



**Connecticut Siting Council  
Docket No. 272**

**Development & Management Plan  
for the**

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

**Crossings of Watercourses and Railroads in  
Segments 3, 4a and 4b**

**Volume 1 of 2**

**September 2006**



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Volume 1 of 2**

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Docket No. 272**

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

**September 2006**

**Prepared by:  
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## 1.0 INTRODUCTION

The Connecticut Light and Power Company (CL&P) hereby submits this Development and Management (D&M) Plan for the watercourse and railroad crossings associated with the underground portion of the Middletown-Norwalk Project (the Project) between the Singer Substation in Bridgeport and Father Conlon Place in Norwalk and between the East Devon Substation in Milford and the first splice vault west of the Housatonic River, 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*. 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 Switching Station 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. 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 portion 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 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 on 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, 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 By-pass (Middletown) – Filed with the Council on May 12, 2006; Denied by the Council on June 7, 2006; Re-submitted to the Council on June 16, 2006
- Segment 2a: Beseck Switching Station to Cheshire/Hamden Town line (Wallingford, Cheshire) – Approved by the Council on June 7, 2006
- Segment 2b: Cheshire/Hamden Town line to East Devon Substation (Hamden, Bethany, Woodbridge, West Haven, Orange, Milford) – Filed with the Council on June 15, 2006

#### Underground Lines (4 D&M plans)

- Segment 3: East Devon Substation to the Housatonic River Crossing (Milford) – Approved by the Council on March 22, 2006
- Segment 4a: Singer Substation to Fairfield/Westport Town line (Bridgeport, Fairfield) – Approved by the Council on February 22, 2006
- Segment 4b: Sasco Creek to Father Conlon Place in Norwalk (Westport, Norwalk) – Approved by the Council on June 27, 2006
- Segment 4c: Father Conlon Place in Norwalk to Norwalk Substation (Norwalk)

#### Crossings of Watercourses and Railroads in Underground Segments (1 D&M plan) (Milford, Stratford, Bridgeport, Fairfield, Westport, Norwalk)

## 1.1 PROJECT DESCRIPTION

This D&M Plan covers the work associated with the installation of five stream crossings and two railroad crossings in the underground segments as noted below by installation method:

- Housatonic River (Milford and Stratford) – Horizontal Directional Drill (HDD)
- Ash Creek (Bridgeport and Fairfield) – Independent utility bridge
- Southport Harbor/Mill River (Fairfield) – Independent utility bridge
- Sasco Creek (Fairfield and Westport) – Independent utility bridge
- Saugatuck River (Westport) – HDD
- Metro North main line crossing near the intersection of I-95 and Naugatuck Avenue (Milford) – Jack and bore
- Metro North Waterbury spur line crossing near the intersection of Naugatuck Avenue and Kent Street (Milford) – Independent utility bridge.

The three installation methods used to install the crossings of watercourses and railroads are discussed below.

### 1.1.1 Horizontal Directional Drill Installation Method

Installation of a duct bank by horizontal directional drilling (HDD) is generally accomplished in three stages. The first stage consists of directionally drilling a small diameter pilot hole along a designed directional path. The second stage involves enlarging this pilot hole to a diameter which is sufficient to accommodate the duct bank. The final stage consists of pulling the duct bank into the enlarged hole. All stages of HDD involve circulating drilling fluid, typically a mixture of fresh water and bentonite clay, from equipment on the surface, through a drill pipe, and back to the surface through the drilled annulus.

#### 1.1.1.1 Pilot Hole

Directional control of the pilot hole is achieved using a non-rotating drill string with an angular offset at the leading edge, typically created by a bent sub or a bent motor housing. The asymmetry of the leading edge creates a steering bias while the non-rotating aspect of the drill string allows the steering bias to be held in a specific position while drilling. If a change in direction is required, the drill string is rolled so that the direction of bias is the same as the desired change in direction. Where directional control is not required, the drill string may be rotated continually. In soft soils, drilling progress is typically achieved by erosion as a result of drilling fluid being discharged at high velocity through a jet nozzle on the bit. In hard soils or bedrock, drilling progress is achieved by mechanical cutting using a downhole hydraulic motor, commonly referred to as a mud motor, which allows for bit rotation without drill string rotation.

The path of the pilot hole is monitored during drilling using a steering tool inserted in the drill string several feet behind the drill bit. Transmission of survey readings from the steering tool to the surface is generally accomplished through a wire running inside the drill string. These downhole survey readings, in conjunction with measurements of the distance drilled, are used to calculate the horizontal and vertical position of the pilot hole relative to the initial entry point on the surface. The path of the pilot hole may also be tracked using a surface monitoring system which determines the location of the steering tool using measurements from a coil placed on the surface. In short, the steering tool senses its location relative to the coil and communicates this information to the surface.

#### **1.1.1.2 Prereaming**

After the pilot hole is completed, one or more prereaming passes are employed to enlarge the pilot hole to a diameter suitable for installation of the duct bank. Reaming tools typically consist of a circular array of cutters and drilling fluid jets and are often custom made by contractors for a particular hole size or type of soil. For a typical prereaming pass, a reamer attached to the drill string at the pilot hole's exit point is rotated and drawn to the drilling rig, thus enlarging the hole. Drill pipe is added behind the reamer as it progresses toward the drilling rig insuring that a string of pipe is always maintained in the drilled hole. It is also possible to ream away from the drill rig, in which case a reaming tool fitted into the drill string at the rig is rotated and advanced away from it.

#### **1.1.1.3 Pullback**

Upon completion of prereaming, duct bank installation is accomplished by attaching the prefabricated bundle of ducts, commonly referred to as the "pull section", behind a reaming assembly at the exit point, then pulling the reaming assembly and pull section through the reamed hole to the drilling rig. Prior to being pulled into the hole, the pull section is supported on the ground surface using some combination of roller stands and pipe handling equipment to minimize tension and prevent damage to the ducts. A swivel assembly is placed between the reaming assembly and the pull section in order to prevent the pull section from rotating as the reaming assembly is rotated and pulled by the rig.

### **1.1.2 Jack and Bore Installation Method**

The term jack and bore (J&B) encompasses several trenchless construction methods for installing a casing from a launching shaft to a receiving shaft beneath obstacles such as roads and railroads. These methods include, but are not necessarily limited to, auger boring and pipe ramming. On the Middletown-Norwalk Project, the specific horizontal boring method to be employed for the Metro North main line crossing near the intersection of I-95 and Naugatuck Avenue in Milford will be determined by the contractor, taking into account factors such as the length and required accuracy of the bore, workspace availability, anticipated subsurface conditions, depth to groundwater, and environmental impact. J&B methods may utilize water or slurry for lubrication of the casing being installed, stabilization of the borehole, or to facilitate removal of spoil. Details relative to auger boring and pipe ramming are provided below.

#### **1.1.2.1 Auger Boring**

The auger boring process involves simultaneously pushing a casing through the earth while removing soil within the casing using a rotating helically wound auger. The rotating action of the auger serves the dual purpose of transferring spoil back to the launching shaft and transmitting torque to a cutting head. Power to drive the auger and cutting head is provided from the surface through utility lines. Auger boring systems use an open-faced cutting head allowing groundwater and spoil to flow freely into the casing. Auger boring is typically utilized to advance casing pipe along a straight line between a launching shaft and a receiving shaft. In general, auger boring systems are non-steerable. However, guided boring systems have been developed and have been used on a limited basis. Steering is achieved through articulation of the casing near the cutting head, which can be controlled from the launching shaft.

### **1.1.2.2 Pipe Ramming**

Pipe ramming is a non-steerable installation technique in which a pneumatic hammer is used to advance a steel casing through the earth using repeated percussive blows. The pipe being installed will typically be open-ended allowing the soil to enter the pipe during installation. Spoil inside the pipe can be removed either during the installation or after the installation is complete using an auger, compressed air, or water jetting. Like auger boring, pipe ramming is typically utilized to advance casing pipe along a straight line between a launching shaft and a receiving shaft.

### **1.1.2.3 Duct Installation In Jack and Bore Casing**

Once the casing is installed by one of the J&B methods discussed above, conduits are assembled into wheeled spacers and passed through the casing. The spacers, placed at approximate 5-foot intervals, serve to maintain the specified separation of conduits as required due to mutual heating and subsequent cable ampacity derating concerns. The casing is backfilled with a thermally engineered grout mixture and tied into the normal duct bank construction on each end. One spare per conduit per circuit will be installed with the J&B installations.

### **1.1.3 Independent Utility Bridge Installation Method**

The Independent Utility Bridge (Utility Bridge) to be installed at Ash Creek, Southport Harbor/Mill River and Sasco Creek will be constructed parallel to existing State and Local Roads primarily outside of the existing public road rights-of-way (ROW). The Utility Bridge crossing of the Metro North tracks near Naugatuck Avenue and Kent Street is outside the road rights-of-way.

Installation of the Utility Bridges consists of the following activities provided in sequential order:

- Clearing and grubbing
- Sheet pile construction
- Substructure construction
- Superstructure placement
- Cable and utility support placement
- Architectural cladding and roofing system installation
- Restoration and fencing.

#### **1.1.3.1 Clearing and Grubbing**

Prior to the start of construction at each crossing, clearing of the sites will be performed to accommodate the equipment and materials necessary to start construction. This work will take place on previously acquired parcels of property to provide adequate temporary and permanent work space.

#### **1.1.3.2 Sheet Pile Construction**

Sheet piling will be constructed along the edge of the substructure as shown on the Volume II drawings to avoid in water work while constructing the substructure.

#### **1.1.3.3 Substructure Construction**

The substructure components, i.e. abutments and temporary support pier bents, will be installed at the various locations utilizing temporary and permanent sheet piling to form the reinforced concrete abutments and drive piles where necessary for permanent and temporary structural measures. U-shaped wingwalls are used to confine the limits required to protect the buried portion of the duct bank as it approaches the bridge. The substructure components at the waterway crossings will be constructed to minimize wetland and watercourse fill. Additionally, all crossings adjacent to ConnDOT roadways are designed and will be constructed with a minimum 20-foot offset to accommodate future roadway widening and maintenance operations.

#### **1.1.3.4 Superstructure Placement**

The superstructure, which consists of the beam and bracing system that will support the transmission lines, will be placed in stages, depending on the length of the beams. The beams will be placed on the newly constructed substructure components and, where necessary, on temporary pier-pile bents. The placement of these beams will be performed using cranes located on either previously acquired properties or on State roadways during off-peak hours.

Once the superstructure system is set in place, netting will be placed under the superstructure to avoid materials and tools from dropping into the water. The utility supports will be connected to the system and the cable ducts will be placed across the structure.

#### **1.1.3.5 Cable and Utility Support Placement**

Once the superstructure system is set in place, the utility supports can be connected to the system and then the cable ducts can be placed across the structure. Fiberglass conduits to house the XLPE cables, grounding cables and signal and control fibers will be supported on the utility diaphragms in a predefined arrangement. Six 8-inch conduits will house each of the three cables of each circuit. Two 4-inch conduits will house signal and control fiber optic cables and two 2-inch conduits will contain the coated copper grounding cables. The fiberglass conduits will also be used within the approach duct banks and terminated at the first adjacent splicing vault.

Upon completion of the sub and superstructure construction, the utility bridge will be faced with an architectural cladding system and a roofing system.

#### **1.1.3.6 Architectural Cladding and Roofing System Installation**

Upon completion of the sub and superstructure construction, the utility bridge superstructure is aesthetically enhanced with architectural cladding and roofing, somewhat resembling a covered bridge. The primary function of the roofing and cladding system is to protect the conduits from ultra-violet light and subsequent solar heating that degrade the ampacity of the transmission cables. A ridge vent will be provided to allow heat emitted by the cables to escape, while the underside of the bridge is open to provide continuous airflow. Although the underside of the bridge is virtually open, a protective bird netting will be installed to discourage the nesting of birds and other animals.

#### **1.1.3.7 Restoration and Fencing**

All sites will be graded, seeded and planted to restore the surroundings as closely as possible to the pre-construction state. Protective fencing is used to enclose the elevated approach areas and restrict access to the bridges.

#### **1.1.4 Duct-Bank Installation**

Duct-bank installation, common to all three trenchless crossing methods, occurs at approaches to the specific crossings. 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
- permanent pavement restoration

#### **1.1.4.1 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). Alternate duct-bank configurations to avoid existing utilities will require slight variations in the width of pavement requiring saw cutting.

#### **1.1.4.2 Trench Excavation**

The standard duct-bank configuration requires excavation of a 4-foot wide trench to a minimum depth of 5 feet. This depth provides a minimum cover of 2.5 feet, as will be set forth in the General Encroachment Agreement between CL&P and ConnDOT. 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 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 ConnDOT, the Town of Westport and the City of Norwalk to facilitate the construction process and open up travel lanes during restricted construction periods. A soil management plan for handling spoil material removed during excavation will be issued.

Subsurface utility engineering (SUE), including the locating of potential conflicts with existing utilities, has been performed. Results of this study are incorporated on the Plan Drawings in Volume 2.

Excavations for relocations of existing utilities will be necessary at certain locations, and this work will be performed prior to trenching for duct-bank installation. The size of the work area necessary for excavations will vary by utility site-specific requirements. Steel plating will be used when necessary to maintain road availability. Site specific traffic plans will be developed for excavations and included in the MTP. Utilities scheduled for relocation are noted in the profile view of the Plan and Profile drawings of Volume 2. Specific measures for the relocation of existing utilities will be determined by the Owner of the existing utilities.

#### **1.1.4.3 Duct Placement**

Schedule 40 Polyvinyl Chloride (PVC) conduits to house the XLPE cables, grounding cables and signal and control fibers will be placed into the excavated trench in a predefined arrangement. Six eight-inch conduits will house each of the three cables of each circuit. Two 4-inch conduits will house signal and control fiber-optic cables and two 2-inch conduits will contain the coated copper grounding cables. 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 in Volume 2.

#### **1.1.4.4 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 ConnDOT and/or the municipality. Aggregate material will then be installed in multiple lifts with alternating compaction techniques.

#### **1.1.4.5 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.

#### **1.1.4.6 Permanent Pavement Restoration**

Permanent pavement restoration will be performed to standards outlined by ConnDOT and/or the municipality for locations within public roadway right-of-way (ROW). Restoration plans for vault locations located outside of the public ROW will be specific to each location. Restoration of Connecticut Department of Environmental Protection (DEP) property at the Housatonic River boat launch will be discussed with, and approved by, the DEP. For cases involving restoration other than pavement (i.e., landscaping), final restoration cannot occur until after the pulling and splicing operations have been completed.

### **1.2 CONDITIONS**

In addition to the *Requirements for a right-of-way development and management plan*, found in Sections 16-5-j-60 et seq. of the Regulations of Connecticut State Agencies, the Council stipulated certain requirements for the D&M plans in its Decision and Order for the Middletown-Norwalk 345-kV Project, in conditions 14-21. 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. Construction procedures will also be described in the *Method and Manner to Construct* filing that will be submitted to the Connecticut Department of Public Utility Control pursuant to Connecticut General Statutes §16-243. Permits from the U.S. Army Corps of Engineers and the Connecticut Department of Environmental Protection are required for the work proposed in this D&M Plan.

### **1.3 CONSULTATIONS**

CL&P consulted with municipal officials from the City of Milford, the City of Bridgeport, the Town of Fairfield and the Town of Westport and ConnDOT about watercourse and railroad crossings. Additionally, a copy of the draft Watercourse and Railroad Crossing D&M Plan was submitted to the municipalities and ConnDOT on June 12, 2006. The Director of Conservation for the Town of Fairfield, Mr. Thomas Steinke, provided written concerns in a letter dated August 13, 2006 to First Selectman Ken Flatto, pertaining to three of the seven crossings contained in this D&M Plan. A copy of this letter was provided to CL&P and is located in Appendix B.

#### **1.3.1 Milford**

No comments were received from Milford pertaining to watercourse or railroad crossings.

#### **1.3.2 Bridgeport**

Bridgeport submitted a letter, provided in Appendix B, on June 28, 2006 stating that they had no comments.

#### **1.3.3 Fairfield**

CL&P submitted a letter to William Hurley, engineer for the Town of Fairfield, on August 2, 2006 that presented a history of the engineering design changes for the three watercourse crossings in Fairfield as well as a review of the OLISP and U.S. Army Corps of Engineers permit processes. A copy of this letter is provided in Appendix B. A meeting was held on August 9, 2006 with officials from the Town of Fairfield and the City of Bridgeport to discuss the contents of the August 2, 2006 letter to William Hurley and to address concerns of municipal officials. The reasons why an Independent Utility Bridge (IUB) was chosen and why it was infeasible to use HDD for installation were discussed in detail.

A second meeting was held with the representatives of the Town of Fairfield and the City of Bridgeport on August 16, 2006 to specifically address the written concerns expressed by Mr. Steinke in his August

13, 2006 letter to First Selectman Ken Flatto referenced above. Each of the issues raised in Mr. Steinke's letter were discussed at the meeting. CL&P subsequently sent a letter (see Appendix B) dated August 23, 2006 to Mr. Flatto regarding its response to the various requests made with regard to modifications of the crossings at Ash Creek, Mill River, and Sasco Creek. CL&P was not able to accommodate the request for installation of a pedestrian bridge or to raise the IUB to allow pedestrian traffic under the structure due to concerns pertaining to:

- Cable safety
- CSC required best management practices for low Magnetic and Electric Field (EMF) design
- Indemnification/liability issues from CL&P and Bridgeport.

CL&P is continuing to work cooperatively with the Town of Fairfield to complete the details of addressing the Director of Conservation's remaining concerns and to allow the Town input on such issues as the selection of a color of paint for the IUB and landscaping.

#### **1.3.4 Westport**

No comments were received from Westport pertaining to watercourse or railroad crossings.

#### **1.3.5 ConnDOT**

ConnDOT submitted comments on the watercourse and railroad crossing plans in a letter dated July 13, 2006. These have been addressed in the Volume II drawings.

## **2.0 DRAWINGS AND SITE INFORMATION**

The seven crossings of watercourses and railroads included in this D&M Plan are located in the portion of the Project from the East Devon Substation in Milford to Father Conlon Place in Norwalk, exclusive of the UI portion of the Project. The total distance of these crossings is approximately 1.2 miles. The route in this portion of the Project is located primarily within existing municipal road and ConnDOT rights-of-way. CL&P performed and reported on extensive research on environmental conditions and cultural resources as part of the Docket No. 272 Application to the Council (the Application). Descriptive information regarding the existing conditions at the site and the modifications that will take place along this portion of the Project follows. This information is shown graphically on the drawings described below.

### **2.1 KEY MAP**

The locations of the crossings of watercourses and railroads are shown on the Key Maps on Figures 2.1(a) thru 2.1(c).

### **2.2 PLAN DRAWINGS**

In addition to the Key Map, this D&M Plan contains drawings showing the Plan and Profile for the transmission line construction using a scale of 1"=30'. The Plan and Profile drawings, located under separate cover in Volume 2, are organized by municipal name and stationing. Construction drawings specific to the trenchless method at each crossing are also provided in Volume 2 of this D&M Plan. The drawings in Volume 2 depict the engineering design for installation of the duct bank, location of existing underground utilities, ROW boundary, adjacent property owners and access points other than municipal roadways.

### **2.3 LAND OWNERSHIP**

A listing of landowners affected by installation of the trenchless methods at the seven crossings contained in this D&M Plan is provided in Table 2-1.

### **2.4 PUBLIC ROADS AND LANDS**

There are no public roads or surface lands crossed by the seven crossings of watercourses and railroads contained in this D&M Plan, with the exception of the DEP boat ramp located on the eastern bank of the Housatonic River.

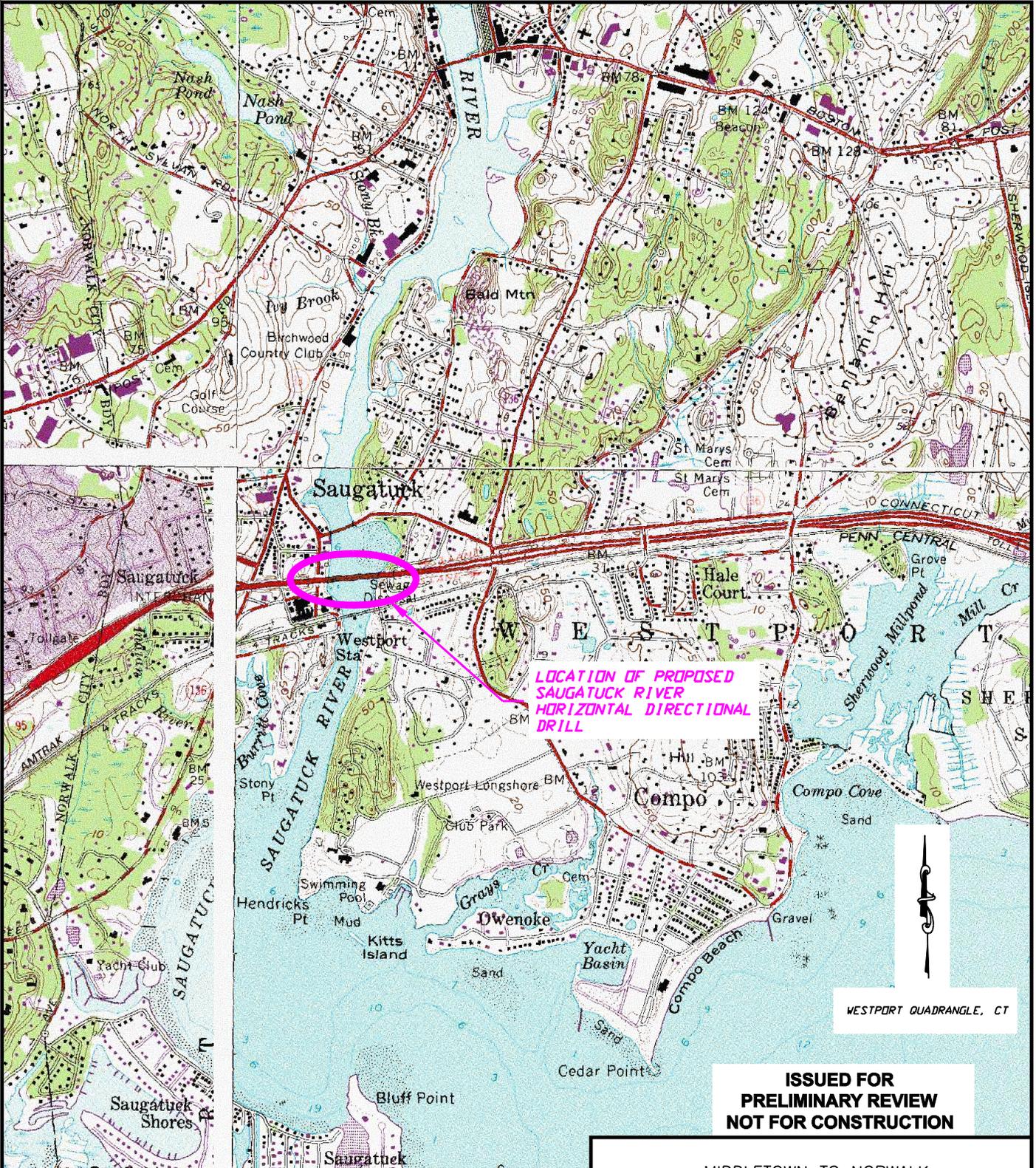
### **2.5 TOPOGRAPHY AND GRADING**

Locations where HDD and jack and bore installations will be used will be returned to pre-existing topographic conditions. There will be minor changes in topography at Utility Bridges due to use of an earthen approach to the abutments. There will be no significant change in grade at any of the seven crossings.

### **2.6 STRUCTURE AND FOUNDATION LOCATIONS**

The supports for the Utility Bridges are provided in the site specific construction drawings provided in Volume 2. There are no other design structure or foundation locations.

M:\NUSDC\30520\Cada\BRI\DC\_X\INGV-N\_PERMIT\VICINITY\_MAP\PDC\_vicinity.dwg (Sasco Creek) 04-07-2005 14:52 DDL B&MCD

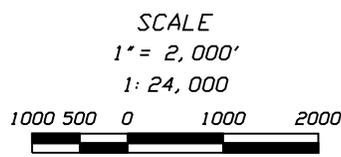


LOCATION OF PROPOSED  
SAUGATUCK RIVER  
HORIZONTAL DIRECTIONAL  
DRILL

**ISSUED FOR  
PRELIMINARY REVIEW  
NOT FOR CONSTRUCTION**

MAP SOURCE: ENVIRONMENTAL GIS  
DATA FOR CONNECTICUT TOPOGRAPHIC  
QUADRANGLE MAP FILES 2005

**KEY MAP**



MIDDLETOWN TO NORWALK  
345-kV TRANSMISSION PROJECT  
PROPOSED TRENCHLESS CROSSINGS

LOCATION: CITY OF NORWALK

COUNTY: FAIRFIELD

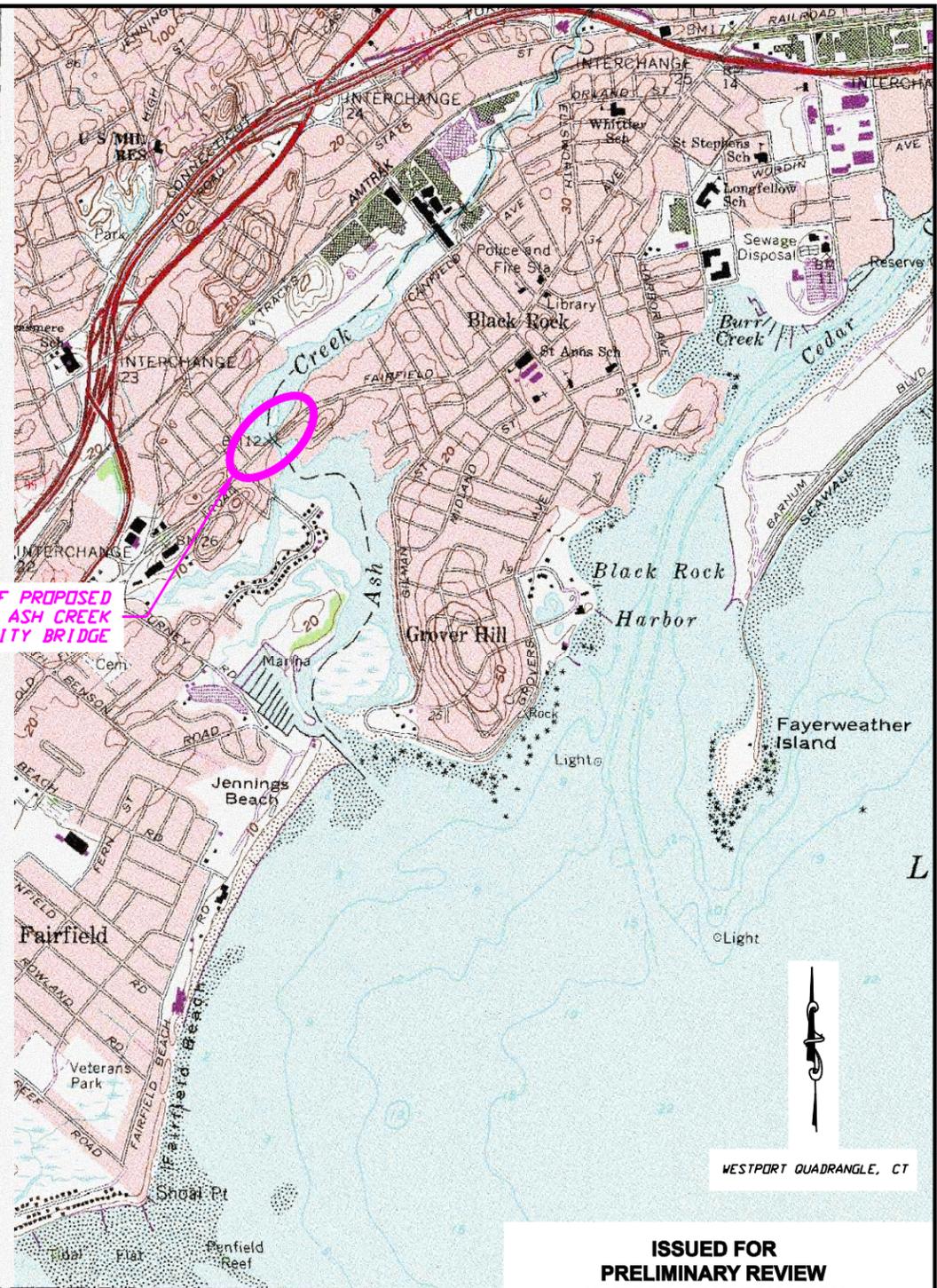
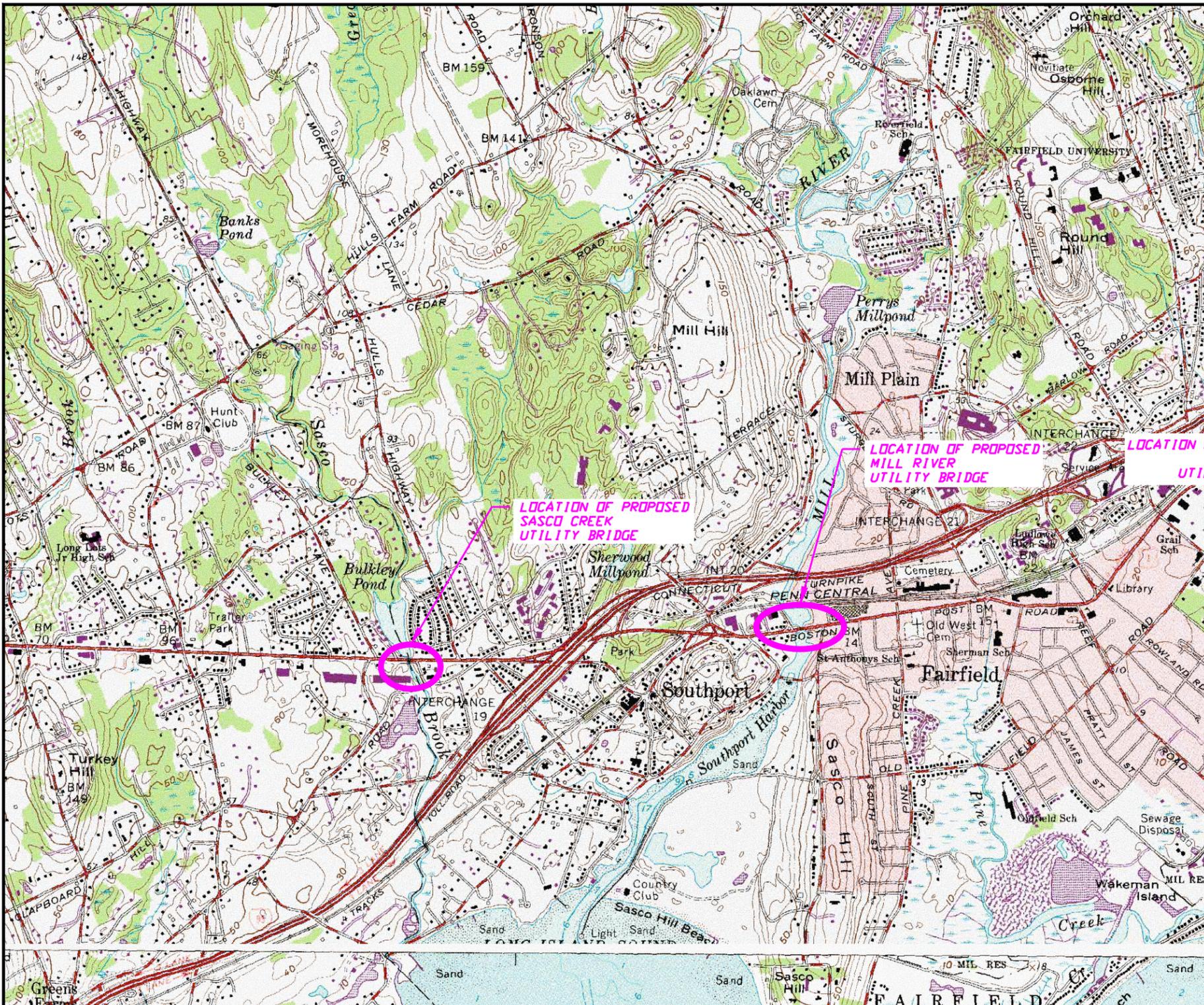
STATE: CT



FIGURE 2.1a

DATE: 05/26/06

N:\MSDCV\30520\CAD\BRIDGE\_XING\M-N\_PERMITVICINITY\_MAP\PTC\_VICINITY.dwg (Sasco Creek) 04-07-2005 14:52 DDL B&MCD

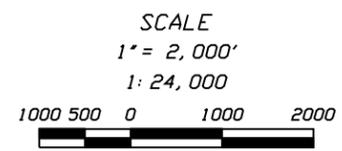


WESTPORT QUADRANGLE, CT

**ISSUED FOR  
PRELIMINARY REVIEW  
NOT FOR CONSTRUCTION**

MAP SOURCE: ENVIRONMENTAL GIS DATA FOR CONNECTICUT TOPOGRAPHIC QUADRANGLE MAP FILES 2005

**KEY MAP**



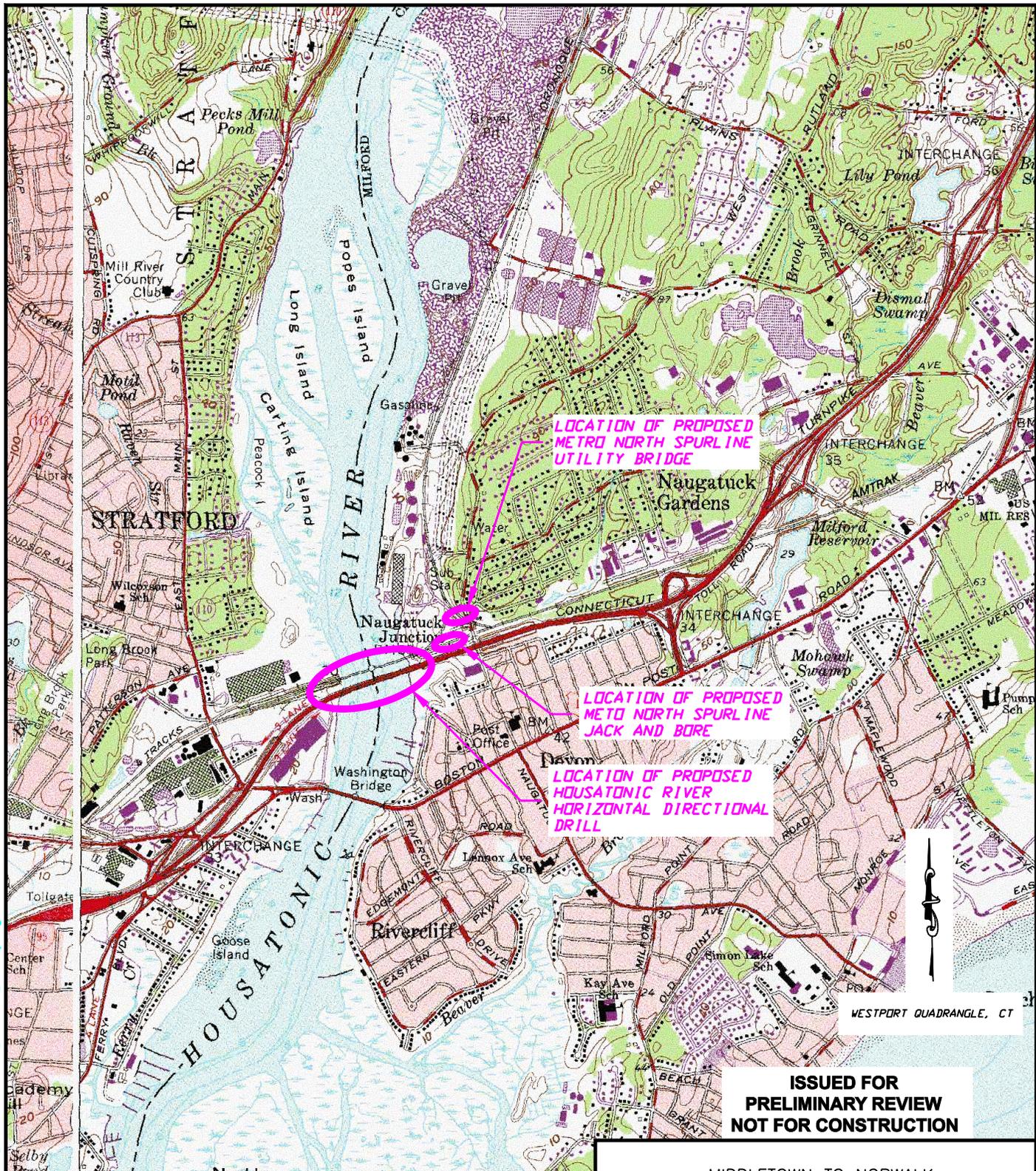
MIDDLETOWN TO NORWALK  
345-kV TRANSMISSION PROJECT  
PROPOSED TRENCHLESS CROSSINGS

LOCATION: TOWN OF WESTPORT, TOWN OF FAIRFIELD,  
CITY OF BRIDGEPORT  
COUNTY: FAIRFIELD STATE: CT

Connecticut  
Light & Power  
The Northeast Utilities System  
DATE: 05/26/06

FIGURE 2.1b

MANUSC01\_30520\_Cada\BRIIDGE\_XING\N-N\_PERMIT\VICINITY\_MAP\A.PDC\_vicinity.dwg (Sasco Creek) 04-07-2005 14:52 DDL B&M.C

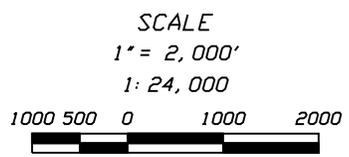


WESTPORT QUADRANGLE, CT

**ISSUED FOR  
PRELIMINARY REVIEW  
NOT FOR CONSTRUCTION**

MAP SOURCE: ENVIRONMENTAL GIS  
DATA FOR CONNECTICUT TOPOGRAPHIC  
QUADRANGLE MAP FILES 2005

**KEY MAP**



MIDDLETOWN TO NORWALK  
345-kV TRANSMISSION PROJECT  
PROPOSED TRENCHLESS CROSSINGS

LOCATION: TOWN OF STRATFORD, CITY OF MILFORD  
COUNTY: FAIRFIELD, NEW HAVEN STATE: CT



FIGURE 2.1c

DATE: 05/26/06

<b>Table 2-1. Land Owner Information for Parcels Requiring a New Easement</b>		
<b>Owner</b>	<b>Street Address</b>	<b>City/State/ZIP</b>
Westport Land Partners, L.L.C.	188 Post Road West (U.S. Route 1)	Westport CT. 06880
PMR Fairfield Holdings, L.L.C.	176 Post Road West (U.S. Route 1)	Westport CT. 06880
170Post Road West Corporation	170 Post Road West (U.S. Route 1)	Westport CT. 06880
The Catholic Church of Assumption	88 Riverside Avenue	Westport CT. 06880
The Catholic Church of Assumption	85 Riverside Avenue	Westport CT. 06880
The Town of Westport	Imperial avenue	Westport CT. 06880
The Westport Women's Club Incorporated	44 Imperial Avenue	Westport CT. 06880
Howard Juster	1850 Post Road East (U.S. Route 1)	Westport CT. 06880
Garafalo, Albert A.	3721 Post Road	Fairfield CT. 06824
David Square, LLC	3695 Post Road	Fairfield CT. 06824
Superior Plating Company	2462 Post Road	Fairfield CT. 06824
Olga G. Deising	2436 Post Road	Fairfield CT. 06824
Exide Group Inc c/o Inco US Inc. US Tax Group	2190 Post Road	Fairfield CT. 06824
Gorbach , David S. and Hausman, Joel	34 Post Road	Fairfield CT. 06824
Grasmere-Dimartino Properties, LLC	58 Post Road	Fairfield CT. 06824
Bridge Group	3528 Fairfield Avenue	Bridgeport CT. 06605
Paniccia, Americo and Livio R. (Americo Panechi) (Tenant - Blackrock Blue Bar)	3488 Fairfield Avenue	Bridgeport CT. 06605
UB Dockside, L.L.C.	955 Ferry Blvd	Stratford CT.
State of Connecticut	DEP boat launch on Housatonic at I-95	Milford CT.
State of Connecticut (Metro North Commuter Railroad - Operator)	Intersection of I-95 and Naugatuck Avenue	Milford CT.

## **2.7 ACCESS POINTS FOR CONSTRUCTION**

Access to the Project will be via municipal roads, adjacent parking lots and the access road to the boat launch on the Housatonic River that is owned and operated by the Connecticut Department of Environmental Protection (DEP). The DEP has been consulted concerning use of the boat launch and its associated access road. Both the HDD contractor and civil contractor will be required to acquire permits from DEP to perform work in the access road and at the boat ramp.

## **2.8 VEGETATION AND CLEARING**

Limited clearing will be required for areas on one or both banks of the Saugatuck River, Sasco Creek, Southport Harbor, Ash Creek and for both Metro North crossings. Locations where clearing will take place are noted on the Plans and Profiles in Volume 2.

## **2.9 ENVIRONMENTALLY SENSITIVE AREAS**

The environmentally sensitive areas associated with the seven crossings are narrow strips of wetlands along Ash and Sasco Creeks and Southport Harbor (Mill River). The HDD entry and exit holes for both the Housatonic and Saugatuck River crossings are located in asphalted parking areas. The two Metro North line crossings are located in a highly developed corridor near Naugatuck Avenue.

## **2.10 EXISTING UNDERGROUND UTILITIES**

Subsurface utility engineering (SUE) has been performed for the underground portion of the Project inclusive of areas adjacent to the seven watercourse and railroad crossings. All utilities noted during this study are included in the Plan and Profile Drawings in Volume 2.

## **2.11 STAGING AREA AND CONSTRUCTION FACILITIES**

The staging areas for materials and equipment for construction of the seven watercourse and railroad crossings have yet to be determined. Municipal consultation with regards to available areas has commenced and final locations will be determined after consultation with the company selected as the civil contractor. Material staging areas proposed for use will be submitted to Council staff for review and approval prior to their use through the Change Approval Process described in Appendix E of this Plan.

### **3.0 CONSTRUCTION INFORMATION**

This section contains information concerning construction practices and mitigation measures related to the construction and installation of the duct bank at five watercourse and two railroad crossings located in the underground portion of the Project from the Singer Substation in Bridgeport to Father Conlon Place in Norwalk, exclusive of the UI portion.

#### **3.1 TIMBER AND SNAG TREES**

There will be no clearing of marketable timber within or adjacent to the route of the cable system for the seven crossings presented in this Plan. There is no need for snag tree management due to the developed nature of the route in the vicinity of the seven watercourse and railroad crossings.

#### **3.2 CONSTRUCTION AND REHABILITATION PROCEDURES**

Construction and rehabilitation 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**

There are five watercourse crossings in CL&P's section of the underground portion of the Project. Three of the crossings will use Utility Bridges, or utility bridges. These include Ash and Sasco Creeks and Southport Harbor. The Housatonic and Saugatuck River crossings will be performed using HDD. Descriptions of the Utility Bridge and HDD methodologies are provided in Section 1.1 above. The Monitoring Plan for HDD installations is provided in Appendix C.

Wetlands impacted by construction of the underground portion of the Project are in narrow strips adjacent to Ash and Sasco Creeks and Southport Harbor. The wetlands will be impacted by the installation of the supports for the Utility Bridges and open ditch construction of the duct banks to the Utility Bridge approaches. One hundred foot buffers will be used entering and exiting wetlands. Work will be restricted to the minimum area necessary in the buffers and certain activities, such as fueling and storage of hazardous materials, will be prohibited.

CL&P has consulted with the DEP, Office of Long Island Sound Programs (OLISP) concerning wetland and watercourse crossings in the underground portion of the Project and an application for a Structures, Dredging and Fill and Tidal Wetlands Permit from OLISP has been filed. A copy of the permit will be provided to the Council when it is issued.

##### **3.2.2 Sedimentation and Erosion Control Procedures**

The sediment and erosion control procedures are located in Appendix D. The procedures comply with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control*.

##### **3.2.3 Precautions for Protected Species**

Pursuant to consultation with the DEP personnel and review of the Natural Diversity Database, there are no federal or state protected species located along at any of the seven crossings presented in this Plan.

##### **3.2.4 Restoration of Hydrologic Features**

Construction and installation of the duct bank at the seven watercourse and railroad crossings will require minor permanent changes to the wetlands at Ash and Sasco Creeks and Southport Harbor. The areas where permanent impacts to wetlands will occur are shown in Volume 2. Incidental impacts to wetlands

adjacent to the ROW and at the base of the approaches will be restored as described in Section 3.2.10 and Appendix D.

### **3.2.5 Protection of Cultural Resources**

CL&P contracted with Raber and Associates to perform a Cultural Resources Assessment Survey as part of the Application to the Council. Locations of sensitive, or potentially sensitive, cultural resources were identified during the Phase I survey. Further studies performed during Phase II Field Reconnaissance will be used to assess potential effects on these sensitive resources.

The protocol for the survey, as well as the results, will be coordinated with the Connecticut Department of Culture and Tourism, State Historic Preservation Office. Correspondence with the State Historic Preservation Officer (SHPO) will be provided to Council staff as it is available and prior to construction.

### **3.2.6 Herbicide Use**

No herbicides will be used for installation and construction of the cable system at any of the seven crossings presented in this Plan.

### **3.2.7 Public Recreation Areas**

There is one designated open space south of the Ash Creek crossing location (See Segment 56 of Volume 9 of the Application), one designated open space south of the Sasco Creek crossing location (See Segment 58 of Volume 9 of the Application), both in Fairfield, and one open space north of the Saugatuck River crossing in Westport on the eastern bank (See Segment 61 of Volume 9 of the Application). None of these open areas will be directly impacted by the Project.

### **3.2.8 Disposal and Maintenance Procedures**

The Contractor will remove all construction debris and excess soil and dispose of it in accordance with local, state, and federal regulations. No burning will occur as a result of construction or installation of the duct bank.

All contaminated spoil removed and/or groundwater encountered from installation of the Project will be handled by CL&P's contractors in accordance with local, state, and federal laws and regulations.

CL&P has developed a draft soil and groundwater handling plan for the underground portion of the project to deal with collection, treatment and disposal of soil and groundwater designated polluted or contaminated, as defined by the DEP. The results of the Phase II assessment by CL&P indicate that most, if not all, of the groundwater that will be encountered during construction of the Project will require treatment as polluted or contaminated water. The soil and groundwater handling plan will not be completed until a civil contractor has been selected and provides input into the site-specific planning of soil and groundwater issues based on the results of the Phase II assessment. A copy of the final soil and groundwater handling plan will be provided to Council staff.

### **3.2.9 Blasting Procedures**

No blasting is required for construction and installation of the seven crossings.

### **3.2.10 Rehabilitation Plans**

Because the cable system will be installed primarily beneath existing roadways, it will be subject to a rigorous rehabilitation protocol reviewed and approved by ConnDOT and the municipalities. All roadways, curbs and other adjacent properties or structures impacted by construction and installation of the duct bank will be returned to condition equivalent to pre-existing conditions. Areas between the curb and the approaches to the Utility Bridges will be restored to original topography and land use. If wetlands

are contained in the zone between the street and the Utility Bridge approaches they will be restored as described in Section 5.4.1 of Appendix D.

Any landscaped vegetation not permanently displaced by installation of the Utility Bridges will be replaced in-kind based on variety, number and size of plants. All grassed areas will be returned to pre-existing condition, including variety and density. Additional landscaping may occur as aesthetic screening at the Utility Bridges to minimize the visual impact of the aboveground structures.

The entry and exit points for both HDD crossings are located in asphalt or gravel paved parking lots. The parking surfaces will be restored to pre-construction conditions.

The entry and exit points for the jack and bore of the Metro North railroad crossing are located in areas surfaced by rail ballast. These areas will be restored to pre-construction conditions.

### **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**

The staging and laydown areas for this work are currently being identified as described in Section 2.11. CL&P will notify the Council when areas are identified in accordance with Section 16-50j-62(a) of the Regulations of Connecticut State Agencies.

### **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 the beginning of construction at the site.

#### **4.2.2 Notice of Changes to the D&M Plan**

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, is described and depicted in Appendix E.

#### **4.2.3 Notice of Completion**

CL&P will provide the Council written notification of the completion of construction and site rehabilitation for crossings of the watercourses and railroads in the underground segments.

### **4.3 NOTICE TO MUNICIPALITIES**

CL&P will provide written notification to the Chief Elected Official of the municipalities at least three weeks prior to the beginning of construction. CL&P will also notify the Chief Elected Officials when the work is complete.

### **4.4 NOTICE TO LANDOWNERS**

CL&P will provide written notification to adjacent landowners a minimum of two weeks prior to the beginning of construction.

### **4.5 MONTHLY REPORTS**

CL&P will provide the Council with written monthly progress reports which 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 are required because of the property rights of underlying and adjoining owners or for other reasons.
3. Location of non-transmission materials which have been left in place.
4. Actual construction cost of the facility, including but not limited to the cost of the following:
  - Clearing and access
  - Construction
  - Rehabilitation

## 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 and the related permits.

### 5.1 DECISION AND ORDER CHECKLIST

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 Plan, or a statement if not applicable to this specific Plan for crossings of watercourses and railroads in the underground segments. Because the modifications are to an existing upland site, many of the elements are not applicable to these crossings.

ITEM FROM DECISION	LOCATION/APPLICABILITY
<b>14. D&amp;M Elements</b>	
a. Detailed site plan showing access roads, foundations, staging areas for overhead route	Not Applicable (no overhead)
b. Detailed site plan showing splice-vaults, duct banks, staging areas for underground route	Volume 2
c. Identification of HDD and Jack and Bore sites for underground	Volume 2, Sections 1.1 and 3.2.1
d. Erosion and Sediment Control Plan	Appendix D
e. Provisions for crossing wetlands and watercourses	Section 3.2.1
f. Vegetation Clearing Plan	Section 2.8
g. Wetland Restoration Plan	Section 3.2.10, Appendix D
h. Invasive Species Management Plan	Not Applicable (no invasive vegetation)
i. Plan for Pre-Construction Survey for species of concern	No species identified by USFWS or DEP as occurring at any watercourse or railroad crossings
j. Post-construction EMF Monitoring Plan	Section 5.2
k. Fencing of vernal pools; buffer around wetlands	Section 3.2.1
l. Inland Wetlands Restoration Plan	Section 3.2.10, Appendix D
m. Monitoring and Operations Plan for each water crossing	Appendix C
n. Traffic Management Plan	Volume 3
o. Blasting Plan	Section 3.2.9 (no blasting anticipated)
p. Groundwater Best Management Practices	Section 3.2.4

q. Identification of staging areas	Section 2.11 and 4.1
r. May spread excavated material in uplands Stockpile excavated soil from wetlands	Not Applicable
s. Limit conductor installation sites to cleared right-of-way, not in wetlands	Not Applicable (no overhead conductors)
t. Plan to remove or adjust selected structures	Not Applicable (no structures for overhead lines to be removed or adjusted)
<b>15. DEP Consultation</b> (river crossings)	Section 3.2.1
<b>16. Regional Water Authority (RWA) Conditions</b>	Not Applicable (not on RWA property)
<b>17. Documentation of DOT Encroachment Permit Process</b>	Appendix F
<b>18. Provide the Following Permits Prior to Construction</b> (Public Health, OLISP, Water Crossings)	Section 3.2.1 (OLISP Permit to be provided)
<b>19. Waste Management Permits</b>	Section 3.2.8
<b>20. Independent Environmental Consultant</b>	Section 3.2.11
<b>21. Phase II Archeological Reconnaissance Survey</b>	Section 3.2.5

## 5.2 SUPPLEMENTAL PLANS AND INFORMATION

The Traffic Inventory Report, a precursor to the Traffic Maintenance and Protection Plan, has been provided in Volume 3.

With regard to magnetic fields, item 12 of the Council’s Decision and Order states that, “[w]here the underground portions of the line are in the vicinity of facilities listed in Conn. Gen. Stat. § 16-50p(i), the Certificate Holders are directed to utilize measures necessary to ensure that public health and safety is protected no less than in the vicinity of statutory facilities adjacent to the approved overhead portions of the line.” There are no statutory facilities in the immediate vicinity of the seven crossings contained in this D&M plan.

Item, 14(j) requires preparation of a post-construction EMF monitoring plan. 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 and installation of the duct bank, from survey to energizing, will take approximately 42 months for crossings of the watercourses and railroads in the underground segments. The following items summarize the projected schedule:

- |                                           |                                 |
|-------------------------------------------|---------------------------------|
| • Survey                                  | May, 2005 - March, 2006         |
| • Engineering                             | June, 2005 - December, 2006     |
| • Procurement                             | October, 2006 - August, 2007    |
| • Fabrication/delivery of large equipment | December, 2006 - March, 2008    |
| • Civil work                              | December, 2006 - May, 2008      |
| • Landscaping                             | March, 2008 - November, 2008    |
| • Cable installation                      | July, 2007 - September, 2008    |
| • Testing                                 | October, 2008 - November, 2008. |

Construction activities are expected to take place during state and municipally approved hours using a 60-hour work week consisting of six 10-hour days per week with some overtime, if necessary.

## **APPENDICES**

- A Selected Portions of Decision and Order**
- B Monitoring Plans for the Housatonic and Saugatuck River Crossings**
- C Sediment and Erosion Control Plan**
- D D&M Plan Change Approval Process**
- E Documentation of Use of Connecticut Department of Transportation Encroachment Agreement**

**APPENDIX A**

**DOCKET 272**

**SELECTED PORTIONS OF DECISION AND ORDER**

## APPENDIX A

### DOCKET 272

#### SELECTED PORTIONS OF DECISION AND ORDER

14. The Certificate Holders shall not commence construction of the overhead and underground electric transmission system until securing Council approval of a D&M Plan, consistent with the Regulations of Connecticut State Agencies Section 16-50j-60 through Section 16-50j-62 and which includes the following elements:
  - a. A detailed site plan showing the placement of the access roads, structure foundations, equipment and material staging area for the overhead route;
  - b. A detailed site plan showing the underground route, splice boxes, provisions for underground cable protection, and equipment and material staging area;
  - c. Identification of horizontal directional drill and jack and boring sites;
  - d. An erosion and sediment control plan, consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control as amended for both overhead and underground routes;
  - e. Provisions for crossing inland wetland and watercourses for both overhead and underground routes;
  - f. Vegetative clearing plan;
  - g. A wetland restoration plan;
  - h. Invasive species management plan;
  - i. A Plan for a pre-construction survey for all other endangered, threatened and species of special concern, flag areas of mudwort and bayonet grass, sweep areas for eastern box turtle and wood turtle prior to construction and abide to construction periods as outlined by the DEP Wildlife Division;
  - j. A post-construction electric and magnetic field monitoring plan;
  - k. A plan for installing construction fencing at vernal pools near construction activities and a buffer area be established around inland wetlands;
  - l. An inland wetlands restoration plan;
  - m. Monitoring and Operations Plan for each water body crossing;
  - n. A traffic control plan to include scheduling of construction hours during nights and/or weekends and mitigation of lighting and noise;
  - o. A blasting plan
  - p. Groundwater best management practices plan;
  - q. Identification of developed areas for staging and equipment lay down, field office trailers, sanitary facilities and parking before establishing a new area;
  - r. Excavated material in upland construction may be allowed to be graded in proximity to the structure and excavated soil in wetland construction shall be stockpiled in an upland area for use in wetland restoration;
  - s. Conductor installation sites shall be within the existing ROW, use of existing cleared areas, to the extent possible, and pulling sites will not be allowed in wetlands;
  - t. A plan for the following: structure #4010 may be eliminated; in Woodbridge, details on removal of structure #3920 and new poles may be eliminated in the area of wetland #133; a number of structures within wetland #70 adjacent to Tamarac Swamp in Wallingford may be reduced, especially structures #8769 and 8800; and a set of existing pole structures immediately adjacent to the Farmington Can Recreational Trail in Hamden could be removed.

15. The Certificate Holders are directed to consult with DEP on the following matters:
  - a. Concerning horizontal directional drill and the jack and bore crossing techniques;
  - b. Forging streams; and
  - c. Construction scheduling at the Milford boat launch and the line should be sited so as to not interfere unreasonably with any future maintenance needs.
  
16. The Certificate Holders shall abide to the following Regional Water Authority (RWA) conditions:
  - a. Shall provide all information necessary for the RWA to prepare a DPH Change in Use Application and Revocable License Agreement for the construction activities on RWA owned watershed land.
  - b. Shall prepare a Stormwater Pollution Prevention Plan (SWPPP) during the development of the Development and Management Plan (D&M Plan). The D&M Plan shall be prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control.
  - c. Refueling of construction equipment on public water supply watershed and aquifer areas shall only be conducted over portable spill container areas. Absorbent spill response materials shall be readily available on-site. The RWA shall be immediately notified of any hazardous material spills or other water quality incidents on its public water supply watershed or aquifers.
  - d. Any fuel, oils, paints solvents, or other hazardous material stored on-site during the construction process shall be in a secure area with at least 100 percent secondary containment.
  - e. Submittal of an Integrated Pest Management Plan for long-term maintenance of right-of-ways and submittal of an annual summary of pesticide use and other maintenance activities on RWA property.
  - f. If blasting is required, pre-blast surveys of RWA facilities shall be done, recording seismographs shall be in place during blasting and copies of the survey and sand seismograph results shall be provided to the RWA.
  - g. Provision of reimbursement for reasonable costs incurred by the RWA regarding review and inspection of the Project, including costs for review by its special consultants, and costs associated with designing and relocating the RWA's facilities, if required.
  - h. Preliminary and final D&M Plans shall be provided to the RWA for its review comments. The RWA shall be allowed at least 30 days to review and comment.
  - i. The RWA shall receive between three and five days notice prior to commencement of construction activity on public water supply watershed or aquifers, or in the vicinity of RWA facilities.
  
17. The Certificate Holders shall use the DOT encroachment permit process developed for Docket No. 217 project as a template.
  
18. The Certificate Holders shall provide the following permits prior to the commencement of construction:
  - a. Department of Public Health change-in-use permit;
  - b. Office of Long Island Sound Programs (OLISP) coastal permits for the Singer and East Devon Substations; and
  - c. DEP water body crossing permits.

19. The Certificate Holders shall obtain necessary waste management permits for activity in any solid waster disposal areas and remove and dispose of contaminated soil per municipal, state and federal regulations.
20. The Certificate Holders shall hire an independent environmental consultant, subject to Council approval, to monitor and report on the installation of the overhead and underground transmission system.
21. The Certificate Holders shall conduct a Phase II Archeological Reconnaissance Survey in consultation with the Connecticut Historical Commission prior to construction.

**APPENDIX B**  
**MUNICIPAL CORRESPONDENCE**



# CITY OF BRIDGEPORT ENGINEERING DEPARTMENT

CITY HALL - 45 Lyon Terrace  
Bridgeport, Connecticut 06604-4023  
Telephone (203) 576-7211  
Fax (203) 576-7154

**BARRY W. SKINNER, P. E.**  
City Engineer

**MORIEZA HAYATGHEYBI**  
City Traffic Engineer

June 28, 2006

Mike Nidoh, Director  
Office of Planning  
Bridgeport, Connecticut 06604

Re: **Ash Creek Watercourse Crossing – 345kV  
60% Development and Management Plans Dated 6/01/06**

Dear Mike:

Please be advised that we have reviewed the above-mentioned plans and have no engineering or traffic related comments.

Very truly yours,

Barry W. Skinner, P.E.  
City Engineer

BWS/JPU/p

c: George Estrada, Public Facilities  
Ted Grabarz, Public Facilities  
Jon P. Urquidi  
Melanie Howlett, City Attorney's Office



**Connecticut  
Light & Power**

The Northeast Utilities System

107 Selden Street, Berlin CT 06037

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

August 2, 2006

Mr. William Hurley  
Town of Fairfield  
Engineering Department  
John J. Sullivan Independence Hall  
611/725 Old Post Road  
Fairfield, CT 06824

RE: Middletown-Norwalk 345 kV Utility Bridges over Sasco Creek, Mill River/Southport Harbor, and Ash Creek within the Town of Fairfield

Dear Mr. Hurley,

This letter and attached material evidences the progression of Connecticut Light and Power's (CL&P) decision to utilize utility bridges as the crossing method for the waterways of Sasco Creek, Mill River/Southport Harbor, and Ash Creek located within the Town of Fairfield, Connecticut. Historical documentation regarding environmental permitting filings for the Connecticut Department of Environmental Protection (DEP) Office of Long Island Sound Programs (OLISP) and the United States Army Corps of Engineers (ACOE) permit, correspondence from the Connecticut Department of Transportation (ConnDOT) and geotechnical investigation results are included.

CL&P filed the original OLISP permit application in July 2004 and amendments in April 2005, February 2006, and May 2006. CL&P filed the original ACOE permit application in May 2005 and amendments in February 2006 and May 2006. The original filings and subsequent amendments relating to the above referenced crossings within Fairfield are discussed below.

### **Sasco Creek**

#### **OLISP**

The underground cable crossing of Sasco Creek is located on the western boundary of the Town of Fairfield and the eastern boundary of the Town of Westport at the crossing of US Route 1.

The original OLISP filing (July 2004) included crossing Sasco Creek utilizing pipes suspended below the ConnDOT owned and maintained US Route 1 bridge (see Section C of the OLISP



middletown | norwalk

filing). Alternative crossing methods listed included Horizontal Directional Drill (HDD) and a self-supporting structure, or utility bridge (see Section M). Spatial limitations associated with utilizing an HDD for the crossing are also discussed in Section M of the OLISP application.

An amendment to the OLISP permit application was filed in April 2005 to change the cable technology from High Pressure Fluid Filled (HPFF) cable to Cross-Linked Polyethylene (XLPE) cable.

A second amendment was filed with OLISP in May 2006 to change the proposed crossing of Sasco Creek to a utility bridge located south of the existing Route 1 bridge. The change was a result of an October 13, 2005 ConnDOT letter denying attachment of cables associated with the Middletown-Norwalk Transmission project to any existing bridges.

### ACOE

The original ACOE filing (May 2005) involved crossing Sasco Creek via attachment of cables to the existing US Route 1 bridge. After receiving ConnDOT notification denying CL&P's request to attach cables to existing bridges an addendum to the permit was filed in February 2006 requesting a single span utility bridge crossing of Sasco Creek.

### General

CL&P's original preference was to cross Sasco Creek by attaching cables to the existing US Route 1 bridge. CL&P spent considerable time discussing technical issues of attaching cables to ConnDOT bridges. Unfortunately ConnDOT would not permit attachment of the cables to bridges and alternative methods needed to be investigated. Field investigations with trenchless crossing consultants ruled out HDD as a viable crossing method due to spatial limitations of the site. These include:

- HDD crossing on the north side of Route 1 is not possible due to the proximity of the Sasco Creek Mill building to the ConnDOT roadway. The building shares a foundation with the western bridge abutment.
- An HDD to the south would require drilling under the foundations of the building located on the eastern side of Sasco Creek (3695 Post Road). This would require the CL&P purchase and eventual demolition of the property to avoid the risk of damaging the existing building foundations.
- ConnDOT will not allow an HDD in the outside lanes of Route 1 as this would require passing below the existing bridge abutments as well as long term (2-3 month) lane closures.

## Mill River/Southport Harbor

### OLISP

The original OLISP filing (July 2004) included crossing Mill River/Southport Harbor utilizing pipes suspended below the ConnDOT owned and maintained US Route 1 bridge (see Section C of OLISP filing). This filing included an alternative HDD crossing. Additional discussions regarding this method were presented in Section M including:

- More difficult construction. The use of HDD would require a 479-foot-long drill to accomplish the 89-foot-wide Mill River crossing.
- Potential for social effects. An HDD crossing could require several months to construct, during which time the staging areas within and adjacent to Route 1 would be in continuous use. Such staging areas would affect traffic patterns and adjacent land uses.
- Construction time and cost. The HDD method would require more time to construct and would be less cost-effective.

The February 2006 OLISP permit application amendment was filed subsequent to receiving ConnDOT notification denying the request to attach cables to existing bridges. This amendment listed HDD (outside DOT ROW) as the proposed crossing method and a utility bridge crossing as the alternative.

The May 2006 OLISP permit application amendment was filed proposing a utility bridge crossing after geotechnical explorations had determined the feasibility of an HDD crossing was questionable. Specifically,

- Subsurface exploration indicates that mixed face soil conditions are present, resulting in a drilled path that would pass through shallow bedrock and then into alluvial soils, which significantly increases the risks for overshooting the HDD exit points,
- This soil condition could result in substantial amounts of drilling mud entering the waterways.
- In order to alleviate the limited work space problem, CL&P would have to purchase and demolish the existing structure at 2462 Post Road to have enough room to perform the HDD crossing.

### ACOE

The original ACOE filing (May 2005) proposed crossing Mill River/Southport Harbor via attachment of cables to the existing US Route 1 bridge. After receiving ConnDOT notification denying CL&P's request to attach cables to existing bridges, an addendum to the ACOE permit



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was filed in February 2006 proposing an HDD crossing with the staging and drilled paths located to the north of US Route 1. The alternate crossing method of a utility bridge was proposed in this amendment.

The May 2006 ACOE permit application amendment was filed with the ACOE following the geotechnical exploration results questioning the feasibility of an HDD crossing. This amendment requested the adoption of a utility bridge as the proposed crossing method due to the items presented in detail above.

### General

Again CL&P's original preference was to cross Mill River/Southport Harbor by attaching cables to the existing US Route 1 bridge. ConnDOT's refusal to permit the attachment of cables to bridges required CL&P to investigate alternative crossing methods. HDD was investigated as a potential crossing method and ruled out due to spatial limitations and environmental concerns leaving a self supporting utility bridge as the only viable method for crossing the Mill River/Southport Harbor.

### Ash Creek

#### OLISP

The crossing of Ash Creek is located on the eastern boundary of the Town of Fairfield and the western boundary of the City of Bridgeport at the crossing of US Route 1.

The original OLISP filing (July 2004) included crossing Ash Creek utilizing in-street trenching across the ConnDOT owned and maintained US Route 1 bridge (see Section C of the OLISP filing). The HDD crossing method is discussed as an alternative method and includes discussion of potential adverse items including:

- More difficult construction. The use of HDD would require a 489-foot-long drill to accomplish the 150-foot-wide Ash Creek crossing.
- Potential for social effects. An HDD crossing could require several months to construct, during which time the staging areas within and adjacent to Fairfield Avenue would be in continuous use. Such staging areas would affect traffic patterns and adjacent land uses.
- Construction time and cost. The HDD method would require more time to construct and would be less cost-effective.

The April 2006 OLISP permit application amendment changed the proposed crossing method to HDD within ConnDOT ROW due to potholing investigations performed on the bridge indicated inadequate cover available to maintain a minimum 30" cover as required by ConnDOT in roadways. Also, additional investigation of the Ash Creek bridge indicated significant problems associated with aging and the necessity for eventual ConnDOT replacement. The alternative



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crossing method of a self-supporting structure (utility bridge) was presented in Section M of this amendment.

The February 2006 amendment to the OLISP permit application was filed to change the location of the HDD crossing from ConnDOT ROW onto private property on the north side of US Route 1. The location shift was due ConnDOT's denial to allow long term lane closures and the hazards associate with drilling under the existing bridge abutments set on wooden piles.

The May 2006 amendment to the OLISP permit application was filed to change the proposed method of the Ash Creek crossing to a self supporting utility bridge due to completion of the geotechnical explorations in the area. The Ash Creek geotechnical exploration findings were:

- Subsurface exploration indicates that mixed face soil conditions are present, resulting in a drilled path that would pass through shallow bedrock and then into alluvial soils, which significantly increases the risks for overshooting the HDD exit points,
- This soil condition could result in substantial amounts of drilling mud entering the waterways.
- In order to alleviate the limited work space problem, CL&P would have to purchase and demolish the existing structure at 58 Post Road to have enough room to perform the HDD crossing. Additionally, the business located in Bridgeport on the north side of Route 1 and east side of Ash Creek would not have a parking lot for a 2-3 month period as the HDD staging operation would encompass the full extents of the property.

### ACOE

The original ACOE filing (May 2005) proposed crossing Ash Creek via HDD within ConnDOT Rights of Way with the staging and drilled paths located within US Route 1. Again, ConnDOT would not allow long term lane closures nor drilled segments under the aging bridge abutments set on wooden piles.

An amendment to the ACOE permit filing was submitted in February 2006 proposing an HDD crossing along the north side of US Route 1 on private property. In this amendment a utility bridge crossing was proposed as an alternate method.

Subsequent work associated with geotechnical explorations and finalizing HDD design determined the feasibility of an HDD crossing was in question for the reasons identified above. This reasons led to the May 2006 amendment of the ACOE permit application requesting a utility bridge as the proposed crossing method.



General

CL&P's initial in-street crossing method and the alternative HDD crossing method would not be permitted by ConnDOT resulting in a utility bridge crossing of Ash Creek as CL&P's only feasible method of crossing Ash Creek. Inadequate subsurface conditions for an HDD coupled with an aging bridge in need of replacement forced investigations of alternatives leading to the current proposal of a utility bridge crossing.

The attached documentation provides information that CL&P investigated all feasible XLPE cable crossing alternatives for Sasco Creek, Mill River/Southport Harbor and Ash Creek within the Town of Fairfield. The only feasible method of crossing these water courses is by self supporting utility bridges. Please direct any questions the Town of Fairfield may have concerning the proposed utility bridge crossings of the above referenced waterways to Mr. Scott Newland of Burns & McDonnell, who is providing engineering services for the Middletown Norwalk Project.

Sincerely,



Anne Bartosewicz  
Project Director, Middletown Norwalk Project

cc: Thomas Steinke w/enclosures

To: K. Flatto, First Selectman  
From: Thomas J. Steinke, Conservation Director  
Subject: Summary of Fairfield concerns regarding the 345kV transmission line over Ash Creek, Mill River, and Sasco Brook.  
Date: August 13, 2006

Ken:

As discussed at our meeting of August 9 with CL&P/UI and August 11 with town staff, the following report summarizes the principle points of our review and represents the revisions we will seek from CL&P/UI prior to Fairfield's endorsement of the 345 kV applications to state and federal regulatory agencies.

I have prefaced the report with Rich White's summary of the plan revisions we discussed at our meeting last Friday morning. Because the reviews of the 345kV project by the Conservation and Shellfish Commissions will be significantly time-limited, I have added background information to this report on the concepts and issues of importance so that the commission's concerns may be more easily understood by the regulatory agencies, i.e., Connecticut Siting Council, DEP, and Corps of Engineers. I anticipate that the Conservation and Shellfish commissions will vigorously oppose the present designs for river crossings in Fairfield until the plans are revised to reflect the town's interests as described below.

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Rich White's summary:

The following are notes of the draft comments on our meeting last Friday morning that describe the conditions that the Town wants to be met on the construction of the three bridges :

**ASH CREEK** We are concerned about the loss of the effectiveness of our existing public access easements for fishing and crabbing, and the visual impact.

- (1) Six foot wide deck structures should be built around both abutments to provide public access for fishing and crabbing.
- (2) A pedestrian deck / walkway with an adequate railing should be constructed on top or on the side of the utility bridge, for its full length. Access must be provided to the river bank on at least the Fairfield side. Fairfield will be willing to accept responsibility for the pedestrian access deck..
- (3) We expect to have input on the color and exterior look of the bridge. The sides should be sprayed with a graffiti proof coating.
- (4) No work can occur directly in the water during the shellfish spawning season June 15<sup>th</sup> to October 15. Obviously the coffer dam can be installed outside this time frame and work can then occur within the dam.
- (5) We would like a payment to the Town to restore any disturbed areas with native vegetation.

**MILL RIVER** - WE are concerned about the loss of public access for future fishing and crabbing , the significant visual impact along a very scenic vista, and the fact that the sediments in this section of the river are highly contaminated with lead from Exide's past activities and there is an extensive plan to remove the sediment from this stretch of the river this fall / winter..

- (1) Again we are requesting 6 foot wide deck structures around both abutments, for fishing and crabbing.
- (2) Again, a pedestrian deck / walkway with an adequate safety railing should be constructed on top or on the side of the utility bridge, for its full length. Access must be provided to the river banks on both sides. Fairfield will be willing to accept responsibility for the pedestrian access deck.

- (3) We expect to have input on the color and the exterior look of the bridge. The sides should be sprayed with a graffiti proof coating.
- (4) Seasonal restrictions apply for no work in the water for shellfish from June 15<sup>th</sup> to October 15<sup>th</sup> and fish spawning from March to June. Again coffer dams can be installed outside these periods.
- (5) Work in the water and excavation of the sediments must be planned carefully to prevent release of contaminants particularly lead from the disturbed sediments. The removed sediments must be handled and sent to a certified disposal site.
- (6) Another significant concern is your plans to re-route the storm drains in this area. We are again concerned about the excavation in contaminated sediments and where the new line will outlet i.e. will it stir up contaminated sediments.
- (7) Also you need to determine if your activities will conflict with the work that is planned to dredge the river. On the other hand there may be an opportunity to do your work in conjunction with them
- (8) We would like a payment to the Town to restore any disturbed areas native vegetation

**SASCO BROOK** We are concerned aesthetics and a few environmental issues.

- (1) No abutment deck or pedestrian bridge is required.
  - (2) No working in the water because of shellfish June 15<sup>th</sup> to October 15<sup>th</sup> and no working in the water for fish migration March to June 15<sup>th</sup>.
  - (3) We expect to have input on the color and exterior look of the bridge. The sides should be covered with a graffiti proof coating.
  - (4) We would like a payment to the Town to restore any disturbed areas with native vegetation.
- 

**Project Overview**

The Connecticut Light and Power Company and the United Illuminating Company are co-applicants to the Connecticut Siting Council, and other state and federal regulatory agencies, for the construction of a 345kV electrical line from Middletown to Norwalk whose purpose is to provide additional power in a timely manner with no unnecessary environmental, social, or construction costs. The co-applicants have identified the need for additional power in Fairfield County since the 1970s and they have sought permits for constructing the project over the last two years. Since its original filing in 2004, the CL&P/UI application for the 345kV project has had several significant revisions and little or no public information or understanding concerning the various methods proposed for the Fairfield river crossings.

The initial July 2004 CL&P/UI application developed for state and federal review sought to suspend the electrical conduits from the existing CONNDOT highway bridges over Ash Creek, Mill River, and Sasco Brook until the state DOT denied the use of its bridges in 2005. In their DEP-OLISP applications, the co-applicants stated that the use of existing bridges, for example at Mill River, was an attempt to “avoid any potential for disturbance to contaminated sediments in the river, as well as to avoid potential impacts to coastal resources”(Section C.2.4, page C-19 in Plans for Project Facilities within Coastal Boundary)

As a viable crossing alternative, the use of new self-supporting utility bridges was reviewed early and considered by the co-applicants as less desirable to CONNDOT bridges and tunneling because the long bridge spans would create a “substantial visual intrusion ... wetland and watercourse impacts and introduce a boating hazard”.

In their review of generic crossing alternatives, the co-applicants addressed the subject of the Self-Supporting Structure stating “This type of structure is a bridge constructed for the primary purpose

of supporting the cable system. It is possible this bridge would also accommodate pedestrian traffic.... A decking material that would provide protection for the cable system and also be used as a pedestrian walkway would be installed.” (Section C.1, General Project Construction Plans, page C-2, 2004 and 2005.)

In 2005 and early 2006 CL&P /UI revised the application design to tunnel under the river crossings using Horizontal Directional Drilling (HDD) at Ash Creek and Mill River with a new utility bridge at Sasco Brook. The CL&P/UI proposal noted the undesirability of utility bridge designs and offered pedestrian access ways on them to mitigate their adverse effects. CL&P/UI pursued the HDD approach until the design team found the HDD proposal too costly, too time consuming, and prone to environmental risks due to reported unstable soil and bedrock conditions.

In 2006 the co-applicants again revised the application to propose a third water-crossing design alternative – new utility bridges constructed adjacent to and approximately twenty-five feet upstream of the Post Road bridges for Ash Creek and Mill River, in addition to the bridge proposed earlier for Sasco Brook on its downstream side. The latest designs for bridge crossings have not yet received public review and comment, but for the selected documents provided by the applicant, we have found them to be incomplete, inaccurate, and unsatisfactory in several important respects concerning environmental quality, public access, and aesthetics.

The Fairfield Conservation and Shellfish commissions have followed and commented on this 345kV project in response to the few public notices received from the Connecticut Siting Council and Corps of Engineers (see enclosed correspondence). Until last month, the only river-crossing proposal brought to the attention of the Town of Fairfield since the co-applicants filed their permit applications in 2004 was the design to suspend the cable system beneath the existing CONNDOT bridges on the Post Road. Recent reviews of the permit application filings show that the co-applicants considered the HDD tunneling and utility bridge alternatives as less desirable at each point in their subsequent revised applications in 2005 and 2006, but no information was provided to the public to keep it informed or elicit comment on the new design concepts.

CL&P/UI has advised Fairfield that the DEP Commissioner has made a tentative determination to approve the project and will be publishing a public notice in the near future. The present report is based on the selected documents provided by the applicant and it will be revised to add new concerns or delete those satisfactorily resolved as a review of the new DEP permit application documents dictate.

### **Background**

In summary, Fairfield has for many decades sought to protect the quality of its coastal shoreline and environmental assets in all of its rivers and creeks, and it has expended a great deal of time, effort and funds to acquire and develop a system of open space properties and easements that ensure public access for walking, fishing, crabbing, boating, and shellfishing along its shores. Many of these open space areas and easements provide visual and physical access to the public shore upon entering Fairfield precisely where the three CL&P /UI bridges are proposed. These bridges, in their present designs for construction in the tidal shores, will significantly diminish or negate public access and opportunities for fishing and crabbing, for shellfishing, for enjoying the water views and breezes from the existing bridges; they will diminish or eliminate valuable waterside trees, shrubs, and vines, eliminate small but important tidal wetland marsh areas, and they may disturb or damage

the fragile spawning runs of anadromous fish, interfere with spawning shellfish, and may aggravate existing, or create new, conditions of gross contamination of river sediment, soil, and groundwater.

## **I. Ash Creek**

**A. Background on site conditions:** Ash Creek is a shallow coastal estuary of broad mud flats and sand bars with bordering salt marshes extending from Long Island Sound to Turney Creek and the Rooster River. The deepest water in the creek is located at the Post Road (Fairfield Avenue) bridge in the up- and down-stream "scour holes" where depths of 15 to 20 feet occur. This is where the large fish can be found when the bass and blues are running in the creek and where the blue-claw crabs wait at low tide.

The Ash Creek system provides excellent shellfishing habitat with prolific spawning of seed oysters for relay by commercial watermen working below the Post Road bridge, and who will work the upper beds above the Post Road after the bridge is raised when it is reconstructed by CONNDOT. The Fairfield Shellfish Commission has expended thousands of dollars in planting oyster cultch here and in maintaining its commercial and recreational shellfish programs that utilize the Ash Creek shellfish resource.

The creek basin is the primary focus of local interests, such as the Ash Creek Conservation Association, and neighborhood groups in both Fairfield and Bridgeport who work to protect this coastal community asset.

The Ash Creek basin is bordered by roads and private residential homes, commercial, and industrial properties making public access difficult except for that provided by the Town of Fairfield. In cooperation with the Aspetuck Land Trust and local developers, Fairfield has acquired many acres of open space shoreline and marsh islands plus creekside easements for public access across private property to reach the shore. Pedestrians, artists, crabbers, fishermen, commercial seed oystermen, kayakers and canoeists, all use the public open space and access easements to reach the water and shores of the creek.

Ash and Turney creeks and the Rooster River are Connecticut waterbodies not meeting state water quality standards due to industrial wastes and bacteria among other pollutants, and Fairfield and Bridgeport have been ordered to implement TMDL programs to improve their water quality. In addition to improving water quality of stormwater and combined sewer discharges, the town of Fairfield and City of Bridgeport also coordinate their conservation and public works departments with local neighborhood groups to clean trash and debris from the creek mud and shorelines.

These are the broad issues and concerns within which the proposed 345kV project is viewed where it crosses Ash Creek.

**B. The CL&P/UI Proposal:** The CL&P/UI plans propose to construct a new 160-foot long (clear span) utility bridge in 4.5 months time across Ash Creek 21-feet northerly or upstream of the existing Post Road Bridge. The bridge will be 9-ft 8-in. wide and 8-ft. 2-in. high, extending from elevation 11' msl to elevation 19' msl. The road surface on the existing Post Road Bridge is approximately elevation 10.5' msl. The concrete bridge abutments will be constructed partially within the intertidal zone topped with chain-link fencing and barbed wire to prevent pedestrain

access to the bridge structure. The westerly abutment will cover a small area of tidal wetland marsh (10' by 15'); the co-applicants will reset the existing stacked boulders as rip-rap around the westerly abutment in Fairfield.

It should be noted that the CL&P/UI state and federal permit application plans and their Burns and McDonnell (B&McD) construction plans are significantly different, confusing, and incomplete, and thereby difficult to evaluate in the following respects:

- a) Neither set of plans reflect Fairfield's public creek-access easements on the adjacent Gorbauch and Hausman property (Assessor's Map 130, Lot 237) and so prevent any understanding of the temporary or permanent effects of the project on our public access to the shore. This public easement, with an identical public access easement on the opposite side of the highway at No. 1 Post Road, is very important as it is the only access for pedestrians along the creek shores around the bridge, and for boaters to portage around the hydraulic company pipe obstruction in the Post Road bridge at high tides. If the co-applicants disturb or condemn this easement, the access must be relocated and reestablished in a safe, effective, and convenient manner elsewhere.
- b) The co-applicants' DEP-OLISP and Corps of Engineers permit application plans include two temporary intermediate pile bents or piers to support the bridge during construction, but no temporary structures are indicated in its B&McD construction plans, thereby causing confusion concerning the scope of the project and its potential impact to coastal resources, boating, and potential flooding effects. Further, the permit application plans indicate an elevation of 12.5' msl for the low chord of the bridge beam, but the CL&P/UI construction drawings show the bottom of the bridge at elevation 11' (See Burns and McDonnell Dwg. No. 01224-10001 PG 088, Plan and Profile Sta. No. 627+00 to 640+50, dated 8/15/05 and "Issued for Construction Revised 7/26/06"; and the DEP-OLISP and COE Sheets 2, 3, and 4 of 4, dated 5/5/06 entitled Proposed Crossing General Plan; Elevation; Section A-A views, "Issued for permit not for construction")

**C. Anticipated Impacts:** This CL&P/UI design may temporarily or permanently interfere with or prevent public access across the easements, along the shoreline, as well as from the existing Post Road bridge for pedestrians for fishing, crabbing, shellfishing. Due to the height of the structure (elevation 19' msl to 20' msl) above the Post Road (elevation 11' msl), the new bridge will significantly reduce or eliminate views of the upstream creek and shoreline when walking or driving on the Post Road bridge, it will significantly interfere with fishing and crabbing activities from the shoreline and sidewalk of the Post Road Bridge into the creek and scour holes. Depending on its seasonal timing of in-water construction, the project could have significant and adverse effects on shellfish spawning in the creek. The construction will eliminate the small salt marsh and natural vegetation in the bridge shoulder now providing wildlife habitat to the area. Depending on CL&P and UI's management intentions, the new bridge could be a medium for advertising or graffiti that detracts from the views of the area.

**D. Recommended Mitigation in Revised Plans:**

1. Provide for the restoration or replacement of any existing public access easement or structure used to access the creek shoreline across private property.
2. In lieu of stacking boulders around the abutments, provide around each new bridge abutment, a 4- to 6-foot wide shoreline shelf, terrace, or bench of large square boulders or equivalent material (immovable in flood and ice) with its surface approximately 1-foot

above high tide to ensure safe effective access around the new abutments to adjacent intertidal areas.

3. Provide for a public pedestrian accessway, for maintenance by the Town of Fairfield, for fishing, crabbing, etc. on the new utility bridge with ramped/stepped access to and from the sidewalk on the Post Road. The configuration of the pedestrian way may follow either a path above the conduit or on the outer (northerly) side of the conduit, as CL&P/UI did not specify the final design in its offer of construction when it filed its permit application.
4. Provide for protection of shellfish by allowing no in-water construction during the oyster spawning period from June 15 to October 15. This means that CL&P must install its cofferdams before or after the shellfish spawning period and then it may work at any time within the cofferdams.
5. Provide for the replacement of the natural vegetation and salt marsh which provides habitat and wildlife cover along the existing bridge abutments.
6. Provide for no advertising use of the proposed bridge structure and include a surface finish and material that will prevent graffiti or that will facilitate its removal and cleaning.

## II. Mill River

- A. Background on site conditions:** At the project location approaching the Post Road bridge, Mill River is a long tidal estuary capable of supporting diverse populations of fish, shellfish, waterfowl and wildlife. This reach of the estuary connects the coast and Southport Harbor to Fairfield's interior river and wetlands; it is followed by migrating blue-clawed crabs and river herring on their spring spawning runs as well as by the bluefish, striped bass, and ospreys that use the river for feeding on the fish. The river has been the focus of Fairfield's long-term efforts to successfully establish streambelt corridors to protect water quality, to acquire open space and public access easements across private property to the water, to provide residents with opportunities for travel on the river in kayaks, canoes, and boats. Fairfield's Conservation, Shellfish, and Harbor Management Commissions exert great efforts to protect and restore the natural resources associated with this river and its estuary. Prior to its closure due to industrial contamination of the river, the Post Road was a primary fishing and crabbing location from the bridge and the shoreline. Fairfield is intent on restoring these public access fishing locations once the river is cleaned up. The riverbanks in this location are lined with trees and shrubs that provide shade to the water and habitat for local wildlife, and frame a view of the river upstream.

The Mill River is still dammed with the colonial tidemill at Harbor Road that creates the Mill Pond into which the state and town highways drain, and into which local industries discharged their industrial wastes for decades.

For years the Superior Plating Company, located on the west side of the Mill River adjacent to the CL&P/UI conduit route, caused the discharge of tri- and hexa-valent chromium into the Mill River resulting in the contamination of river water and sediments. On the opposite shore, the Exide Storage Battery Company discharged waste lead and sulfuric acid from the 1950s to 1981 into the river through railroad drains, state storm drains, and its private factory waste pipes where sulfuric acid dissolved the pipe joints and inverts allowing lead to contaminate the underlying soil and groundwater in addition to the Mill River.

While the tree-lined shore and waters of Mill River look appealing to the visitor in this area, the entire river from Harbor Road to Mill Hollow Park, approximately a mile of shoreline, has been posted for years to prohibit crabbing and fishing and disturbance of contaminated sediments until the river is cleaned. The Exide Company is presently under DEP administrative orders to remediate the now-demolished factory site (on-going), to remediate the Mill River contaminated sediments (proposed), and to remediate the State highway (Post Road) storm sewers and subsoils (proposed) from the river easterly across the factory frontage. The Superior Plating Company has also received DEP instructions to remediate the chromium in the river.

- B. The CL&P/UI Proposal:** The CL&P plans provide for constructing a new utility bridge on concrete bridge abutments, from 80 to 100 feet in length depending on which set of plans is used, over a four to five month period, located approximately 21 feet northerly (upstream) of the existing Post Road bridge, 170-ft. in length, 9-ft 8-inches wide, 8-ft 2-inches high, with its bottom at elevation 12.5' msl, and its top at elevation 21' msl. The road surface on the Post Road bridge is at elevation 14.8' msl. The abutments, located where the existing trees and shrubs border the river, will be constructed partially within the intertidal zone topped with chainlink fencing and barbed wire to prevent pedestrian access to the bridge structure. No plans have been submitted to restore the natural vegetation and habitat in these areas.

The co-applicants have proposed two temporary intermediate pile bents or piers under the bridge within the river channel in the state and federal permit application plans, but no such structures are indicated in the Burns & McDonnell plans issued for construction. (See DEP-OLISP and Corps of Engineers plans dated 5/5/06 sheet 2 Proposed Crossing General Plan; Burns & McDonnell Dwg. No. 01224-10001 PG 073 Plan and Profile Sta. 513+50 to 522+50 and revised to 7/26/06, "Issued for Construction".)

**Environmental concerns for the proposal:**

1. Although the co-applicants expressed the most reservations for environmental impacts due to a bridge crossing at Mill River, they offered the least amount of information concerning the contaminated status of the site areas to be disturbed, how they would be affected by the proposed construction activities, and how the co-applicants proposed to mitigate their impacts on the surface water, sediment, soils, and groundwater.

During their pre-application due diligence assessment of the Post Road for their plan to suspend the conduits from the CONNDOT bridges, CL&P/UI sought to learn the characteristics of the soils they may encounter in the roadway with respect to the need for special treatment and disposal.

There is no indication that the co-applicants conducted a subsequent due diligence assessment by sampling for contaminated soils or groundwater in the alternative route locations, outside of the CONNDOT right-of-way, that are now required for the independent utility bridges at water crossings. This oversight should be corrected.

The co-applicants identified potential sources of contaminants and developed site specific probes down the pavement to sample subsurface soils and groundwater along

the conduit route. Many sample results reflected polluted conditions, while some included contaminated soils in excess of the remediation standard regulations.

At site specific probe No.50-27-GW1, the co-applicants encountered barium, benzene, chromium, lead and mercury in excess of the groundwater RSRs, located in mid-road approximately 200-ft. west of the Exide property opposite the Sasco Hill Road intersection with the Post Road. This sample location appears to be directly over the state stormsewer pipe that was used by Exide to discharge lead and acid into the Mill River for decades prior to the state DOT's redirection of its highway flow into the Exide factory waste drain and then into Mill River. The lead in this contaminated groundwater sample beneath the Post Road only hints at the problems that the Town and DEP have been working diligently for decades to get Exide to clean up.

Unfortunately, the CL&P/UI plans submitted to the DEP and Corps of Engineers do not show any subsurface drainage in any area, and the Burns & McDonnell plans "Issued for Construction 7/26/06" do not indicate the presence of the contaminated state storm sewer in the proposed conduit and bridge construction area west of Sasco Hill Road, nor do they indicate the presence of the contaminated Exide drain east of its outfall into the Mill River. Both drains are encompassed in the DEP's remediation order to Exide and both drains, as indicated in the plans, would be buried and obstructed by the easterly bridge abutments. When the contractor encounters these pipes during the course of construction, it may construct expedient drainpipes around the proposed bridge abutment and into the river. These new drain routes through the contaminated soils in the Exide and DOT right-of-way properties could introduce new contaminants to the river from both sources of contaminated soils and groundwater. These circumstances suggest that the co-applicants and their contractors are unaware of the contaminated conditions at the site and the importance of protecting the river by providing and implementing a remedial action plan for the proposed bridge project.

2. The CL&P/UI bridge abutments are located partially in the waters of the Mill Pond as well as in its contaminated sediments and surrounding soils at and beyond the outfall of the Exide and CONNDOT stormsewers that have never been remediated since Exide began discharging lead to the river in the 1950s. The proposed bridge, by overarching the river upstream of the Post Road bridge, may prevent access under both bridges to the contaminated sediments that have never been remediated. The proposed abutments and conduit may obstruct physical access to the soils and groundwater on factory and State highway property and interfere with Exide in its efforts to comply with its DEP order to remediate these sites. Further, the 345kV project abutments and bridge will take more than four months to construct in the river, at a time when the Exide remediation activities are also expected in the Mill River and the Post Road. CL&P/UI have not shown how, or if, its proposed project remediation activities are integrated with those of the Exide company.

**C. Anticipated Impacts:** Due to the CL&P/UI lack of knowledge of existing contaminated conditions, and incomplete plans for locating existing and providing for new stormsewers, the project could present new sources and pathways of contamination for polluting the Mill River, and may impede or prevent Exide from conducting a thorough remediation effort of

the contaminated upland sites and river. Because of its intertidal location, the project is expected to eliminate public access along the shoreline in the areas of the new bridge abutments. Because of its close proximity to the existing bridge, the project is also expected to eliminate effective fishing and crabbing off the upstream side of the Post Road bridge. As confirmed by CL&P/UI in the permit application (See Section C.1, General Project Construction Plans, page C-2, 2004 and 2005.), the new utility bridge will create a significant visual intrusion that will eliminate the upstream view of the river from the Post Road. The project may interfere with flood events and boating if the temporary pile bents are constructed as proposed in the state and federal applications. The project may adversely affect the river herring and shellfish populations if in-water construction activities are conducted during the spawning seasons.

#### **D. Recommended Mitigation in Revised Plans:**

1. Provide revised plans that accurately reflect the location and conditions of the state highway and Exide stormsewers, the contaminated sediment, soil and groundwater in the river crossing location and highway conduit locations, a formal remediation action plan for both, and the timing and phasing of activities in coordination with the DEP and Exide.
2. Provide a 4- to 6-foot wide shoreline shelf, terrace, or bench of large square boulders or equal materials (immovable in flood and ice) with its surface approximately 1-foot above high tide to ensure safe effective access around the new abutments to adjacent intertidal areas.
3. Provide for a public pedestrian access way on the new utility bridge, for maintenance by the Town of Fairfield, to accommodate fishing, crabbing, and views, with ramped/stepped access to and from the sidewalk on the Post Road on both sides of the river. The configuration of the pedestrian way may follow either a path above the conduit or on the outer (northerly) side of the conduit, as CL&P/UI did not specify the final design in its offer of construction when it filed its permit application.
4. Provide for protection of spawning alewives and blue-backed herring by prohibiting in-water work from March 1 to June 1; protect shellfish by allowing no in-water construction during the oyster spawning period from June 15 to October 15. This means that CL&P/UI must install the cofferdams and temporary piers before or after the herring and shellfish spawning periods and then it may work at any time within the cofferdams.
5. Provide for the replacement of the natural vegetation that provides valuable habitat and wildlife cover along the existing bridge abutments.
6. Provide for no advertising use of the proposed bridge structure and design a surface finish and material that will prevent graffiti or that will facilitate its removal and cleaning.

### **III. Sasco Creek**

- A. Background on site conditions:** Sasco Creek is the tidal extension of Sasco Brook running from Long Island Sound to the head of tidal influence at the old milldam at Bulkley Pond on the northerly side of the Post Road Bridge. The portion of Sasco Creek in the project site is about twenty feet wide and usually less than a foot deep, it has steep well-vegetated banks that shade the water providing heron roosts and dense wildlife habitat, with little or no use by fishermen, crabbers, pedestrians, kayaks or canoes. There are no downstream views of consequence that the proposed utility bridge will obstruct due to dense vegetation and

surrounding commercial development. This reach of the creek is very important for the Blue-back herring and alewives that make annual runs up the creek to spawn in the pools beneath the dam and the Post Road bridge. The lower creek and waters in the Sound off Southport Beach contain viable shellfish populations capable of supporting recreational and commercial shellfishing. Sasco Brook and Creek presently exhibit excessive bacteria counts that have caused the temporary closure of recreational shellfishing in the area, with the state DEP imposing a TMDL requirement in Fairfield's Phase II Stormwater Management Program for this water body.

- B. The CL&P/UI Proposal:** The CL&P/UI plans provide for constructing a new utility bridge on concrete bridge abutments, approximately 35 feet in length, over a four to five month period, located approximately 35 feet southerly (downstream) of the existing Post Road bridge, 81-ft. in length, 9-ft 10-inches wide, 8-ft high, with its lower chord elevation at 17.5' msl, and its top at elevation 25' msl. The road surface on the Post Road bridge is at elevation 21' msl. The bridge will be about 15 feet above the water. The abutments, located where the existing trees and shrubs border the creek, will be constructed above the floodplain and will be topped with chainlink fencing and barbed wire to prevent pedestrian access to the bridge structure. No plans have been submitted to restore the natural vegetation and habitat in these areas.
- C. Anticipated Impacts:** The primary impacts relate to the potential for soil erosion and sedimentation of the creek; loss of the bordering dense trees and shrubs that provide shade and wildlife habitat to the river system; disturbance of the spawning runs of river herring in the creek and pools beneath the existing Post Road and the proposed utility bridge; as well as the potential impacts of sediment on the shellfish populations during the summer spawning period.

Public access is not encouraged at this river crossing location in light of adjacent private property; very steep riverbanks, river herring spawning sites, and diverse wildlife habitat. The dense vegetation and abutting commercial properties preclude views from the bridge and mitigate against the need for pedestrian access over the new bridge.

**D. Recommended Mitigation in Revised Plans:**

1. Provide for protection of spawning alewives and blue-back herring by prohibiting in-water work from March 1 to June 1; provide a reinforced panel of netting beneath the utility bridge during construction so that the water and channel beneath will be protected from objects that may be thrown, blown, or fall, off the structure.
2. Protect shellfish by allowing no in-water construction during the oyster spawning period from June 15 to October 15. This means that CL&P/UI must install the abutments before or after the river herring and shellfish spawning periods.
2. Provide for the restoration of the existing dense vegetation that provides valuable habitat and wildlife cover along the creek in the disturbed areas on private property bordering both sides of the channel.
3. Provide for no advertising use of the proposed bridge structure and design a surface finish and material that will prevent graffiti or that will facilitate its removal and cleaning.

No abutment shelf or pedestrian bridge access is required at this location.

**Conclusions:** This report is based on the information provided to date by the CL&P/UI companies. The report and recommendations may be revised following review of the forthcoming application data submitted for state and federal regulatory review. The commission's final recommendations to the Connecticut Siting Council, DEP, and Corps of Engineers should be distributed to all interested parties, and local, state, and federal agencies.

tjs

enc: photos of river crossing sites (3)

cc: E. Kennelly, ATAtty; R. White, DPW; W. Hurley, SED; J. Devonshuk, PD; P. Meiman, Conservation C.; P. Nelson, Shellfish C.



**Connecticut  
Light & Power**

The Northeast Utilities System

107 Selden Street, Berlin CT 06037

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

August 23, 2006

Mr. Kenneth Flatto  
First Selectman – Town of Fairfield  
John J. Sullivan Independence Hall  
725 Old Post Road  
Fairfield, CT 06824

**RE: Middletown-Norwalk 345-kV Project: Response to Fairfield Requests Regarding Proposed Utility Bridges over Ash Creek, Mill River, and Sasco Creek**

Dear Mr. Flatto:

As you requested at the conclusion of our meeting on August 17, 2006, I am writing to summarize the response of The Connecticut Light and Power Company (“CL&P”) to the Town of Fairfield’s mitigation requests regarding CL&P’s proposed construction of utility bridges over Ash Creek, Mill River, and Sasco Creek in connection with the Middletown-Norwalk 345-kV Transmission Project. These mitigation requests were outlined in the memorandum dated August 13, 2006 prepared by Thomas Steinke, Conservation Director for the Town of Fairfield (“Town”).

**I. PEDESTRIAN WALKWAYS**

At the meeting on August 17<sup>th</sup>, we reviewed your request for pedestrian walkways on the proposed utility bridges at Ash Creek and Mill River. While I expressed CL&P’s willingness to attempt to work with the Town with regard to its request for such pedestrian walkways, a number of concerns were identified during the meeting on which I wished to consult with NU management, counsel, and our engineers before we provided CL&P’s final response regarding these walkways. These issues included liability concerns, legal questions regarding CL&P’s ability to acquire the real estate interests needed to construct the walkways, issues regarding ownership and maintenance of the bridges, and potential issues regarding compliance with the Connecticut Siting Council’s Best Management Practices regarding Electric and Magnetic Fields.

At the meeting, Melanie Howlett, counsel for the City of Bridgeport, indicated that Bridgeport intended to oppose the construction of any pedestrian walkways over the portion of Ash Creek within the City of Bridgeport, and further indicated that Bridgeport would oppose the construction of a pedestrian walkway over the Fairfield portion of the proposed bridge at Ash Creek unless Fairfield agreed to provide defense, indemnity, and insurance for Bridgeport as to

Mr. Kenneth Flatto  
August 23, 2006  
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any claims arising out of the pedestrian walkway. I indicated that CL&P, if it were to agree to propose the pedestrian walkways, would require similar protection from the Town, and it was my understanding you intended to consult with other Town officials regarding these liability issues.

Upon further consideration of the numerous legal, technical, and practical issues regarding the construction and maintenance of pedestrian walkways attached to the proposed utility bridges at Ash Creek and Mill River, CL&P has determined that it cannot support the Town's request to construct pedestrian walkways on these two bridges based upon the liability, real estate, and ownership/maintenance concerns outlined above. I note that the Town will have the opportunity to provide comments to the Siting Council regarding this issue once CL&P files its Development and Management Plan for the water crossings, which we expect to occur within the next week. Moreover, CL&P is willing to work with the Town on several of its other requests regarding the design, construction, and maintenance of these utility bridges. In Section II below, I have inserted our responses to each of the requests included in Mr. Steinke's August 13, 2006 memorandum.

## **II. CL&P'S RESPONSE TO SPECIFIC MITIGATION REQUESTS BY THE TOWN**

### **A. ASH CREEK**

*1. Provide for the restoration or replacement of any existing public access easement or structure used to access the creek shoreline across private property*

**RESPONSE:** As we discussed at the meeting, for security reasons CL&P will have to install a fence at the base of the structure that would bar pedestrians from walking along the shoreline under the bridge. CL&P is willing to construct a walkway that will allow public access around the structure. Based on our review of the Town's existing public access rights, additional easement rights in favor of the Town may need to be obtained from the property owner to construct and maintain this walkway on the Fairfield side of Ash Creek. There is a legal issue as to whether CL&P could acquire such rights on behalf of the Town by condemnation. Therefore, the cooperation of the property owner would likely be required in securing such rights for the Town. CL&P is willing to contact the property owner to begin these discussions. In the absence of such cooperation, the Town could condemn such rights. In the event a condemnation by the Town were necessary, CL&P would be willing to compensate the Town for the cost of the condemnation and the cost of the easement rights acquired. Alternatively, if the Town insists that access along the shoreline must be maintained, CL&P could explore raising the height of the bridge. However, it is our understanding that the Town does not wish to increase the height of the utility bridge.



In the event this walkway is constructed, the Town must assume all responsibility for maintenance of the walkway.

2. *In lieu of stacking boulders around the abutments, provide around each new bridge abutment, a 4- to 6-foot wide shoreline shelf, terrace, or bench of large square boulders or equivalent material (immovable in flood and ice) with its surface approximately 1-foot above high tide to ensure safe effective access around the new abutments to adjacent intertidal areas.*

**RESPONSE:** See response to #1 above. Given that the purpose of the request was to provide pedestrian access along the shoreline under the bridge, the request appears to be moot because access under the bridge will be blocked by the fence. CL&P is willing, however, to install benches along the alternate access route discussed in #1 provided the property owner will agree and further provided that this additional work would not be below the high tide line and would not require any amendment to our existing permit applications.

3. *Provide for a public pedestrian accessway, for maintenance by the Town of Fairfield, for fishing, crabbing, etc. on the new utility bridge with ramped/stepped access to and from the sidewalk on the Post Road. The configuration of the pedestrian way may follow either a path above the conduit or on the outer (northerly) side of the conduit, as CL&P/UI did not specify the final design in its offer of construction when it filed its permit application*

**RESPONSE:** As outlined in Section I above, CL&P has concluded that it cannot support the construction of a public pedestrian walkway on the new utility bridge.

4. *Provide for protection of shellfish by allowing no in-water construction during the oyster spawning period from June 15 to October 15. This means that CL&P must install its cofferdams before or after the shellfish spawning period and then it may work at any time within the cofferdams.*

**RESPONSE:** This request is acceptable to CL&P, provided that such date restrictions apply only to in-water construction. CL&P also expects that the DEP and the U.S. Army Corps of Engineers will include time-of-construction restrictions as conditions of their permits.

5. *Provide for the replacement of the natural vegetation and salt marsh which provides habitat and wildlife cover along the existing bridge abutments.*

**RESPONSE:** CL&P intends to replace vegetation in kind to the best of our ability. We will agree to consult with the Town on the type and density of species to be used as part of such revegetation work, but I note that CL&P would also have to consult with the landowner of the



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affected property. Moreover, I note that there is a 10-foot corridor above the underground transmission line over which no plantings would be allowed so as to allow for ready access to the cables for maintenance and emergency repairs and to prevent tree roots from interfering with these facilities

With regard to the Town's concerns expressed at our meeting regarding potential loss of shade along the banks of the creek, I note that the bridge will add a significant amount of shade to the waterway and will therefore provide mitigation in this regard. Finally, CL&P will agree that future maintenance of vegetation at this crossing location will be by mechanical or non-chemical means only.

6. *Provide for no advertising use of the proposed bridge structure and include a surface finish and material that will prevent graffiti or that will facilitate its removal and cleaning.*

**RESPONSE:** This request is acceptable to CL&P. Please note that CL&P is unaware of any surfaces that will "prevent" graffiti, but it will agree to provide a material that will facilitate the removal of any graffiti. As discussed at the meeting, CL&P will also agree to provide the Town (and the City of Bridgeport) with an opportunity to provide input on the color and exterior appearance of the bridge. A concern was also raised at the meeting regarding the security fence to be installed at the base of the utility bridge. CL&P would consult with the Town as to the type of fencing. CL&P will not use barbed wire for this fence.

## **B. MILL RIVER**

1. *Provide revised plans that accurately reflect the location and conditions of the state highway and Exide storm sewers, the contaminated sediment, soil and groundwater in the river crossing location and highway conduit locations, a formal remediation action plan for both, and the timing and phasing of activities in coordination with the DEP and Exide.*

**RESPONSE:** To date, we have issued three sets of drawings:

1. Construction Drawings for the Duct Bank and Vaults within Fairfield and Bridgeport excluding the three bridges.
2. 60% Preliminary Drawings for the waterway and railroad crossings
3. Permit Drawings (sketches) conceptual drawings issued to ACOE and OLISP

The drawings for the utility bridges that Mr. Steinke reviewed are currently at a 60-70% design level; they are not final construction drawings. Prior to finalizing the design, CL&P is attempting to address the concerns of the various towns, including Fairfield, and various permitting agencies.



CL&P's engineers have consulted with Exide's environmental consultant, Ralph Klass of CCA Engineering, regarding the cleanup of the Exide parcel. Mr. Klass did not express any concerns that CL&P's construction of the utility bridge would interfere with Exide's plans for remediation. Mr. Klass also agreed to provide us with information to confirm the location of any lead-contaminated drains in the area of construction.

The phasing plan for construction activities will be addressed in more detail as we finalize the construction drawings. A soil and water handling plan has been developed and provided to the town for informational purposes. We are currently revising the drawings to include the drains located on private property. Once we gain access to the property, we will also acquire geotechnical data, environmental data and verify the location of the drains, which we can then share with the Town.

2. *Provide a 4- to 6-foot wide shoreline shelf, terrace, or bench of large square boulders or equal materials (immovable in flood and ice) with its surface approximately 1-foot above high tide to ensure safe effective access around the new abutments to adjacent intertidal areas.*

**RESPONSE:** As with Ash Creek, access to the area under the utility bridge at the Mill River will be blocked by a fence for a security reasons. CL&P does not have the authority to construct a public walkway along the bridge on private property. However, CL&P will agree to approach the property owner to determine if the owner would be willing to discuss a conveyance of the rights that would be necessary to construct and maintain this walkway. The Town would be responsible for maintaining such a walkway, if it is feasible.

3. *Provide for a public pedestrian access way on the new utility bridge, for maintenance by the Town of Fairfield, to accommodate fishing, crabbing, and views, with ramped/stepped access to and from the sidewalk on the Post Road on both sides of the river. The configuration of the pedestrian way may follow either a path above the conduit or on the outer (northerly) side of the conduit, as CL&P/UI did not specify the final design in its offer of construction when it filed its permit application.*

**RESPONSE:** As outlined in Section I above, CL&P has concluded that it cannot support the construction of a public pedestrian walkway on the new utility bridge.

4. *Provide for protection of spawning alewives and blue-backed herring by prohibiting in-water work from March 1 to June 1; protect shellfish by allowing no in-water construction during the oyster spawning period from June 15 to October 15. This means that CL&P/UI must*



*install the cofferdams and temporary piers before or after the herring and shellfish spawning periods and then it may work at any time within the coffer dams.*

**RESPONSE:** This request is acceptable to CL&P, provided that such date restrictions apply only to in-water construction. CL&P also expects that the DEP and the U.S. Army Corps of Engineers will include time-of-construction restrictions as conditions of their permits.

*5 Provide for the replacement of the natural vegetation that provides valuable habitat and wildlife cover along the existing bridge abutments.*

**RESPONSE:** CL&P intends to replace vegetation in kind to the best of our ability. We will agree to consult with the Town on the type and density of species to be used as part of such revegetation work, but I note that CL&P would also have to consult with the landowner of the affected property. Moreover, I note that there is a 10-foot corridor above the underground transmission line over which no plantings would be allowed, as discussed above with regard to Ash Creek.

With regard to the Town's concerns expressed at our meeting regarding potential loss of shade along the banks of the creek, I note that the bridge will add a significant amount of shade to the waterway and will therefore provide mitigation in this regard. Finally, CL&P would agree that future maintenance of vegetation at this crossing location will be by mechanical or non-chemical means only.

*6. Provide for no advertising use of the proposed bridge structure and design a surface finish and material that will prevent graffiti or that will facilitate its removal and cleaning.*

**RESPONSE:** This request is acceptable to CL&P. Please note that CL&P is unaware of any surfaces that will "prevent" graffiti, but it will agree to provide a material that will facilitate the removal of any graffiti. As discussed at the meeting, CL&P will also agree to provide the Town with an opportunity to provide input on the color and exterior appearance of the bridge. A concern was also raised at the meeting regarding the security fence to be installed at the base of the utility bridge. CL&P would consult with the Town as to the type of fencing. CL&P will not use barbed wire for this fence.

### **C. SASCO CREEK**

*1. Provide for protection of spawning alewives and blue-back herring by prohibiting in-water work from March 1 to June 1, provide a reinforced panel of netting beneath the utility bridge during construction so that the water and channel beneath will be protected from objects that may be thrown, blown, or fall, off the structure.*



**RESPONSE:** This request is acceptable to CL&P, provided that such date restrictions apply only to in-water construction. CL&P also expects that the DEP and the U.S. Army Corps of Engineers will include time-of-construction restrictions as conditions of their permits. CL&P will also agree to provide the netting requested.

2. *Protect shellfish by allowing no in-water construction during the oyster spawning period from June 15 to October 15. This means that CL&P/UI must install the abutments before or after the river herring and shellfish spawning periods.*

**RESPONSE:** This request is acceptable to CL&P, provided that such date restrictions apply only to in-water construction. CL&P also expects that the DEP and the U.S. Army Corps of Engineers will include time-of-construction restrictions as conditions of their permits.

3. *Provide for the restoration of the existing dense vegetation that provides valuable habitat and wildlife cover along the creek in the disturbed areas on private property bordering both sides of the channel.*

**RESPONSE:** CL&P intends to replace vegetation in kind to the best of our ability. We will agree to consult with the Town on the type and density of species to be used as part of such revegetation work, but I note that CL&P would also have to consult with the landowner of the affected property. Moreover, I note that there is a 10-foot corridor above the underground transmission line over which no plantings would be allowed.

With regard to the Town's concerns expressed at our meeting regarding potential loss of shade along the banks of the creek, I note that the bridge will add a significant amount of shade to the waterway and will therefore provide mitigation in this regard. Finally, CL&P would agree that future maintenance of vegetation at this crossing location will be by mechanical or non-chemical means only.

4. *Provide for no advertising use of the proposed bridge structure and design a surface finish and material that will prevent graffiti or that will facilitate its removal and cleaning.*

**RESPONSE:** This request is acceptable to CL&P. Please note that CL&P is unaware of any surfaces that will "prevent" graffiti, but it will agree to provide a material that will facilitate the removal of any graffiti. As discussed at the meeting, CL&P will also agree to provide the Towns of Fairfield and Westport with an opportunity to provide input on the color and exterior appearance of the bridge. A concern was also raised at the meeting regarding the security fence



Mr. Kenneth Flatto  
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Page 8

to be installed at the base of the utility bridge. CL&P would consult with the Towns as to the type of fencing. CL&P will not use barbed wire for this fence.

I expect that we will continue to discuss these issues at our meeting with the DEP scheduled for August 29<sup>th</sup>. If you have any questions regarding this response that you would like to discuss in the meantime, do not hesitate to contact me.

Sincerely,

  
Anne Bartosewicz  
Middletown-Norwalk Project Director

cc: Susan Lee  
Micheal Grzywinski  
Melanie Howlett  
Brian T. Henebry  
Bruce L. McDermott  
Eileen Kennelly



## **APPENDIX C**

# **MONITORING PLANS FOR CROSSINGS OF THE HOUSATONIC AND SAUGATUCK RIVERS**

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## 1. INTRODUCTION

This *Monitoring and Operations Plan* (“M & O” Plan) identifies the procedures that will be followed during the performance of horizontal directional drilling (HDD) for the Middletown to Norwalk Project (“Project”) proposed by The Connecticut Light and Power Company (CL&P) and The United Illuminating Company (UI), collectively referred to as “the Companies”. The HDD activities for the Project will involve the installation of a 345-kilovolt (kV) underground transmission cable beneath certain rivers in New Haven and Fairfield counties, Connecticut.

The protocols and procedures identified in this M & O Plan will be followed by the Companies’ HDD contractor(s) for each HDD crossing. As a result of permit and certificate conditions for the Project, additional conditions may be identified for specific HDD river crossings. The M & O Plan, along with any such site-specific conditions, will be incorporated into the HDD contract(s) for the Project.

## 2. OVERVIEW OF PLAN ELEMENTS

The M & O Plan will consist of the following conditions and corresponding operational and monitoring protocols:

Condition	Operational Parameters	Actions
<b>Condition 1: Normal Directional Drilling Conditions</b>	No drilling fluid release	<ul style="list-style-type: none"> <li>• Exit pit bentonite removal</li> <li>• Perform routine drilling data collection</li> <li>• Conduct routine visual monitoring</li> </ul>
<b>Condition 2: Loss of Circulation</b>	Loss of circulation during drilling	<ul style="list-style-type: none"> <li>• Slow down drilling and adjust drill operation to regain circulation</li> <li>• Perform focused visual monitoring</li> <li>• Restart or continue drilling if no release is detected but continue to visually observe drill alignment and adjacent area(s)</li> </ul>
<b>Condition 3– Drilling Fluid Release and Remediation</b>	Drilling fluid release confirmed	<ul style="list-style-type: none"> <li>• Take appropriate steps to stop loss.</li> <li>• Perform monitoring to define release area</li> <li>• Notify regulatory agencies</li> <li>• Perform bentonite sampling and notify DEP of test results</li> <li>• Provide DEP with copies of manifests of remediation and material disposal</li> </ul>

The following sections of this M & O Plan provide details regarding each of the three conditions identified above.

### **3. DESCRIPTION OF DRILLING OPERATIONS AND MONITORING, BY CONDITION**

#### **3.1 CONDITION 1: NORMAL DRILLING CONDITIONS**

##### **Drilling Operations**

Documentation of the composition of all drilling fluids to be used will be maintained at the jobsite and be available for review by the Companies and their designated representatives, as well as by the Connecticut Department of Environmental Protection (DEP) and the U.S. Army Corps of Engineers (ACOE). Documentation shall include complete manufacturers literature and Material Safety Data Sheets (MSDSs). No fluid will be utilized that does not comply with permit requirements and environmental regulations.

The HDD Contractor shall maximize recirculation of drilling fluid surface returns and provide solids control and fluid cleaning equipment of a configuration and capacity that can process surface returns and produce drilling fluid suitable for reuse.

The HDD Contractor shall at all times provide and maintain instrumentation which will accurately locate the pilot hole, measure drill string axial and torsional loads, and measure drilling fluid discharge rate and pressure. The Companies and their designated representatives, as well as the DEP and the ACOE, will have access to these instruments and their readings at all times. A log of all recorded readings shall be maintained and will become a part of the “As-Built” information to be supplied by the HDD contractor.

##### **Monitoring Plan**

Monitoring will consist of visual observation during the directional bore. A log shall be kept of all survey monitoring, by the monitoring contractor, and available for inspection by the Companies, their designated representatives, the DEP and ACOE. If a release is detected and confirmed during routine monitoring, *Condition 3* will be implemented.

#### **3.2 CONDITION 2: LOSS OF CIRCULATION**

##### **Drilling Requirements**

Loss of drilling fluid circulation can indicate a blockage of the fluid return path, the release of drilling fluids into a void around the directional drill, or a pending or actual breakout of the fluid into the waterbody or onto adjacent land surfaces. The following procedures shall be conducted if loss of circulation occurs.

- The HDD Contractor will take immediate steps to identify and resolve the problem
- If the circulation loss is a fracout, steps will be taken to control the size of the drilling mud loss to the environment.
- HDD Contractor shall immediately notify the Companies of Condition 2.
- The HDD Contractor shall perform a visual check along the alignment path and the proximal area to assess if drilling fluid has reached the surface or sediment/water interface.
- The HDD Contractor shall take steps to restore contained circulation. The steps shall include

“sizing” the hole and adjusting drilling fluid properties to encourage annular flow. Sizing involves withdrawing the drill string to mechanically clean the drilled pilot hole. The HDD Contractor may, at his option, employ lost circulation material.

- If circulation is regained the HDD Contractor will notify the Companies and *Condition 2* will continue until a complete survey of the drill alignment is performed, as specified under *Condition 2, Monitoring Plan*. If releases are not identified and contained circulation is re-established, the drilling and monitoring will change to *Condition 1* and drilling fluid circulation will continue to be closely monitored.
- If circulation is not re-established, the drill path will continue to be monitored to locate the potential release and the Companies will seek out the advice of the State DEP and ACOE. If a release is not detected, drilling will be continued and *Condition 2, Monitoring Plan*, will continue.

### **Monitoring Plan**

- Perform visual monitoring or focused fathometer monitoring as per *Condition 1*.
- If a drilling fluid release is detected, *Condition 3* will be implemented immediately.
- If a release is not detected, drilling will continue under *Condition 1 or 2*, as applicable.

## **3.3 CONDITION 3: DRILLING FLUID RELEASE AND REMEDIATION**

### **Operations**

#### ***A. Drilling Fluid Release with Loss of Drilling Fluid Circulation***

Should the monitoring team detect a drilling fluid release and the release does not pose a significant impact, as defined later in this section, then drilling may continue with the approval of the DEP.

If the release occurs on land, it shall be immediately contained with hand placed barriers (i.e. hay bales, sand bags, silt fences, etc.) and collected using pumps as practical. If the amount of the release is not great enough to allow collection, the affected areas shall be diluted with fresh water and the fluid will be allowed to dry and dissipate naturally. If the amount of the release exceeds that which can be contained with hand placed barriers, small collection sumps (less than 2 cubic yards) may be used. If the amount of the release exceeds that which can be contained and collected using small sumps, drilling operations shall be suspended until released volumes can be brought under control.

If the release occurs within the river, the HDD Contractor will immediately take steps to minimize the flow of mud and it shall be immediately contained to the extent practical with barriers placed by divers. The contained underwater release will then be collected using pumps as practical. If the amount of the underwater release exceeds that which can be contained and collected, drilling operations shall be suspended until released volumes can be brought under control.

### **Monitoring Plan**

- In the event of a detected drilling fluid release, the Companies will immediately contact the following agencies:
  - ⇒ DEP Oil and Chemical Spills Section of the Waste Management Bureau on their 24-hour hot line at (860) 424-3338
  - ⇒ DEP Office of Long Island Sound Programs (“OLISP”) at (860) 424-3034. The telephone notification will be followed by written notification to be sent by facsimile by the next business morning to the OLISP at (860) 424-4054. The original written notice will be mailed to the OLISP at 79 Elm Street, Hartford, Connecticut 06106-5127.
  - ⇒ Bentonite Remediation Contractor (to be determined by the HDD Contractor(s) with the approval of the Companies).
  - ⇒ National Marine Fisheries at their Milford office (203) 882-6504
  - ⇒ ACOE at (978) 318-8335
  - ⇒ Connecticut Department of Agriculture, Bureau of Aquaculture (203) 874-0696
- The release area and the rest of the drill path will be monitored visually. The type of monitoring will depend on the width and depth of the river crossing. The impacted area will be determined.
- The origin of the breakout will be located and marked at the surface with a buoy or equivalent.
- A sample of the released material shall be obtained and tested to determine its contents. When available, results of the sample analysis will be made available to the DEP.
- Down-current areas will be investigated to assess impacts.
- Visual observations will be used, as appropriate to the river crossing, to allow the Companies and the DEP to determine the significance of the release.
- For larger river crossings, a diving team will be assigned to the release area to monitor the status of the release and to cordon the release area to minimize the area of impact and facilitate the removal of deposited material. The dive team shall make measurements of the horizontal limits and depth of deposition of the drilling fluid. These measurements shall be made at slack tide during active drilling operations, while a release continues. The dive team also will make visual observations of the release point to assess changes in flow rates and to evaluate underwater containment and collection effectiveness.

#### **4. SIGNIFICANT IMPACTS**

The decision as to conditions which constitute a significant impact will be based on discussions between DEP, ACOE, and the Companies. The DEP and ACOE shall make the final determination or ruling concerning impact decisions and further actions.

## **5. POST DRILLING MONITORING AND SAMPLING PLAN**

In the event of a drilling fluid release, a site-specific post-remediation sampling protocol specific to the actual impact area(s) will be submitted to the DEP and the ACOE, and will be implemented by the Companies. The protocol will be based upon the location, volume, and spatial extent of the release, as well as baseline data concerning the coastal resources in the potentially affected areas. The objective of the sampling and monitoring effort will be to assess the potential adverse effects on benthic communities within the release zone.

The pre-drilling benthic data, which was compiled in November 2003 to establish baseline benthic habitat conditions in the Project area, will be used for comparative purposes. Benthic samples archived as part of this survey will be analyzed, as appropriate, to supplement the data base.

In the vicinity of the release, core samples will be collected where possible, both to monitor depositional thickness and to evaluate benthic macroinvertebrate communities. Every effort will be made to follow a random sampling design in each impacted habitat, with comparisons made to non-impacted zones of the same habitat.

At a minimum, in the event of a drilling fluid release, an inspection of the entire drill path will be conducted within approximately 48 hours following the completion of drilling activities. A brief report summarizing the status of drilling fluid deposits shall be prepared and provided to the DEP and the ACOE.

If requested by DEP or the ACOE, post-drill monitoring may be performed. The type of monitoring will depend on the characteristics of the river and whether any drilling fluid release occurred during the drill process. The monitoring approach specific to a crossing location will be determined in consultation with DEP and the ACOE.

## **6. EQUIPMENT**

The specific equipment at a particular HDD crossing will be tailored to the characteristics of the crossing (e.g., river width, depth).

**APPENDIX D**

**SEDIMENT AND EROSION CONTROL PLAN**

## APPENDIX D

### SEDIMENT AND EROSION CONTROL PLAN

CL&P's objective is to minimize the potential for erosion and sedimentation impact during construction and to effectively restore the work areas and other disturbed areas. CL&P will meet these objectives by implementing the erosion and sediment control measures contained in this section. These erosion and sediment control measures will serve as minimum standards during construction. In general, the measures are designed to minimize erosion and sedimentation by:

- Minimizing the quantity and duration of soil exposure;
- Protecting areas of critical concern during construction by redirecting and reducing the velocity of runoff;
- Installing and maintaining erosion and sediment control measures during construction;
- Establishing vegetation where required as soon as possible following final grading; and
- Inspecting the work areas and maintaining erosion and sediment controls as necessary until final stabilization has been achieved.

CL&P will be responsible for ensuring that all contractors implement and maintain erosion and sediment control measures during construction. This plan includes erosion and sediment control techniques that apply to all areas of construction, expands on the impact minimization associated with clearing, grading, ditching, installation, backfilling and restoration phases and discusses the use of construction safety precautions.

Construction and installation of an underground electric transmission line typically consists of several distinct phases: clearing, grading, ditching, installation, backfilling and restoration.

#### 1.0 CLEARING

All clearing activities will conform to the methods dictated in this section. Public road right-of-way boundaries, transmission line right-of-way boundaries, and off right-of-way workspace limits will be clearly delineated in the field before commencement of clearing activities. The Environmental Inspector will ensure that no clearing occurs beyond these boundaries.

##### 1.1 VEGETATION

Stemmed vegetation such as brush, shrubs and trees shall be removed at or near the ground surface to allow the root systems to remain intact. Trees and limbs will not be permitted to fall into watercourses.

The construction contractor will dispose of brush piles and/or tree stumps immediately. Trees and brush shall be disposed of in one or more of the following ways depending on applicable permit conditions and/or as designated by the Environmental Inspector:

- Brush Pile - All brush will be removed from wetland areas.
- Chipping
  - Chips may be left on the workspace with EI approval if placement does not inhibit revegetation.
- Off-site Disposal
  - Done when brush piles or chipping are not permitted.
  - Taken to an approved landfill or other approved facility approved for disposal of construction debris.

## 1.2 STORM INLET PROTECTION

Before commencing any land disturbing or pavement removal, storm water inlets that receive runoff from the proposed work area will be protected. The temporary inlet protection will remain in place until construction activities have been completed, the street has been swept, and any exposed soils are stabilized. The utility is also responsible for removing any temporary inlet protection they installed. After all disturbed areas have been stabilized, temporary inlet protection will be removed. Temporary protection of the inlets will be accomplished by one or more of the following:

- Use of gravel bags to filter the sediment from any runoff.
- Use of sediment logs to filter the sediment from any runoff.
- Use of under-grate filter bags to filter the sediment from any runoff.

## 2.0 GRADING

When existing topography and/or terrain does not permit crews and equipment to operate safely and does not provide access or an efficient work area, grading may be required. The following general construction methods will be employed by CL&P during grading:

### 2.1 TEMPORARY EROSION CONTROL BARRIERS

Hay / straw bales and silt fences are herein interchangeable except where noted. Temporary erosion control barriers will be installed prior to initial disturbance of soil and maintained until final restoration is completed. Temporary erosion control barriers will be installed in, near or abutting the right-of-way in the following areas:

- along banks of waterbodies between the workspace and waterbody after clearing. They will also be installed downslope of any stockpiled soil in the vicinity of waterbodies and vegetated wetlands.
- between wetlands and adjacent disturbed upland areas and as necessary to prevent siltation of ponds, wetlands, or other waterbodies adjacent to/downslope of the work areas.
- at the edge of the construction workspace as needed to contain soil and sediment.

Silt fence will be installed as directed by manufacturer and applicable permit conditions. A sufficient supply of silt fence shall be stockpiled onsite for emergency use and maintenance. Hay bales will be installed using stakes, minimum 2-inch diameter with bindings horizontal to the surface of the ground as noted in the 2002 CT Guidelines for Soil Erosion and Sediment Control. Bales will be replaced as deemed necessary by the EI if damaged or if they are improperly installed. A sufficient supply of bales shall be maintained on site for emergency use. Bales bound with wire or plastic shall not be used.

Temporary erosion control barriers will be maintained throughout construction and remain in place until permanent soil stabilization has been judged successful, upon which they will be removed (hay bales may be left in place). They will be inspected on a daily basis in areas of active construction or equipment operation, on a weekly basis in areas with no construction or equipment operation and within 24 hours of a storm event that is 0.1 inches or greater.

## 2.2 ROCK DISPOSAL

CL&P will not dispose of excess rock or other excavated spoils on the ConnDOT right-of-way. Excess Rock, including blast rock, shall be used or disposed of by one or more of the following methods:

- Hauled to disturbed property per landowner agreement. As part of the agreement, the landowner will accept responsibility for the rock and not place it in a wetland area.
- Removed and disposed at an approved site that is traditionally used for rock debris disposal.
- Used as riprap for stream bank stabilization where allowed by applicable permits.
- Used to construct stonewalls or fences, if approved by CL&P per landowner agreement.

## 3.0 TRENCHING

During construction activities on impervious surfaces such as streets and parking lots, measures will be implemented to reduce or prevent off-site discharge of sediments from vehicle tracking or storm water runoff. Measures include the following:

- Care in loading trucks to minimize spillage onto pavements.
- Stockpiles of material, either excavated or new material brought to the site, will be kept to a minimum and covered for extended storage periods (more than seven days).
- Impervious areas that have been tracked with sediments, or have sediments spilled or eroded onto them, will be swept and the sediments removed within 24 hours.
- Temporary storage of street sweepings prior to reuse or disposal will be located in an area where the sweepings will not wash into wetlands or watercourses.

## 4.0 INSTALLATION / BACKFILLING

The proposed transmission line will be installed by the conventional bury method unless specialized construction techniques are specified. During excavation, excavated native soils will be transported, stored and/or disposed of properly.

### 4.1 TRENCH DEWATERING

Trench dewatering will occur when perched water tables are encountered, when there has been a significant precipitation event or as otherwise needed to remove accumulated water. Hose intakes will be elevated off the ditch bottom to prevent sediment intake. Secondary containment of pumps will be used to avoid fuel and contaminants from entering wetlands and waterbodies. All dewatering locations will be approved by the EI prior to discharge. Discharges will be greater than 100 feet from a wetland or stream bank and will be directed into a well-vegetated area. If discharges are less than 100' the discharge will be directed to a filter bag and/or erosion control barriers. Under no circumstances will trench water or other forms of turbid water be directly discharge onto exposed soil or into any wetland, waterbody or ConnDot drainage system.

### 4.2 BACKFILLING

Excavations within the roadway will be backfilled with fluidized thermal backfill in accordance with municipal codes or state codes. The fluidized thermal backfill will limit any settling and provide controlled thermal characteristics. A final inspection will be made prior to backfilling to ensure that all debris has been removed from the ditch and the line coating is undamaged. Settling will be minimized with the use of compaction equipment, or a crown of soil will be placed over the facility to compensate for future soil settling. If crowning is used, openings shall be installed at regular intervals in the crown to allow for lateral surface drainage. Excess or unsuitable material shall be disposed of in accordance with applicable regulations.

## **5.0 RESTORATION, REVEGETATION, AND PAVEMENT REHABILITATION**

The final phase of construction is returning to the right-of-way to pre-existing conditions, or better. This will be accomplished using the following methodology.

### **5.1 RESTORATION AND REVEGETATION**

Restoration and revegetation of the work areas incorporates permanent erosion and sediment control measures. However, in the event that final restoration cannot occur in a timely manner due to weather or soil conditions, temporary erosion and sediment control measures will be maintained until the weather is suitable for final cleanup and revegetation. In no case shall final cleanup be delayed beyond the end of the next growing season.

Temporary restoration measures will be initiated as soon as practical on portions of the workspace where activities have ceased temporarily or permanently when:

- Initiation of stabilization measures are precluded by weather. Stabilization measures shall be initiated as soon as machinery is able to obtain access to the work areas.
- Activities will resume within 21 days. Stabilization measures will not need to be initiated by the fourteenth day following the cessation of activity.

If construction is completed more than 30 days before the perennial vegetation seeding season, wetlands areas and adjacent to waterbodies shall be mulched with straw or equivalent for a minimum of 100 feet on either side of the waterbody. Temporary plantings will be fertilized in accordance with the recommendations of the local NRCS office(s) or other soil conservation authority. Temporary sediment barriers will be removed when an area is successfully revegetated in compliance with applicable regulatory approvals.

Final grading will be completed immediately after backfilling, weather permitting. Construction debris shall be removed from the workspace, and the area will be graded so that the soil is left in the proper condition for mulching, seeding or natural revegetation.

### **5.2 REVEGETATION**

Revegetation will be used to establish long-term control of releases of sediment and erosion. The establishment of vegetation is critical to successfully restoring the right-of-way to pre-existing conditions. The workspace will be seeded within seven working days of final grading, weather and soil conditions permitting, and planted in accordance with recommended seeding dates. The seedbed will be prepared to an average depth of 3 to 4 inches using appropriate equipment to provide a firm, smooth seedbed, free of debris. Slopes steeper than 3:1 shall be seeded immediately after final grading in accordance with recommended seeding dates, weather permitting. The seed shall be applied and covered uniformly in accordance with the 2002 Connecticut Guidelines for Erosion and Sedimentation Control Guidelines.

When broadcast or hydro-seeding is utilized, the seedbed will be scarified to ensure sites for seeds to lodge and germinate, will be firmed after seeding and will be mulched with hay or straw to prevent erosion. Broadcast or hydro-seeding, when used, will be performed at double the recommended seeding rates.

Turf, ornamental shrubs and other landscaping materials shall be restored in accordance with individual landowner agreements.

### 5.3 MULCHING

After seeding, mulch will be applied at a rate of approximately 2 tons per acre on the entire right-of-way except wetlands, lawns, agricultural (crop) areas and areas where hydro-mulch is used. Mulch will also be applied if construction or restoration activity is interrupted for extended periods (greater than 21 days). If mulching is performed prior to seeding, mulch application will be increased on all slopes within 100 feet of waterbodies and wetlands to a rate of 3 tons/acre at a 4-inch depth. Mulch will be anchored immediately after placement on steep slopes and stream banks. Mechanically anchoring mulch will utilize a mulch anchoring tool or tracked equipment to crimp the mulch to a depth of 2 to 3 inches. Liquid mulch binders will be applied using application rates recommended by the manufacturer. Liquid mulch binders will not be used within 100 feet of wetlands or water bodies.

Matting or netting will be applied to sensitive areas (i.e., steep slopes, banks of waterbodies, bar ditches, etc.) in accordance with permit requirements and will be anchored with pegs or staples.

### 5.4 WETLANDS

CL&P will protect and minimize potential adverse impacts to wetlands by:

- Expediting construction in and around wetlands and limiting the amount of equipment and mainline construction activities within wetlands to reduce disturbances of wetland soils
- Limiting grading to the amount necessary to provide a safe workspace
- Segregating disturbed topsoil from subsoil, as practical, depending on soil saturation at the time of construction
- Restoring wetlands to their original configurations and contours
- Permanently stabilizing upland areas near wetlands as soon as practical after transmission line structure installation
- Inspecting the ROW periodically during and after construction and repairing any erosion control or restoration features until permanent revegetation is successful

Additional workspace at wetland crossings will be minimized and located at least 50 feet from the edge of the wetland where topographic conditions permit. No refueling of construction vehicles will occur within 100 feet of any wetland resource area. The setbacks from watercourses and wetlands will be clearly marked in the field before the start of construction of the Utility Bridges. Hazardous materials, chemicals, fuels or lubricating oils will not be stored nor will concrete coating activities be conducted within 100 feet of a wetland or waterbody boundary.

#### 5.4.1 Cleanup/Restoration

All construction debris shall be removed following installation of the Utility Bridges. Once the Utility Bridges are installed, CL&P will restore the original contours (within 6 inches) and flow regimes to the extent practical with the exceptions of unnatural features and unstable grades. The disturbed areas will be seeded with annual rye grass (40 pounds/acre, unless standing water is present) to stabilize the area until indigenous hydrophilic vegetation can become reestablished. If the wetland is seeded with lawn varieties of grass the area will be restored to match adjacent areas. If weather limits the effectiveness of reseeding efforts, non-paved work areas may be mulched to minimize erosion until conditions are suitable for reseeding at the discretion of the

OR and as allowed by all applicable permits. No fertilizer or lime shall be used in wetlands unless specified by the NRCS or landowner.

## **6.0 MONITORING/REPORTING**

Qualified personnel shall inspect disturbed areas of the construction site that have not been fully stabilized, structural control measures, areas used for storage of materials that are exposed to precipitation, and locations where vehicles enter or exit the site at least once every seven calendar days and within 24 hours of the end of a storm that is 0.1 inches or greater. Inspections for sites that have been temporarily or finally stabilized shall be conducted at least once every month for three months

Maintenance inspection reports shall be completed after each inspection and maintained with the Stormwater Pollution Control Plan (SPCP) for a period of three years after the date of inspection. Based on the results of the inspection, the description of pollution sources and prevention measures identified in the SPCP shall be revised as appropriate as soon as practicable after such inspection. Such modifications of any site changes shall be implemented within 24 hours and any changes to the SPCP shall be implemented within three calendar days following the inspection.

CL&P, or their authorized agent, will file quarterly activity reports with the appropriate authorities documenting problems, including those identified by landowners, and corrective actions take for 2 years following construction. Follow-up inspections will be performed after the first and second growing seasons after seeding to monitor the success of revegetation. Revegetation will be considered successful if vegetative cover is sufficient to prevent erosion of soils disturbed in the workspace. Typically, sufficient vegetation coverage is consistent with adjacent off right-of-way vegetation in both percent coverage and species present. If sufficient vegetative cover has not been achieved after two full growing seasons, additional restoration measures will be implemented. Erosion control devices will be removed upon successful stabilization and revegetation of disturbed areas.

**APPENDIX E**

**D&M PLAN CHANGE APPROVAL PROCESS**

## APPENDIX E

### DOCKET 272

### D&M PLAN CHANGE APPROVAL PROCESS

#### **Identification of Significant Changes:**

Once CL&P identifies a required change to the D&M Plan, it must determine whether it is a “significant change,” because such changes require advance Council approval. CL&P proposes the following criteria for identifying significant changes: a “significant change” is a change to the Project that significantly reduces the amount of protection to the environment or significantly increases potential public concerns. To be “significant”, the change must have a meaningful impact to the environment, public, or other permits.

For the underground portion of the Project, once CL&P identifies a potential change, it will consult with a Connecticut Department of Transportation (CDOT) representative to reach an agreement as to whether the change is “significant.” Any changes to existing CDOT facilities or affecting planned projects of CDOT would be considered “significant.”

#### **Procedure for Council Review of “Significant Changes” to D&M Plan:**

“Urgent” Case: If the change is “urgent” (i.e., if having to wait until the next regularly scheduled meeting of the Council to obtain approval of the change would have a material impact on construction cost or scheduling), then CL&P will contact Council staff to determine if the Council chairman will grant oral permission for the change so as to allow construction to continue in accordance with the proposed change. If oral permission is granted, CL&P will continue construction in accordance with the change and will file documentation regarding the change within 24 hours. If oral permission is denied, CL&P will file the proposed D&M Plan Change with the Council for review and will hold construction impacted by the change pending the Council’s determination.

“Non-Urgent” Case: If the change is not “urgent,” then CL&P will file the proposed D&M Plan Change with the Council for review at its next meeting and will delay the construction impacted by the change pending the Council’s determination.

#### **Procedure for Council Review of Other Types of Changes to the D&M Plan:**

For purposes of reviewing and processing changes to an approved D&M Plan that are not deemed to be “significant”, CL&P will categorize the change as one of the following:

*Non-significant change:* a change to the Project that may reduce the amount of protection to the environment or may increase potential public concerns, but only in a minor or trivial manner.

*Positive Change:* A change to the Project that increases the amount of protection to the environment or decreases public concerns, having no negative aspects in this regard (that is, positive impacts may not be considered to offset any negative impacts).

*Minor Change:* A change to a design aspect of a drawing, where the design has no bearing on the environment or potential public concerns.

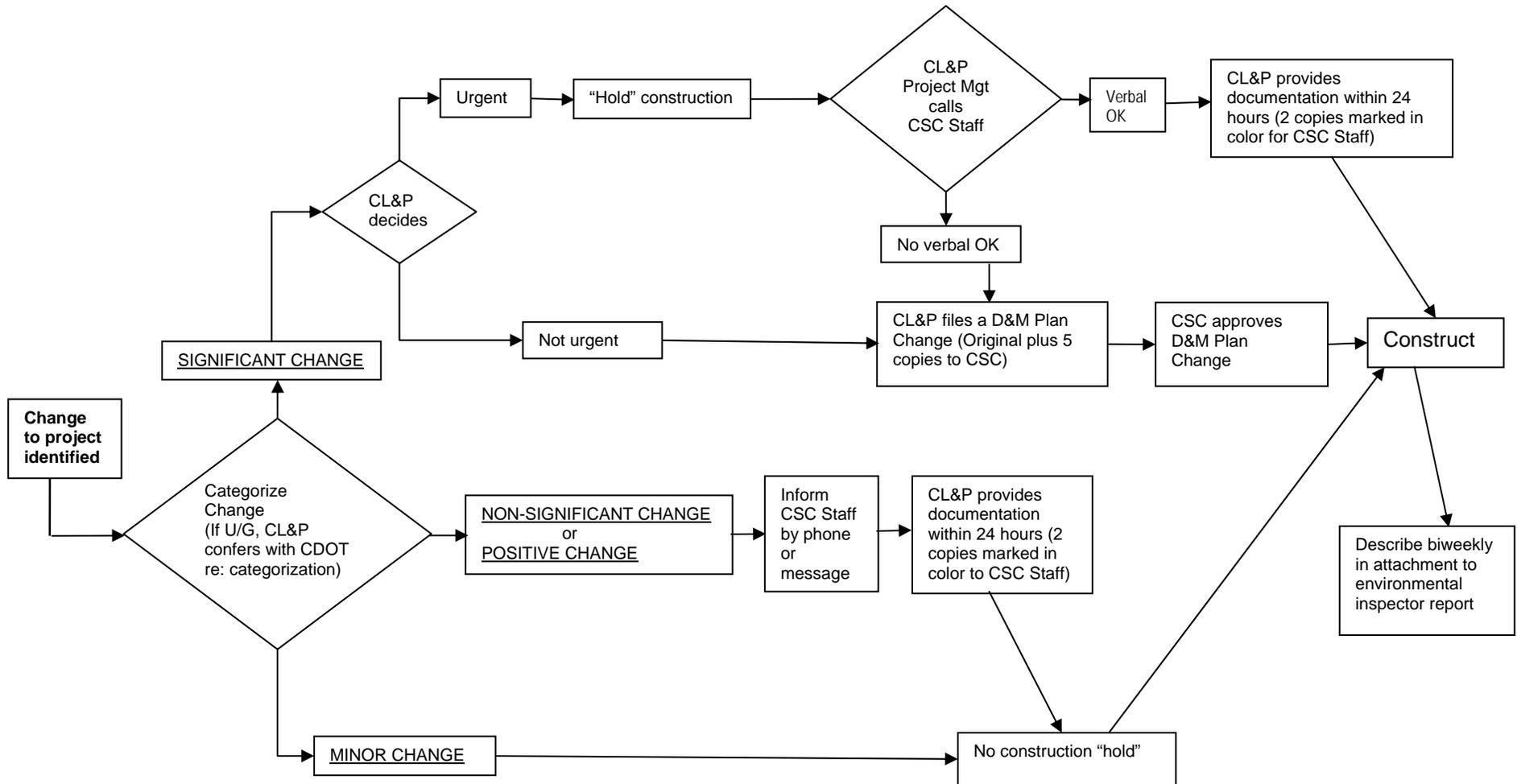
For “non-significant” and “positive” changes, CL&P will inform Council staff of the change by phone (or telephone message) and will file appropriate documentation with the Council within 24 hours. There will be no “hold” on construction for such non-significant and positive changes.

For “minor changes”, there will be no formal notification process prior to proceeding with construction incorporating the change, and the reporting of such changes will occur biweekly, as described below.

**Monthly Reporting of All Changes to D&M Plans**

CL&P will document all D&M Plan changes - significant, non-significant, positive, and minor – in an attachment to the environmental inspector’s weekly report.

**Middletown-Norwalk Transmission Project  
D&M Plan Change Approval Process**



**APPENDIX F**

**DOCUMENTATION OF USE  
OF ConnDOT ENCROACHMENT PROCESS**

## **APPENDIX F**

### **DOCUMENTATION OF USE OF ConnDOT ENCROACHMENT PROCESS**

To be included after agreement is reached with ConnDOT.