

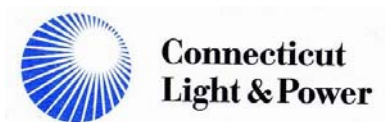


**Connecticut Siting Council
Docket No. 272**

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

**Segment 1b –
Royal Oak Bypass
Middletown and Middlefield**

June 2006



Development & Management Plan

for the

**Middletown-Norwalk
345-kV Transmission Line Project**

**Segment 1b
Royal Oak Bypass
Middletown and Middlefield**

**Connecticut Siting Council
Docket No. 272**

**Submitted By:
The Connecticut Light and Power Company**

June 2006

**Prepared by:
Burns & McDonnell Engineering Company, Inc**

TABLE OF CONTENTS

1.0	INTRODUCTION.....	1-1
1.1	Project Description.....	1-2
1.2	Conditions.....	1-2
1.3	Consultations.....	1-2
	1.3.1 City of Middletown.....	1-3
	1.3.2 Town of Middlefield.....	1-3
2.0	DRAWINGS AND SITE INFORMATION.....	2-1
2.1	Key Map.....	2-1
2.2	Plan Drawings.....	2-1
2.3	Land Ownership.....	2-1
2.4	Public Roads and Lands.....	2-1
2.5	Topography and Grading.....	2-1
2.6	Structure and Foundation Locations.....	2-1
2.7	Access Points for Construction.....	2-1
2.8	Vegetation and Clearing.....	2-1
	2.8.1 Vegetation.....	2-4
	2.8.2 Clearing.....	2-4
	2.8.3 Low Impact Tree Clearing.....	2-4
2.9	Environmentally Sensitive Areas.....	2-5
2.10	Existing Underground Utilities.....	2-5
2.11	Staging Area and Construction Facilities.....	2-5
3.0	CONSTRUCTION INFORMATION.....	3-1
3.1	Timber and Snag Trees.....	3-1
	3.1.1 Marketable Timber.....	3-1
	3.1.2 Snag Tree Maintenance.....	3-2
3.2	Construction And Rehabilitation Procedures.....	3-2
	3.2.1 Water Crossing Techniques.....	3-2
	3.2.2 Sedimentation and Erosion Control Procedures.....	3-2
	3.2.3 Precautions for Protected Species.....	3-3
	3.2.4 Restoration of Hydrologic Features.....	3-3
	3.2.5 Protection of Cultural Resources.....	3-3
	3.2.6 Herbicide Use.....	3-3
	3.2.7 Public Recreation Areas.....	3-3
	3.2.8 Disposal and Maintenance Procedures.....	3-3
	3.2.9 Blasting Procedures.....	3-3
	3.2.10 Rehabilitation Plans.....	3-3
	3.2.10.1 Wetlands Restoration.....	3-4
	3.2.10.2 Invasive Species.....	3-4
	3.2.11 Independent Environmental Consultant.....	3-4
4.0	NOTICES AND REPORTS.....	4-1
4.1	Staging and Material Laydown Areas.....	4-1
4.2	Notices to the Council.....	4-1
	4.2.1 Notice of Beginning.....	4-1
	4.2.2 Notice of Changes.....	4-1

4.2.3	Notice of Completion	4-1
4.3	Notice to Municipalities	4-1
4.4	Notice to Landowners	4-1
4.5	Monthly Reports.....	4-1
4.6	Final Report.....	4-1
5.0	ADDITIONAL ELEMENTS PER COUNCIL ORDER.....	5-1
5.1	Decision and Order Checklist.....	5-1
5.2	Supplemental Plans and Information	5-2
6.0	PROJECT SCHEDULE	6-1

LIST OF TABLES

Table 2-1.	Land Owner Information for Parcels Impacted by ROW Expansion.....	2-3
------------	---	-----

LIST OF FIGURES

Figure 2-1.	Key Map.....	2-2
Figure 2-2.	Laurel Brook Watershed Protection Area	2-6

APPENDICES

APPENDIX A – DOCKET 272, SELECTED PORTIONS OF DECISION AND ORDER

APPENDIX B – DRAWINGS

Exhibit 2-1 – Cross Section

Exhibit 2-2 – Plan View

Exhibit 2-3 – Typical Foundations

Exhibit 2-4 – Erosion Control Details

APPENDIX C – RIGHT-OF-WAY VEGETATION CLEARING STANDARD TRM
81.021

APPENDIX D – CONDITIONS FOR CONSTRUCTING PROJECT ON
MIDDLETOWN WATER DEPARTMENT PROPERTY

APPENDIX E – SEDIMENT AND EROSION CONTROL PLAN

APPENDIX F – D&M PLAN CHANGE APPROVAL PROCESS

1.0 INTRODUCTION

The Connecticut Light and Power Company (CL&P) hereby submits this Development and Management (D&M) Plan for Segment 1b of the Middletown-Norwalk 345-kV Project (the Project), in accordance with the Connecticut Siting Council (Council) Decision and Order for Docket 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 1b covers the bypass of the existing ROW through the Royal Oak neighborhood, known as the Royal Oak Bypass, through the Towns of Middletown and Middlefield.

The Middletown-Norwalk Project consists of approximately 69 miles of 345-kV transmission line 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 in the City of Middletown 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 Substation in Milford and United Illuminating's Singer Substation in the City of Bridgeport) and one new switching station (Beseck in 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 vault west of the Housatonic River in Stratford. CL&P ownership continues for the entire underground portion 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 splice vault west of the Housatonic River, a distance of approximately 5.6 miles.

CL&P plans to submit thirteen 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:

Switching Stations and Substations (4 D&M plans)

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

Overhead Lines (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 March 8, 2006
- Segment 1b: Royal Oak Bypass
(Middlefield, Middletown)
- Segment 2a: Beseck Switching Station to Cheshire/Hamden Town line
(Wallingford, Cheshire) – Approved by the Council June 7, 2006
- Segment 2b: Cheshire/Hamden Town line to East Devon Substation
(Hamden, Bethany, Woodbridge, West Haven, Orange, Milford) – Filed with the Council June 16, 2006

Underground Lines (4 D&M plans)

- Segment 3: East Devon Substation to Housatonic River Crossing (Milford, Stratford) - Approved by the Council March 29, 2006
- Segment 4a: Singer Substation to Fairfield/Westport Town line (Bridgeport, Fairfield) – Approved by the Council February 22, 2006
- Segment 4b: Fairfield/Westport Town line to Norwalk Substation (Westport, Norwalk) – Filed with the Council May 12, 2006
- Segment 4c: Westport Avenue in Norwalk to Norwalk Substation (Norwalk)

Underground Watercourse and Railroad Crossings (1 D&M plan)

(Milford, Stratford, Bridgeport, Fairfield, Westport, Norwalk)

1.1 PROJECT DESCRIPTION

Segment 1b consists of a 1.2-mile overhead segment of the proposed 345-kV overhead transmission line that will be routed away from an existing CL&P 115-kV line corridor and onto a bypass around the Royal Oak Subdivision (Royal Oak). This segment of the new 345-kV line is routed through the towns of Middletown (0.7 miles) and Middlefield (0.5 miles), as shown on Figure 2-1, Key Map.

This segment of new 345-kV line begins at a location within the existing 115-kV right-of-way (ROW) that is approximately 800 feet east of Royal Oak near the Durham-Middletown town line. The bypass angles northwest around the north side of Royal Oak through the City of Middletown, across South Main Street (Route 17) into the Town of Middlefield, and then turns south to rejoin the existing ROW just inside the Durham town line and approximately 400 feet west of Royal Oak.

The new 345-kV line will be supported on delta-configured tubular steel monopole structures with a typical height of 85 feet as shown in Exhibit 2-1, Typical Cross Section. This segment will require a new 125-foot wide 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 of the two Segment 1b municipalities – Middletown and Middlefield.

An overview of these consultations is presented below.

1.3.1 City of Middletown

On May 10, 2005, a meeting was held with the Mayor of Middletown and other City officials to review the Council decision. On July 6, 2005, a joint meeting was held with the Mayor of Middletown and the First Selectmen of both Middlefield and Durham to discuss the D&M Plan process and to notify the municipalities of the availability of the Technical Advisor. CL&P explained the Council's decision at a meeting scheduled by the City of Middletown on August 9, 2005 for the property owners whose parcels are crossed by the bypass ROW. On December 20, 2005, a meeting was held with the newly-elected Mayor to brief him on Project status.

1.3.2 Town of Middlefield

On July 6, 2005, a joint meeting was held with the Mayor of Middletown and the First Selectmen of Middlefield and Durham to discuss the D&M Plan process and to notify the municipalities of the availability of the Technical Advisor.

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 1b. Much of this information is shown graphically on the Plan drawings as described below.

2.1 KEY MAP

The location of Segment 1b is shown on the Key Map, Figure 2-1.

2.2 PLAN DRAWINGS

The D&M Plan drawings depict the cross-section depicting typical structure profiles and ROW requirements (see Appendix B, Exhibit 2-1), the plan view for the overhead portion of the Project in Segment 1b (see Appendix B, Exhibit 2-2), typical foundation drawings (see Appendix B, Exhibit 2-3) and erosion control details (see Appendix B, Exhibit 2-4).

2.3 LAND OWNERSHIP

All of the land within Segment 1b is privately owned with the exception of a parcel owned by the City of Middletown and administered by its Middletown Water Department. Land ownership is identified on the Plan Drawing in Exhibit 2-2. Landowner information for parcels where additional easement rights will have to be acquired is provided in Table 2-1.

2.4 PUBLIC ROADS AND LANDS

There is one public road crossing on Segment 1b: Route 17, also known as South Main Street, in Middletown.

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 transmission lines in Segment 1b. Minor deviations may occur along access roads or approaches to 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 structures along the ROW are shown on the plan view drawing, Exhibit 2-2. A drawing depicting typical foundation configurations is found in Exhibit 2-3.

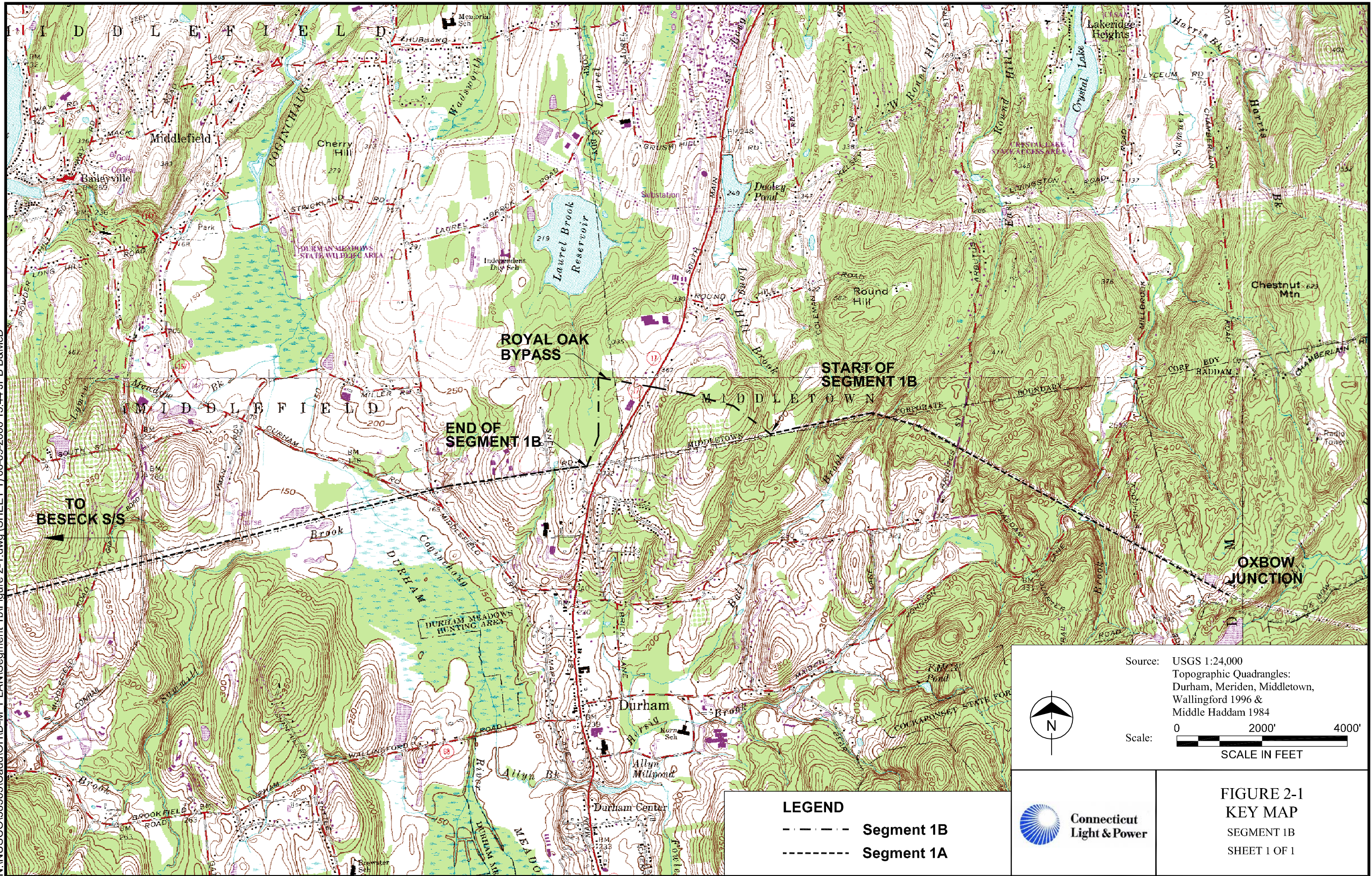
2.7 ACCESS POINTS FOR CONSTRUCTION

Access roads (and alternates) are identified on the plan view drawing provided in Exhibit 2-2. Access includes both existing access roads and newly constructed access roads, including spurs from access roads to structures, where needed. New access roads will be permanent. 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) 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 1b include forested wetland and mixed hardwood uplands. The locations of vegetation identified in Section 16-50j-61(b)(6) of the Regulations of Connecticut State Agencies are provided on the plan view drawing in Exhibit 2-2.

N:\INUSCO\38565\Cadd\OHID-M PLAN\Segment 1b\Figure 2-1.dwg (SHEET 1) 06-09-2006 15:44 JPB B&McD



TO BESECK S/S

ROYAL OAK BYPASS

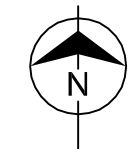
END OF SEGMENT 1B

START OF SEGMENT 1B

OXBOW JUNCTION

LEGEND

- - - - - Segment 1B
- Segment 1A



Source: USGS 1:24,000
 Topographic Quadrangles:
 Durham, Meriden, Middletown,
 Wallingford 1996 &
 Middle Haddam 1984

Scale: 0 2000' 4000'
 SCALE IN FEET



**Connecticut
 Light & Power**

**FIGURE 2-1
 KEY MAP
 SEGMENT 1B
 SHEET 1 OF 1**

Table 2-1. Landowner Information for Parcels Impacted by ROW Acquisition.

Line List No.	Owner Name	Site Address	Contact Address	Assessors Parcel Number	Approximate Acreage of Additional Easement Rights Needed
124	Moss, John T., Estate Moss, Carol W. Executrix	218 Route 17 Durham, CT 06422	200 Pine Orchard Rd. Branford, CT 06405	21 22	2.5
124.01	City of Middletown	2 Snell Road Middlefield, CT 06455	Dekoven Drive Middletown, CT 06455	18 18	4.5
127	Boscarino, Nancy, Trustee Etals	2175 South Main Street Middletown, CT 06457	31 Laureate Drive Middletown, CT 06457	32 46 1 14-1	1.1
129	Hamden Greenhouse LLC	2301 South Main Street Middletown, CT 06457	2301 South Main Street Middletown, CT 06457	32 46 1 14-X	1.1
131	Wilson, Linda D. and Wilson, Ralph E., Trustee	2200 South Main Street Middletown, CT 06457	591 Bow Lane Middletown, CT 06457	32 47 2-3	8.8
124	Moss, John T., Estate Moss, Carol W. Executrix	218 Route 17 Durham, CT 06422	200 Pine Orchard Rd. Branford, CT 06405	21 22	0.1
				Total	18.1

2.8.1 Vegetation

The wetland west of Route 17 is a mature forested wetland with red maple being the predominant wetland species mixed with black gum, yellow poplar, yellow birch, ash, elm and beech. East of Route 17, the vegetation is almost entirely upland mixed hardwood trees typically 50 to 85 feet tall with mixed deciduous and conifer species including maples, oaks, hickories, red cedar and pine. Age and ratio of deciduous to conifers varies.

2.8.2 Clearing

Clearing, for a width of 125 feet, will occur along most of the ROW. The western portion of Segment 1b is in a forested wetland while the eastern portion of the ROW is situated in mature mixed hardwoods.

The clearing practices to be used are consistent with CL&P's Design and Application Standard titled "Right-of-Way Vegetation Clearing Standard for 69-kV through 345-kV Transmission Lines" (TRM 81.021) provided in Appendix C, 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 Sec. 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, where practicable. A professional forester will oversee clearing activities.

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 and old foundations. Low-impact tree clearing includes:

- 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 that 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 depending on 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 recommended 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 disturbances 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 plan view drawing in Exhibit 2-2. Erosion and sediment control measures necessary to protect the resource are provided in Exhibit 2-2. Details for erosion and sediment control measures are provided in Exhibit 2-4.

Much of the route is located in the Laurel Brook watershed protection area as shown on Figure 2-2. The Laurel Brook watershed is an inactive water supply for the Town of Middletown. Parcel Number 18-18 is owned by the City of Middletown and administered by the Middletown Water Department. Conditions for the construction of the Project across Parcel Number 18-18 are provided in Appendix D.

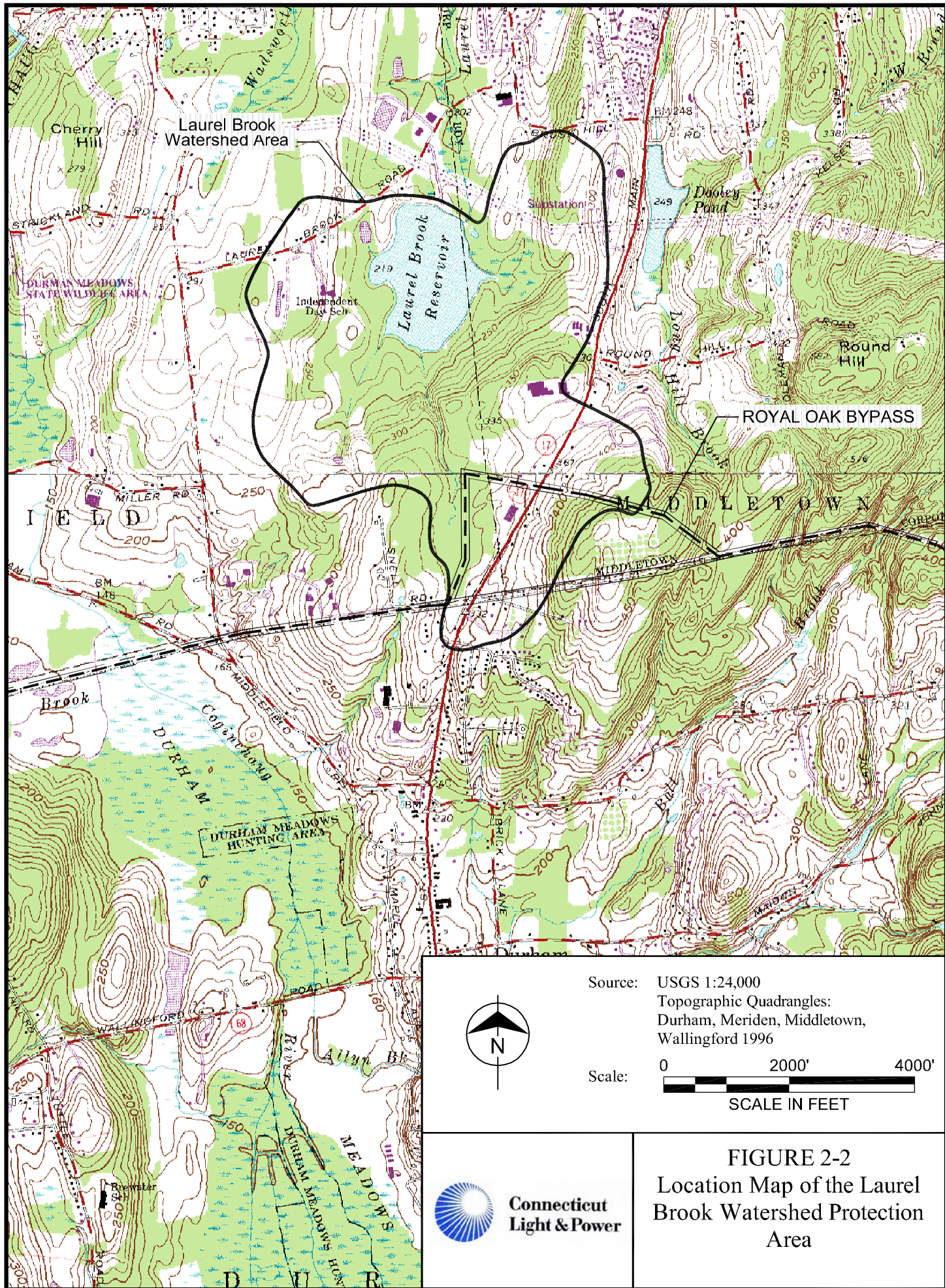
CL&P will limit the conductor pulling sites to upland areas to the extent practicable. Conductor pulling sites will be identified to the Council prior to commencement of construction.

2.10 EXISTING UNDERGROUND UTILITIES

Prior to and during the construction phase of the Project, the Construction Contractor will 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



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

Scale: 0 2000' 4000'
 SCALE IN FEET

FIGURE 2-2
 Location Map of the Laurel
 Brook Watershed Protection
 Area



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. 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.

3.0 CONSTRUCTION INFORMATION

This section contains information concerning construction practices and mitigation measures related to the construction of Segment 1b overhead lines.

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 the new ROW. Private landowners own marketable timber in the affected ROW. CL&P will work with these private landowners to determine the disposition of wood product.

3.1.1 Marketable Timber

Trees identified during the marketable timber survey to be removed during construction 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 the landowner whose property is crossed by the CL&P ROW and chooses to maintain ownership of the wood. These wood products may be used as fuelwood or have 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. These include:

- **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 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

The drawing in Exhibit 2-2 depicts water resources in the area and the recommended crossing methods. 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. Some access roads have gaps in them to avoid crossing surface waters and/or wetlands. These gaps are identified on the drawings in Exhibit 2-2 as "Restricted Access." Temporary bridges and construction mats and associated materials will be removed upon completion of construction.

Specific construction techniques at each of the water crossings in Segment 1b will be dependent upon site conditions at the time of construction and will be the responsibility of the Owner's Representative and/or Construction Supervisor representing CL&P. Periods of low flow occur in the summer months of June through September and in 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 construction activities until the flow decreases or install a crossing structure as described in the sedimentation and erosion control measures in Appendix E.

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 E. Specific sedimentation and erosion control measures are shown on the plan view drawing in Exhibit 2-2. 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 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 1b ROW.

3.2.4 Restoration of Hydrologic Features

No significant permanent changes will occur to hydrologic features in the Segment 1b ROW. Temporary changes may occur from installation and removal of crossing structures, or other construction-related activities. 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 Segment 1b 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 has contracted with Raber and Associates to perform Phase II surveys of the Project ROW at structure locations prior to construction to identify sites that are eligible for inclusion on the National Register of Historic Places.

Rock walls identified by the SHPO as having significance, as defined in the National Historic Preservation Act of 1966, will be dismantled for approximately 20 linear feet to permit 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 construction.

3.2.6 Herbicide Use

No herbicides will be used during construction. No change in ROW maintenance practices is anticipated due to the construction of new lines in Segment 1b.

3.2.7 Public Recreation Areas

There are no recreation areas in or along Segment 1b.

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 1b. However, should further geotechnical studies or field conditions dictate the use of blasting, a blasting plan will be prepared and submitted to the Council and Fire Marshall for review and approval prior to any blasting on the ROW.

3.2.10 Rehabilitation Plans

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

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 E.

3.2.10.2 Invasive Species

Wetlands are the most susceptible habitat for invasive species introduced by construction activities associated with the Project. The DEP, under P.A. 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 these species occur in significant numbers, either within or adjacent to the ROW, are noted on the Plan drawings. These areas will be monitored for a period of two growing seasons following final restoration of the ROW. If significant new populations occur within the ROW, a 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 inspected 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 new populations of these less common species are found on the ROW, a professional horticulturist, forester 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 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 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.

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 used 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 1b.

4.3 NOTICE TO MUNICIPALITIES

CL&P will provide written notification to the Chief Elected Officials of Middletown and Middlefield 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.

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 1b 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, Exhibit 2-2
b. Detailed site plan showing splice vaults, duct banks, staging areas for underground route	Not Applicable
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 E
e. Provisions for crossing wetlands and watercourses	Section 2.9 and Section 3.2.1, Plan Drawings – Exhibit 2-2, Exhibit 2-4
f. Vegetation Clearing Plan	Section 2.8
g. Wetland Restoration Plan	Section 3.2.10, Appendix E
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-Exhibit 2-2
l. Inland Wetlands Restoration Plan	Section 3.2.10, Appendix E
m. Monitoring and Operations Plan for each water crossing	Not Applicable
n. Traffic Control Plan	Not Applicable
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	Not Applicable (none of the mentioned structures are located in Segment 1b)
15. DEP Consultation (river crossings)	Not Applicable (no DEP-permitted water crossings in Segment 1b)
16. Regional Water Authority (RWA) Conditions	Not Applicable
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 Archeological Reconnaissance Survey	Section 3.2.5

5.2 SUPPLEMENTAL PLANS AND INFORMATION

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

6.0 PROJECT SCHEDULE

The construction schedule for Segment 1b is shown below. The schedule is currently under review and subject to modifications. Construction activities are expected to take place during six 10-hour days per week, with additional time if necessary.

SEGMENT 1b CONSTRUCTION SCHEDULE

Survey	February 2006 – August 2006
Geotech testing	July 2006 – September 2006
Right-of-way clearing	January 2007 – February 2007
Mobilization	March 2008
Structure Removal	Not Applicable
Structures/Cable installation	March 2008 – May 2008
Cut-overs	October 2008
Site Restoration	May 2008 – June 2008.