook Drive and the Tilcon Connecticut, Inc. Railroad and between existing structures #8789 and #8790 (Volume 2, Sheet 27 of 30). This area will be fenced with orange safety fence a minimum of 25 feet from the edge of the pool at time of installation. The pool will be noted as restricted access for construction purposes.

Portions of Segment 2a are located in the McKenzie Watershed Protection District of the Town of Wallingford from existing pole #8798 to the Beseck Switching Station. The Town of Wallingford owns a dedicated Open Space within the watershed protection district. There will be no expansion of the ROW within this watershed.

CL&P will limit the conductor pulling sites to upland areas to the extent possible. These will be identified to the Council prior to commencement of construction.

2.10 EXISTING UNDERGROUND UTILITIES

Aboveground utility surveys and marked underground utilities will be mapped prior to construction. Prior to and during the construction phase of the Project, the Construction Contractor will also be required to use "Call Before You Dig" to identify buried utilities.

2.11 STAGING AREA AND CONSTRUCTION FACILITIES

A combination of temporary storage areas, staging areas and laydown areas will be needed to support construction. Material staging sites will be required at locations in the vicinity of the transmission line corridor. Although these areas do not necessarily have to be adjacent to the transmission line ROW, the closer these areas are to the ROW, the less the disturbance to the public. Material storage, staging and laydown areas will be on property owned by NU, where possible. If NU-owned property is not available, areas such as parking lots or land that is not in use will be considered, provided the areas are of sufficient size and in the general vicinity of construction.

The Construction Contractor will be responsible for selecting sites for material staging and for making arrangements with property owners for use of the land during construction. Material staging areas proposed for use will be submitted to Council staff for review and approval prior to use through the Change Approval Process described in Appendix F of this Plan.

The Application to the Council noted three potential material staging areas. However, one of these, located in Segment 19 shown in Volume 9 of the Application, is in a wetland and is not considered viable. The other two sites are located in Segments 15 and 23 shown in Volume 9 of the Application. These sites will be presented to the Contractor as potential material staging areas.

3.0 CONSTRUCTION INFORMATION

This section contains information concerning construction practices and mitigation measures.

3.1 TIMBER AND SNAG TREES

To maximize forest resource utilization, CL&P employed a professional forestry consulting firm to inventory trees on the properties affected by ROW widening. In some cases, private landowners own marketable timber in the affected ROW. CL&P will work with these private landowners to distribute marketable timber value equitably.

3.1.1 Marketable Timber

Trees identified during the marketable timber survey to be removed during construction and installation of the Project fall into three categories of marketability:

- **Non-marketable Timber** – Trees that are generally small, seedling and sapling sized, or larger trees with significant defect.
- **Marginal Value Timber** – Trees that are generally pole timber sized (6-11 inch diameter at breast height (dbh)) or larger trees with some defect. Common uses for these trees include fuelwood and pulpwood, and pallet wood. This category also includes larger sawtimber trees whose economic value has been decreased due to high harvesting costs.
- **Marketable Timber** – Trees that are sawtimber sized (12+ inches dbh), sound and reasonably accessible to harvesting. Uses for these trees include veneer and dimensional lumber products.

Utilization of the harvested trees will fall into one or more of the following categories:

- **Chipped on Site** – These trees are usually non-marketable or marginally marketable. Chips would be blown onto upland portions of the ROW.
- **Cut, Trimmed and Piled on Site** – The harvested trees are trimmed, piled and available to neighboring landowners for use as fuel and other uses. This approach can be used in areas where the transportation of harvested wood has the potential for site impact.
- **Removed from Site** – The harvested trees and chips can be removed from site and be utilized at various mills. Markets, harvesting and transportation costs will determine the viability of this option.

A number of options exist for capturing the value of the trees removed during construction activities. Some of these options are described briefly below:

- **Roadside Sale** – Landclearing contractor(s) will pile marketable timber roadside. CL&P will have the logs measured, graded and sold to the forest products industry.
- **Contractor's Timber Sale** – There are two options available for Contractor's timber sale. One employs the use of detailed data to provide a reasonably accurate estimate of the value of the timber. The other option uses estimates to derive the value of the timber.

    - The logging contractor/construction contractor accepts ownership of the marketable timber. CL&P will have the logs measured, graded and appraised. The appraised value will be deducted from the contractor/construction contractor's bid price for clearing.

- The logging contractor/construction contractor is provided with an inventory and location map prior to clearing to ascertain approximate timber value. The approximate timber value can be deducted from the ROW clearing bid price for NU properties.

3.1.2 Snag Trees

A snag tree is defined as a standing tree in some stage of decay that has one or more biological and structural attributes usable by wildlife. Snag trees can be used for cavity and branch nesting, perches, insect production and cover. Existing snag trees will remain along the transmission corridor providing they meet all specifications for line clearance and safety. There is a constant supply of new snag trees being created along the ROW due to tree damage caused naturally by ice, wind, insects and disease.

3.2 CONSTRUCTION AND REHABILITATION PROCEDURES

Construction procedures for water crossings, sedimentation and erosion control, protected species, hydrologic features and cultural resource properties are described below.

3.2.1 Water Crossing Techniques for Overhead Construction

Section L.2 of CL&P's Application to the Council discusses the existing water resources within the Project. The drawings in Volume 2 of this D&M Plan depict these resources and the recommended crossing method. Water crossing methods that may be used during construction include flume pipe with crushed rock ramp, temporary bridge, construction mats, stone fords and crushed stone with gravel surface. The access roads have gaps in them to avoid crossing surface waters and/or wetlands. These gaps are identified on the drawings in Volume 2 as "Restricted Access." Temporary bridges and construction mats and associated materials will be removed upon completion of construction.

Wetland #71 (Volume 2, Sheet 26 of 30) is a shallow marsh and shrub swamp. The area is a depression with drainage from all sides. CL&P proposes to construct a new access road through the adjacent upland area to the south and east of the wetland to gain access to new structures #8803 and #24248 through #24249. This new access road will continue along the east edge of the ROW to gain access to new structures #24250 and #24251. Construction mats will be used for the portions of the access road in the wetland. Construction mats will also be used to provide a work platform at these structure installation sites.

Specific construction techniques at each of the water crossings in Segment 2a will be dependent upon site conditions at the time of construction and will be the responsibility of the Owner's Representative or Construction Supervisor representing CL&P. Periods of low flow occur in the summer months of June through September and the winter months of January through March. If, during periods of low flow, a precipitation event increases the rate of flow and no crossing structure is installed, the Construction Contractor will either delay resuming construction activities until the flow decreases or install a crossing structure as described in the sedimentation and erosion control measures in Appendix D.

3.2.2 Sedimentation and Erosion Control Procedures

Construction activities will comply with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. A discussion of sedimentation and erosion control measures is provided in Appendix D. Specific sedimentation and erosion control measures are shown on the D&M Plan Drawings in Volume 2. Sedimentation barriers will be installed on the downhill side of the construction area to control sedimentation. Excess spoil material will be removed from wetland areas by the contractor and disposed of in approved locations.

As the Council stated in the Decision and Order (condition 14(r)) excavated material in upland areas may be graded in proximity to the structure, and excavated soil in wetlands construction will be stockpiled in an upland area for use in wetland restoration.

Groundwater encountered during the installation of structure foundations will be discharged in accordance with the Connecticut Department of Environmental Protection (DEP) General Permit for Stormwater and Dewatering Wastewaters from Construction.

3.2.3 Precautions for Protected Species

Pursuant to consultation with the DEP Natural Diversity Database, there are no known protected species existing along the Segment 2a ROW.

A summary letter from Jeff Borne (CL&P) to Dawn McKay (DEP) dated August 18, 2005 addresses all of the protected species concerns identified by the DEP. This letter is presented in Appendix E.

3.2.4 Restoration of Hydrologic Features

No permanent changes will occur to hydrologic features in the transmission line ROW. Temporary changes may occur due to rutting by vehicles or tree removal, installation and removal of crossing structures, or other construction-related activities. These areas will be restored to pre-existing conditions. Use of site-specific water crossing techniques, careful logging and other BMP will minimize or alleviate impacts to hydrologic features.

3.2.5 Protection of Cultural Resources

CL&P contracted with a cultural resource consultant, Raber & Associates, to perform a Phase I Cultural Resources Assessment as part of the Application to the Council. A significant portion of the ROW was identified as being "sensitive" with a high probability of encountering unknown resources. Further information is needed to complete the cultural resource assessment. In accordance with the Council Decision and Order condition 21, CL&P will investigate the structure locations prior to construction to identify sites that are eligible for inclusion on the National Register of Historic Places. In rare instances the use of archaeological monitors to observe the excavation for preparation of the foundations may be necessary. If monitors observe cultural artifacts during construction of Segment 2a structures, work will stop until the significance can be determined.

Rock walls identified by the SHPO as having significance, as defined in the National Historic Preservation Act of 1966, will require that approximately 20 linear feet of the affected stone wall would be dismantled to permit right-of-way access by heavy construction equipment. The portion of the wall that is dismantled will be reassembled after construction. Additional measures, if any, will be developed in consultation with the SHPO, cultural resource consultant and CL&P prior to impact by construction.

3.2.6 Herbicide Use

No herbicides will be used during construction. Normal maintenance of the ROW, conducted on an annual basis, includes treatment of vegetation mechanically and with EPA-approved herbicides. No change in ROW maintenance practices is anticipated due to the construction of new lines in Segment 2a.

3.2.7 Public Recreation Areas

There is one active recreational resource located in the vicinity of the Segment 2a ROW. The Sleeping Giant State Park is located in Hamden. The State Park is 1,439 acres in size and offers over 30 miles of hiking trails. This State Park is located east of Whitney Avenue, north of Mount Carmel Avenue, west of South Turnpike Road, and south of Tuttle Avenue. This recreation area is used for hiking, sight-seeing, fishing, and picnicking. It is well-known for its 1.5-mile hiking trail leading to the stone observation

tower on the peak of Mt. Carmel, which provides a view of Long Island Sound and the New Haven area. No significant adverse impacts to this resource are anticipated.

3.2.8 Disposal and Maintenance Procedures

The Construction Contractor will remove all construction debris and dispose of it in accordance with local, state and federal regulations. Excess soil in upland areas will be spread on the ROW in adjacent upland areas as noted in condition 14(r) of the Council's Decision and Order. No burning of debris will occur on the ROW.

3.2.9 Blasting Procedures

Blasting is not anticipated for Segment 2a. However, should further geotechnical studies or field conditions dictate the use of blasting, a blasting plan will be prepared and submitted to the Council for review and approval prior to any blasting on the ROW.

3.2.10 Restoration Plans

Two types of restoration plans have been developed for this project; one for restoring wetlands, and one for limiting the introduction or spread of invasive species.

3.2.10.1 Wetlands Restoration

Detailed information pertaining to restoration of wetlands is contained in Section 5.0 of the Sedimentation and Erosion Control Plan in Appendix D.

3.2.10.2 Invasive Species

Wetlands are the most susceptible habitat to invasive species introduced by construction activities associated with the Project. The DEP, under PA 03-136 and in cooperation with the Connecticut Invasive Plants Council through the Invasive Plant Atlas of New England, has compiled a list of invasive plants for the State of Connecticut. The most common invasive species include the following:

- Purple loosestrife (*Lythrum salicaria)*
- Autumn olive (*Eleagnus umbellatus)*
- Barberry (*Berberis spp)*
- Ligustrum (*Ligustrum spp)*
- Honeysuckle (*Lonicera spp)*
- Buckthorn (*Rhamnus sp)*
- Rose (*Rosa multiflora)*
- Spurge (*Euphorbia spp)*
- Common reed (*Phragmites australis).*

Areas where the aforementioned species occur in significant numbers, either within or adjacent to the ROW, are noted on the Plan drawings in Volume 2. These areas will be monitored for a period of two years following final restoration of the ROW. If significant new populations occur within the ROW, a licensed professional horticulturist and/or wetland scientist will be retained to recommend and implement methods of control for invasive species and to maximize re-establishment of native vegetation.

The ROW will also be surveyed one year after final restoration for the remaining species on the invasive plant list noted in the Invasive Plant Atlas of New England. If significant populations of these less common species are found on the ROW, a licensed professional horticulturist and/or wetland scientist will be retained to recommend and implement methods of control for invasive species and to maximize re-establishment of native vegetation.

3.2.11 Independent Environmental Consultant

The Council approved BSC Group as the independent environmental consultant at its January 25, 2006 meeting.

4.0 NOTICES AND REPORTS

This section outlines requirements regarding notifications and reporting procedures per Section 16-50j-62 of the Regulations of Connecticut State Agencies.

4.1 STAGING AND MATERIAL LAYDOWN AREAS

Where possible, material storage, staging and laydown areas will be on property already owned by NU. If NU property is not available, areas such as parking lots or land that is not in use will be considered provided the areas are of sufficient size and in the vicinity of construction. Potential material staging areas were identified in Volume 1, Section K (Proposed Construction Areas) of the Application. The Construction Contractor may use these locations or choose to identify others that may be more suited to its needs. Staging and material laydown areas proposed for use and not on this list will be submitted to the Council for review and approval.

4.2 NOTICES TO THE COUNCIL

Three types of notices are required by the Council for construction. Each type is described below.

4.2.1 Notice of Beginning

CL&P will provide written notification to the Council a minimum of two weeks prior to beginning construction activities, including clearing and access work, for Segment 2a.

4.2.2 Notice of Changes

For all segments of this Project, CL&P intends to utilize a uniform procedure for interfacing with the Council regarding any changes to approved D&M Plans, namely, the procedure that the Council has already approved in connection with the D&M Plan for Scovill Rock Switching Station. This model, which has also been successfully applied for the Bethel-Norwalk Project, (Docket No. 217) is described and depicted in Appendix F.

4.2.3 Notice of Completion

CL&P will provide the Council written notification of the completion of construction and site restoration for Segment 2a.

4.3 NOTICE TO MUNICIPALITIES

CL&P will provide written notification to the Chief Elected Officials of Wallingford and Cheshire a minimum of three weeks prior to beginning construction activities, including clearing and access work. CL&P will also notify the Chief Elected Officials upon completion of the work.

4.4 NOTICE TO LANDOWNERS

CL&P will provide written notification to adjacent landowners a minimum of two weeks prior to beginning construction activities, including clearing and access work.

4.5 MONTHLY REPORTS

CL&P will provide the Council with written monthly progress reports that will include changes or deviations from the approved D&M Plan, if any.

4.6 FINAL REPORT

CL&P will provide a final report to the Council as required in Section 16-50j-62 of the Regulations of Connecticut State Agencies. The final report will contain the following information as prescribed in the regulations:

1. All agreements with abutters or other property owners regarding special maintenance precautions.

2. Significant changes to the D&M Plan that were required because of the property rights of underlying and adjoining owners or for other reasons.

3. Location of non-transmission materials that have been left in place.

4. Actual construction cost of the facility including but not limited to the following:

- Clearing and access
- Construction
- Restoration

5.0 ADDITIONAL ELEMENTS PER COUNCIL ORDER

The listing of additional elements identified in the Decision and Order for Docket No. 272 pertaining to D&M Plans is included in Appendix A. All applicable information is contained within the above portions of the plan.

5.1 Decision and Order Checklist

The following is a synopsis of the requirements for the D&M Plans for the Middletown-Norwalk Project as stated in the Decision and Order, followed by the location of the information in the Segment 2a D&M Plan, or a statement if not applicable to this D&M Plan.

ITEM FROM DECISION	LOCATION/APPLICABILITY
14. D&M Elements	
a. Detailed site plan showing access roads, foundations, staging areas for overhead route	Plan Drawings, Volume 2
b. Detailed site plan showing splice vaults, duct banks, staging areas for underground route	Plan Drawings, Volume 2
c. Identification of horizontal directional drill and jack and bore sites for underground	Not Applicable
d. Erosion and Sediment Control Plan	Section 3.2.2, Appendix D
e. Provisions for crossing wetlands and watercourses	Section 2.9 and Section 3.2.1, Plan Drawings – Volume 2
f. Vegetation Clearing Plan	Section 2.8
g. Wetland Restoration Plan	Section 3.2.10, Appendix D
h. Invasive Species Management Plan	Section 3.2.10
i. Plan for Pre-Construction Survey for species of concern	Section 3.2.3; None required by DEP
j. Post-construction EMF Monitoring Plan	Section 5.2
k. Fencing of vernal pools; buffer around wetlands	Sections 2.8 and 2.9, Plan Drawings-Volume 2
l. Inland Wetlands Restoration Plan	Section 3.2.10, Appendix D
m. Monitoring and Operations Plan for each water crossing	Section 3.2.1, Plan Drawings – Volume 2
n. Traffic Control Plan	Appendix G
o. Blasting Plan	Section 3.2.9
p. Groundwater Best Management Practices	Section 3.2.2
q. Identification of staging areas	Sections 2.11 and Section 4.1
r. May spread excavated material in uplands; stockpile excavated soil from wetlands	Section 3.2.2

s. Limit conductor installation sites and pulling sites to cleared ROW, not in wetlands	Section 2.9
t. Plan to remove or adjust selected structures	Section 5.2
15. DEP Consultation (river crossings)	Not Applicable (no DEP-permitted water crossings in Segment 2a)
16. Regional Water Authority (RWA) Conditions	Not Applicable (not on RWA property)
17. DOT Encroachment Permit Process	Not Applicable (no areas of DOT encroachment)
18. Provide the Following Permits Prior to Construction (Public Health, OLISP, Water Crossings)	Not Applicable
19. Waste Management Permits	Section 3.2.8
20. Independent Environmental Consultant	Section 3.2.11
21. Phase II Archaeological Reconnaissance Survey	Section 3.2.5

5.2 SUPPLEMENTAL PLANS AND INFORMATION

The Council's Decision and Order (D&O) required that CL&P provide project-specific supplemental information on a variety of topics including supplemental information on the Electric and Magnetic Field Monitoring Plan (Item 14(j)) and structure placement in Tamarac Swamp (item 14(t)).

5.2.1 Electric and Magnetic Field Monitoring Plan

CL&P and UI intend to file a single electric and magnetic field monitoring plan for locations along the entire Project route at a future date.

5.2.2 Information Regarding Specific Structures Referenced in Council's Decision and Order

The Council's Decision and Order Item 14(t) required information concerning existing structures 8799 and 8800 located in the Tamarac Swamp in Wallingford (see Volume 2, sheet 26 of 30). The design of the line in the vicinity of this wetland was adjusted so that no structures will be placed within the main body of the wetland. New structure 24252 will be placed just outside of the northeast edge of the wetland, while new structure 24251 will be placed in the fringe of the wetland on the southwest edge, resulting in a span of approximately 1,030 feet.

6.0 PROJECT SCHEDULE

The construction of Segment 2a will take approximately one and a half years, from mobilization through construction and site restoration. The schedule is currently under review and subject to modifications. Construction activities are expected to occur during daylight hours, six days per week. The typical workday will be 9 to 10 hours, depending on the season. Activities will generally occur between the hours of 7 a.m. and 7 p.m., with additional overtime as necessary. CL&P or its representative will verbally notify the Council of extensions to the six 10-hour workdays. This will be followed with a written notification within 24 hours of a business day..

SEGMENT 2a CONSTRUCTION SCHEDULE

Overhead Transmission

Survey	**September 2005 – March 2006**
Geotech testing	**January 2006 – June 2006**
Right-of-way clearing	**August 2006 – January 2007**
Mobilization	**April 2007**
Structure Removal	**September 2007 – May 2008**
Structures/Cable installation	**April 2007 – June 2008**
Cut-overs	**April 2008 – July 2008**
Site Restoration	**September 2007 – July 2008**

Underground Transmission

Survey	**May 2005 – October 2005**
Procurement	**April 2006 – September 2007**
Fabrication/Delivery	**March 2007 – January 2008**
Civil Work	**March 2007 – July 2007**
Cable Installation	**September 2007 – January 2008**
Testing	**February 2008- March 2008**
Pavement Restoration	**March 2008 – May 2008**
Landscaping	**April 2008 – June 2008**