Northeast
Utilities System

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(860) 665-5000
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February 13, 2009

ORIGINAL

Mr. S. Derek Phelps
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Docket No. 370 - CT Greater Springfield Reliability Project

Dear Mr. Phelps:

This letter provides the response to requests for the information listed below.
The response to CSC-010 is too large to send by electronic mail so it will be sent on a CD.

Response to CSC-01 Interrogatories dated 01/28/2009
CSC-001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 023, 024, 025, 026

Very truly yours,

Robert Carberry ltr

Robert Carberry
Manager
Siting and Permitting
NUSCO
As Agent for CL&P

cc: Service List

RECEIVED
FEB 13 2009
CONNECTICUT
SITING COUNCIL

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Provide a list of Connecticut towns that are included in the "Greater Springfield" geographical area in terms of limited power. (p. A-2)

Response:
A sentence on page A-2 of the Application reads as follows: "These [extensive overload and voltage] problems limit the available power within the Greater Springfield geographical area and the transfers of power over the single existing 345-kV interstate tie line between Massachusetts and Connecticut." The reference to the Greater Springfield geographical area pertains to all of the towns and cities in Massachusetts which are supplied from substations connected to the 115-kV lines from Ludlow to Agawam to North Bloomfield. The reference to transfers of power between Massachusetts and Connecticut pertains to power supply for the entire state of Connecticut, not just to north-central Connecticut towns.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Why was the GSRP the first of the NEEWS projects to be submitted for approval?

Response:
GSRP was not the first NEEWS project to be submitted for state siting approval. That distinction belongs to the Rhode Island Reliability Project, an application for which was filed by National Grid with the Rhode Island Energy Facility Siting Board on September 8, 2008. The GSRP siting submissions in CT and MA were next for the following reasons:

1. The Springfield area has the most pressing transmission reliability needs. Under conditions existing today, the system could become overloaded even during normal conditions with all lines in service. The need case for GSRP is based on 2009 conditions. *See,* e.g., Needs Analysis, pp. 3,4,12, 14-17; Options Analysis, pp. 34, 35. Reliability in the Springfield area depends upon reliability agreements with must-run generators.
2. As ISO-NE has previously advised the CEAB, the nature of the need for the GSRP is such there is no practical or feasible generation alternative to GSRP. *See,* Memorandum from Stephen Rourke, Vice President, System Planning, ISO-NE to CEAB re: Response to Comments on SNETR, dated March 22, 2007, (Rourke Memorandum) pp. 3,4. The lack of a potential market alternative to address the GSRP need made it particularly important to proceed expeditiously with this project.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
If Option D of the future Interstate component of the projects were selected, how would the GSRP have to be modified (as stated on page 53 of Report 2 of Volume 5 of the application)?

Response:
Option D in the ISO-NE's Options Report and in the CL&P/National Grid Solution Report proposed as its main components a new 345-kV line from Millbury Switching Station to Carpenter Hill Substation and a new 345-kV line from Carpenter Hill Substation to Ludlow Substation, all in Massachusetts and entirely in National Grid's service area.

On page 53 of Report 2 in Volume 5 of the Application, ISO-NE notes that "additional Springfield upgrade(s) will be required" if Interstate Option D is selected. Specifically, Option D requires a rebuild of the existing 345-kV lines between Ludlow Substation and the Barbour Hill and Manchester Substations in CT, and a conversion of the existing Manchester - Barbour Hill - North Bloomfield 3-terminal circuit to form two 2-terminal circuits: (1) Manchester - Barbour Hill and (2) Manchester - North Bloomfield. Option D thus would require the following modifications to the GSRP and/or the MMP:

- The new MMP line built from Manchester Substation to Meekville Junction would be used as part of a 345-kV circuit, instead of a 115-kV circuit. The new MMP line is proposed to be pre-built for future 345-kV operation (i.e., using 345-kV class insulation, conductors and clearances), so physical modifications for this change would occur mainly at the ends of the new line section.

- If the GSRP's 345-kV line from Ludlow Substation to Agawam Substation were required to be constructed along the alternative Southern Route, it would need to be planned with an eye to a subsequent Option D 345-kV line rebuild within the shared right-of-way between Ludlow Substation and Hampden Junction in Hampden, MA. The arrangement of the lines on the ROW might be switched to avoid a cross-over at Hampden Junction, possibly requiring some advance construction of the Option D line rebuild with attendant circuit outage constraints.

- Because an additional 345-kV line terminal is required at Ludlow Substation for Option D, the GSRP would make a greater expansion of the existing Ludlow 345-kV switchyard area.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
In determining need for the proposed transmission line, did CL&P consider the development of generation projects outside of the north-central Connecticut area? How would the operation of generators in other parts of Connecticut change or reduce the need for the proposed transmission line project?

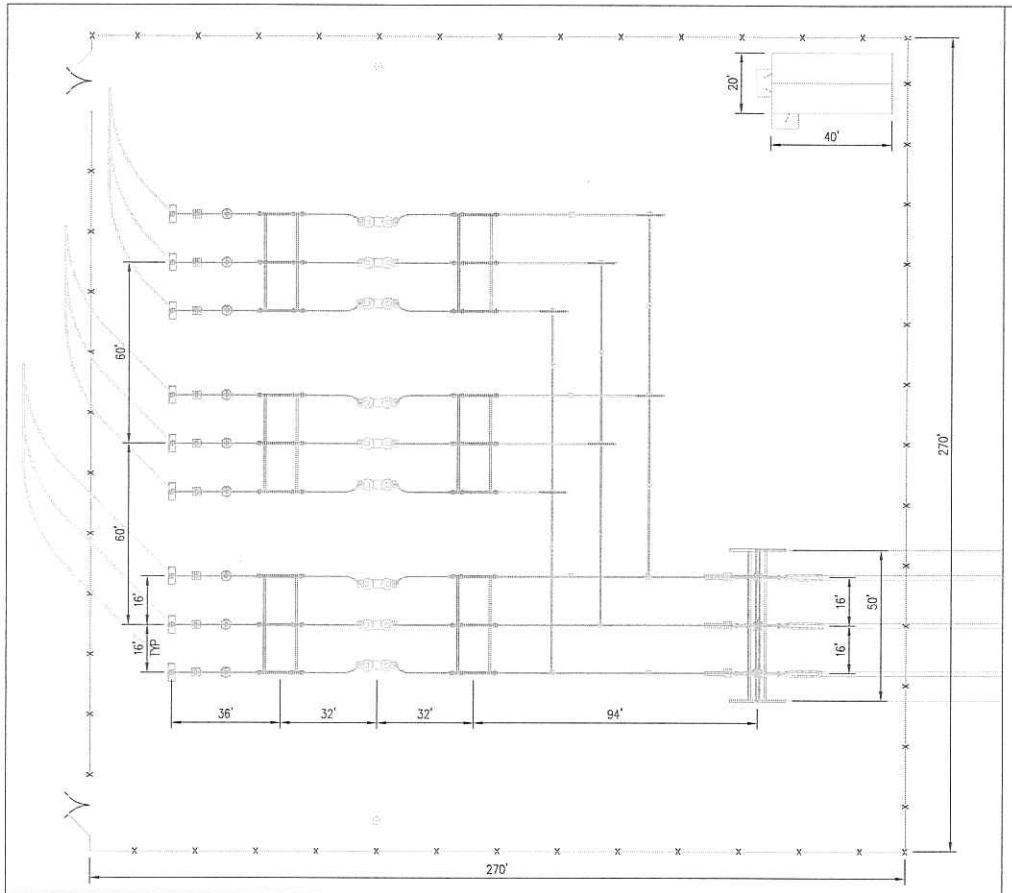
Response:
Several hypothetical generation projects outside of north-central Connecticut (in the Springfield area and in other parts of Connecticut) were considered in the Non-Transmission Alternatives (NTA) assessment performed by ICF International. See ICF's report, Exhibit 3 in Volume 5 of CL&P's Application. ICF's report concluded that the there were no practical non-transmission alternatives (including generation alternatives) that could replace or defer the need for the proposed transmission project, and that the proposed transmission project was necessary to meet mandatory reliability criteria. The operation of new and existing generators in other parts of Connecticut, when modeled under stressed load, resource and transfer conditions, has very little impact on the need to import into Connecticut within the range of the applicable import limits. As a result, this operation has little ability to solve the reliability criteria violations that the proposed transmission projects are designed to address.

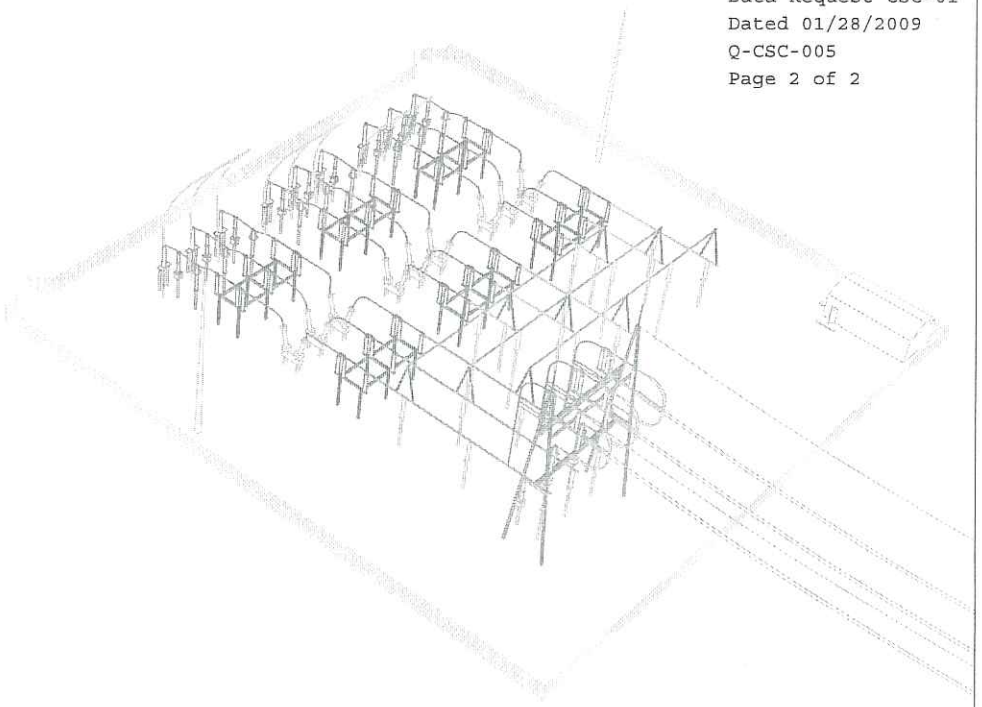
Witness: CL&P Panel
Request from: Connecticut Siting Council

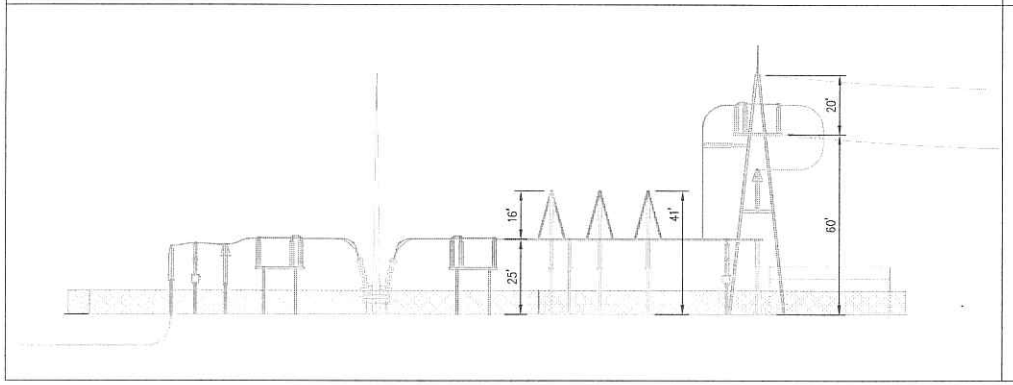
Question:
For a typical transition station, how much land out of the two to four acres needed, would contain equipment?

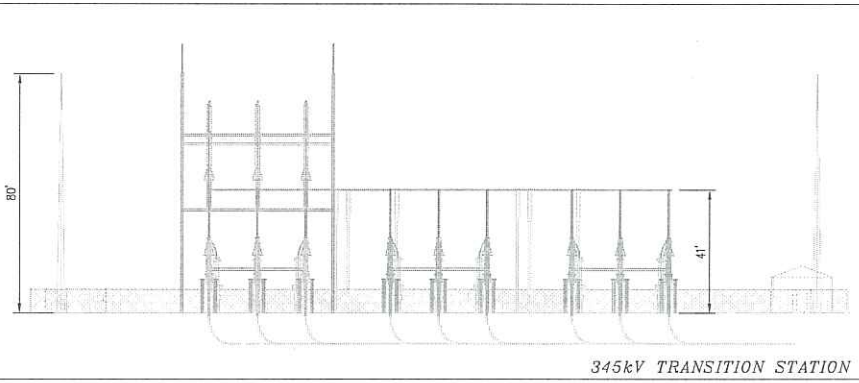
Response:
A typical transition station for connecting three sets of underground 345-kV cables to one overhead 345-kV line would require a minimum fenced area of 270 feet x 270 feet, or approximately 1.7 acres. See the attached drawing of such a transition station. Note that this minimum 1.7-acre area for equipment would need to be increased if the capacitive charging of the underground cables required compensating shunt reactors to be installed within the transition station.

The additional land beyond the fenced area would provide setback distances from property lines, access into the station, and consideration for any site-specific requirements.









345kV TRANSITION STATION

C:\NUSCO\45197\34_A-STATION\SUB.dwg (Layout1) 11-30-2007 13:05 DDL BAMCO

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Page H-50 of Volume 1 of the application states that an underground transmission cable installed in the overhead line ROW "would require less vegetation clearing than would be required for the overhead line construction along the same route." Please provide more of an explanation as to why this would be.

Response:
Construction of an underground transmission cable system within the existing ROW for the GSRP underground line variations requires a work-width area of approximately 60 feet, of which at least 10 feet requires vegetation removal (see Figure O-9, Cross Section XS-2 UG, Granby Junction to Phelps Road transition station - UG Variations along the ROW). Overhead construction of the proposed transmission line requires approximately 90 to 100 feet of vegetation removal.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
What is included in "permanent" erosion and sedimentation controls, as referred to on page J-6 of Volume 1 of the application?

Response:
Permanent erosion and sedimentation controls may be used in areas where wetlands and/or watercourses are nearby and no future construction is expected to take place. Permanent stabilization measures include the installation of water bars and crushed stone, erosion control blankets and/or re-vegetation of disturbed areas once work has been completed.

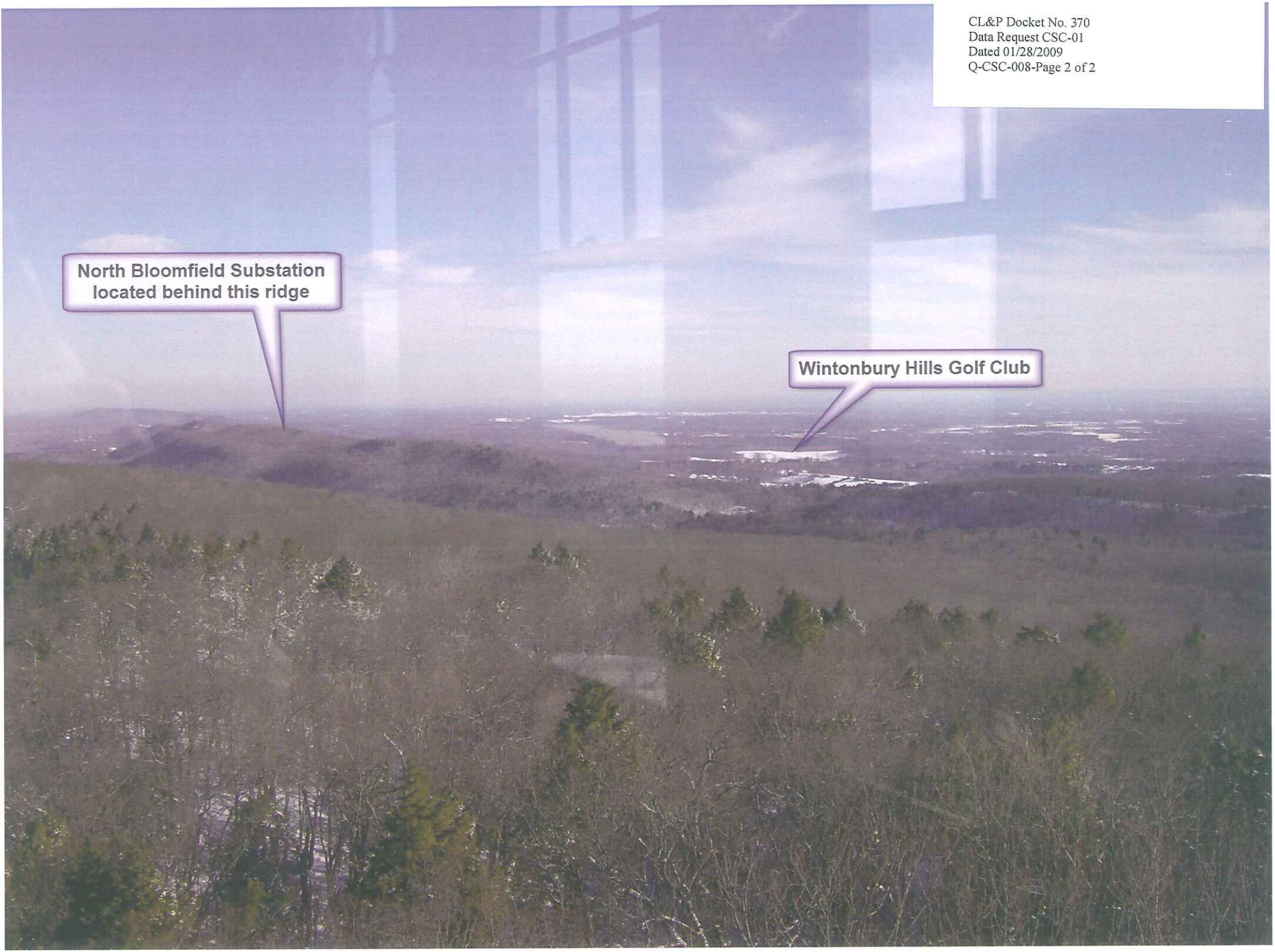
Erosion control blankets are generally composed of biodegradable or synthetic material and are used to prevent erosion, stabilize soils, and protect seeds from foragers while vegetation is re-colonized.

Where re-vegetation is proposed, topsoil removed during construction activities will be replaced, seeded, and mulched. If topsoil is not available or cannot be preserved during construction, it will be imported and spread prior to the application of seed. Seed areas will be treated with a layer of mulch to enhance moisture retention, dissipate impact from precipitation, and detract songbirds from foraging for broadcast seed. Appropriate seed mixes will be selected based on specific site conditions.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Would the proposed new structures associated with the proposed GSRP be visible from Talcott Mountain State Park?

Response:
No, the proposed GSRP fcilities would not be visible from Talcott Mountain State Park. The attached photo was taken from an observatory tower in the Talcott Mountain State Park. The hills north of the observatory tower block the view of the North Bloomfield Substation and the GSRP transmission corridor.


North Bloomfield Substation
located behind this ridge
Wintonbury Hills Golf Club

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Would the "Trail Management Blueprint" as associated with the Metacomet Trail impact the ability to locate new transmission line structures in the portion of the ROW that crosses the Metacomet Trail?

Response:
CL&P has obtained and reviewed the draft report entitled, "Metacomet Monadnock Mattabesett Trail System National Scenic Trail Feasibility Study and Environmental Assessment." The "Trail Management Blueprint" is included within that draft report.

It is CL&P's understanding, based upon its review of the referenced documents, that installation of a new transmission line (including its structures) within the existing CL&P ROW is not precluded, nor will such installation conflict with, the "Trail Management Blueprint."

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
What is the distance and direction of the Marion Wilcox Park, Newgate WMA, Farmington Valley Greenway, Spenser Woods and Fox Run at Copper Hill Golf Course to the nearest portions of the ROW boundaries for the proposed GSRP? How could the proposed project impact those properties?

Response:
Marion Wilcox Park is west of the North Bloomfield Substation and abuts property owned by CL&P to the north. The park boundary is about 740 feet from the substation and about 1,200 feet from the proposed transmission line. North Bloomfield Substation is proposed to be expanded to the south to accommodate new equipment, and there will be no direct impacts to the park. Vegetation clearing will be required to accommodate the expansion of the substation and new transmission line, but a buffer of trees will remain between the park and the substation/transmission lines. The attached map titled "Project Location Map Greater Springfield Reliability Project Marion Wilcox Park" provides an aerial view of the park and nearby transmission facilities.

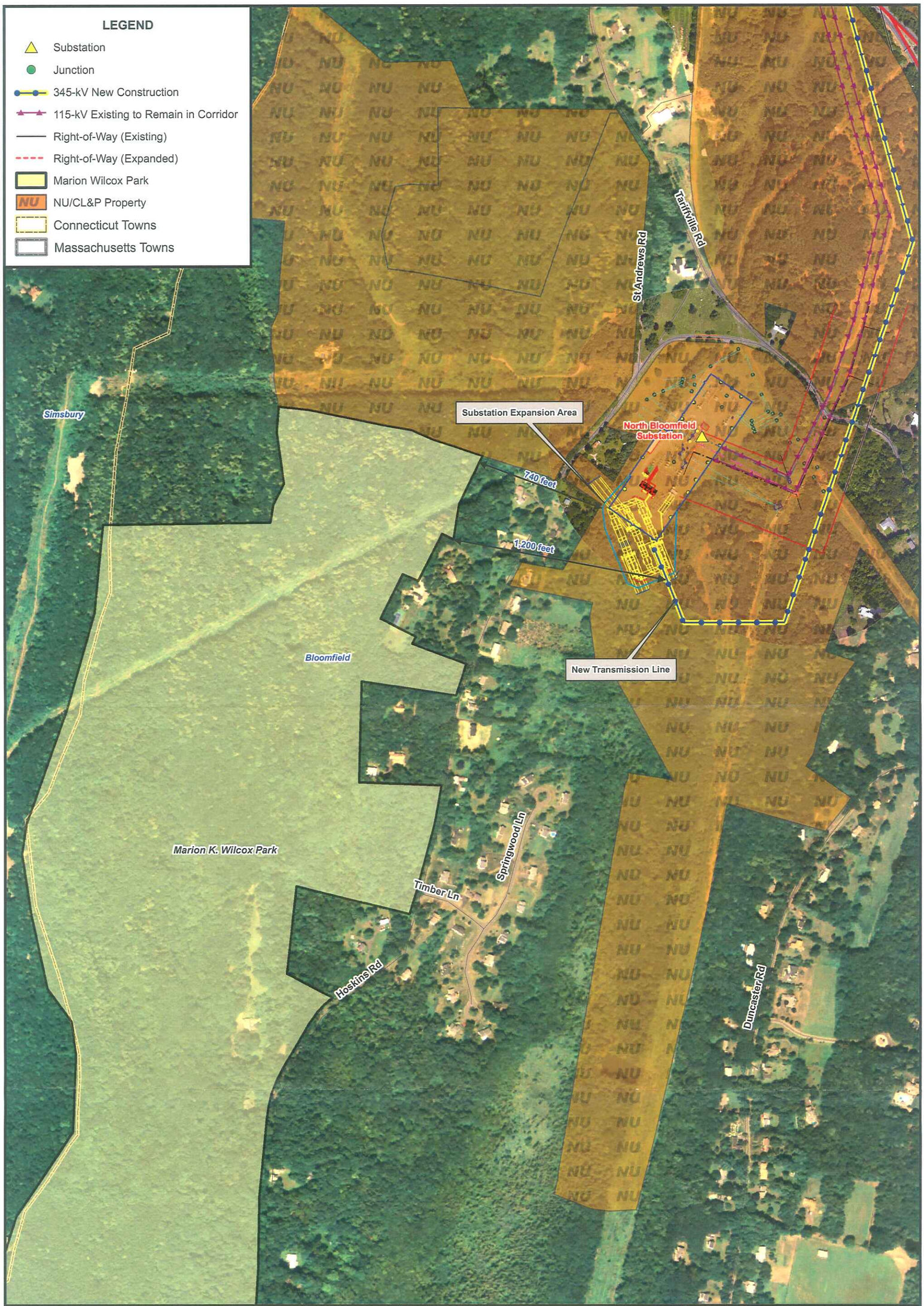
Newgate Wildlife Area is bisected by the transmission line corridor north of Turkey Hills Road, and also crossed by land owned by CL&P and leased to CT DEP on the north and south sides of Turkey Hills Road. Vegetation clearing within a width of approximately 100 feet (see the "Greater Springfield Reliability Project, Proposed Cross Sections, Granby Jct. to CT/MA Border XS-2" within Volume 10) for the proposed overhead transmission line would be required for approximately 8,300 linear feet through the Newgate Wildlife Area. If one of the in-ROW underground cable-system alternatives is selected, at least a 10-foot width of vegetation clearing within a 60-foot-wide work area would be required to accommodate its installation (see "Figure O-9, Cross Section XS-2 UG, Granby Junction to Phelps Road transition station - UG Variations along the ROW"). If an underground transmission line route is selected, two transition stations would be required in this area to transition from underground to overhead transmission. Each transition station will require approximately two to four acres of clearing within the management area. The attached map titled "Project Location Map Greater Springfield Reliability Project Newgate Wildlife Management Area" provides an aerial view of the management area, transition stations and nearby transmission facilities.

Farmington Valley Greenway is an abandoned railroad corridor that has been converted to a biking and hiking trail. It is located west of Granby Junction (south of Turkey Hills Road) at it closest location to the GSRP line route. Farmington Valley Greenway abuts CL&P property to the east and is approximately 280 feet from the proposed transmission line at its closest point. Vegetation removal will be required in the ROW to accommodate the new transmission line, but the existing 115-kV transmission lines and the existing tree buffer will remain between the ROW and the trail. No construction associated with the Greater Springfield Reliability Project will occur on the trail. The attached map titled "Project Location Map Greater Springfield Reliability Project Farmington Valley Greenway" provides an aerial view of the trail and nearby transmission facilities.

Spencer Woods is a property located to the east of the transmission line ROW near Phelps Road. The edge of the existing ROW is approximately 120 feet from the western boundary of the Spencer Woods property and approximately 300 feet from the centerline of the proposed transmission line. Vegetation clearing to accommodate the overhead transmission line would be required, but the existing tree buffer will remain between the transmission line ROW and the Spencer Woods property.

The attached map titled "Project Location Map Greater Springfield Reliability Project Spencer Woods" provides an aerial view of the Spencer Woods property and nearby transmission facility.

Fox Run at Copper Hill Golf Course is a semi-private nine-hole golf course located to the west of the existing and proposed transmission lines. The property boundary for the golf course is approximately 340 feet from the west edge of the ROW at its closest location and approximately 460 feet from the proposed transmission lines. Vegetation clearing will be required in the ROW to accommodate the new transmission line, but the existing tree buffer between the ROW and course will remain. The attached map titled "Project Location Map Greater Springfield Reliability Project Cooper Hill Golf Course" provides an aerial view of the course and nearby transmission facility.



Scale is 1:6,000 when printed at 11" x 17".

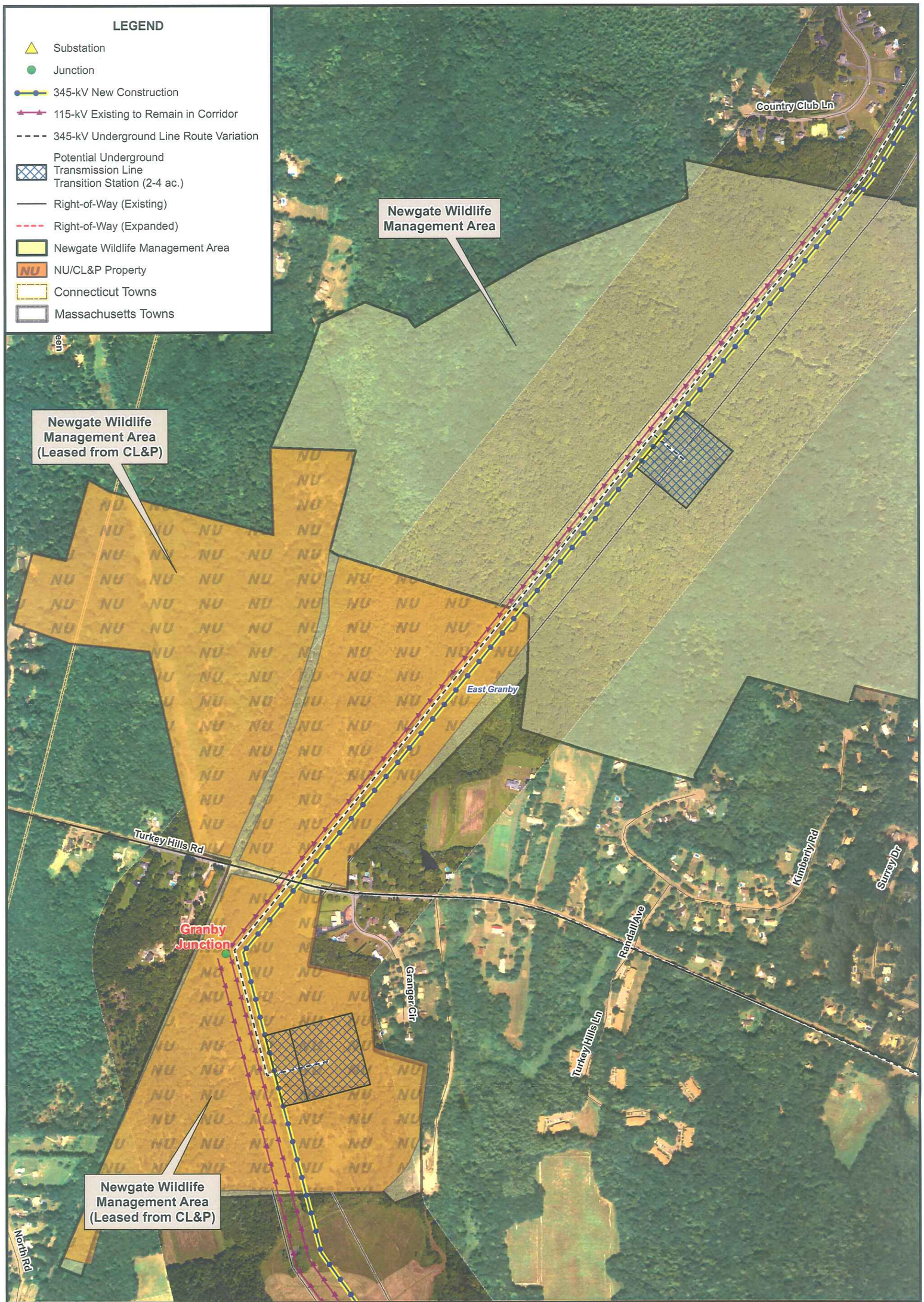
Source: Aerial Photography (2006 & 2007), CT DEP and Burns & McDonnell Engineering Co.

Burns & McDonnell SINCE 1898

Connecticut Light & Power
The Northeast Utilities System

Project Location Map
Greater Springfield Reliability Project
Marion Wilcox Park

Issued: February 3, 2009



Scale is 1:7,600 when printed at 11" x 17".

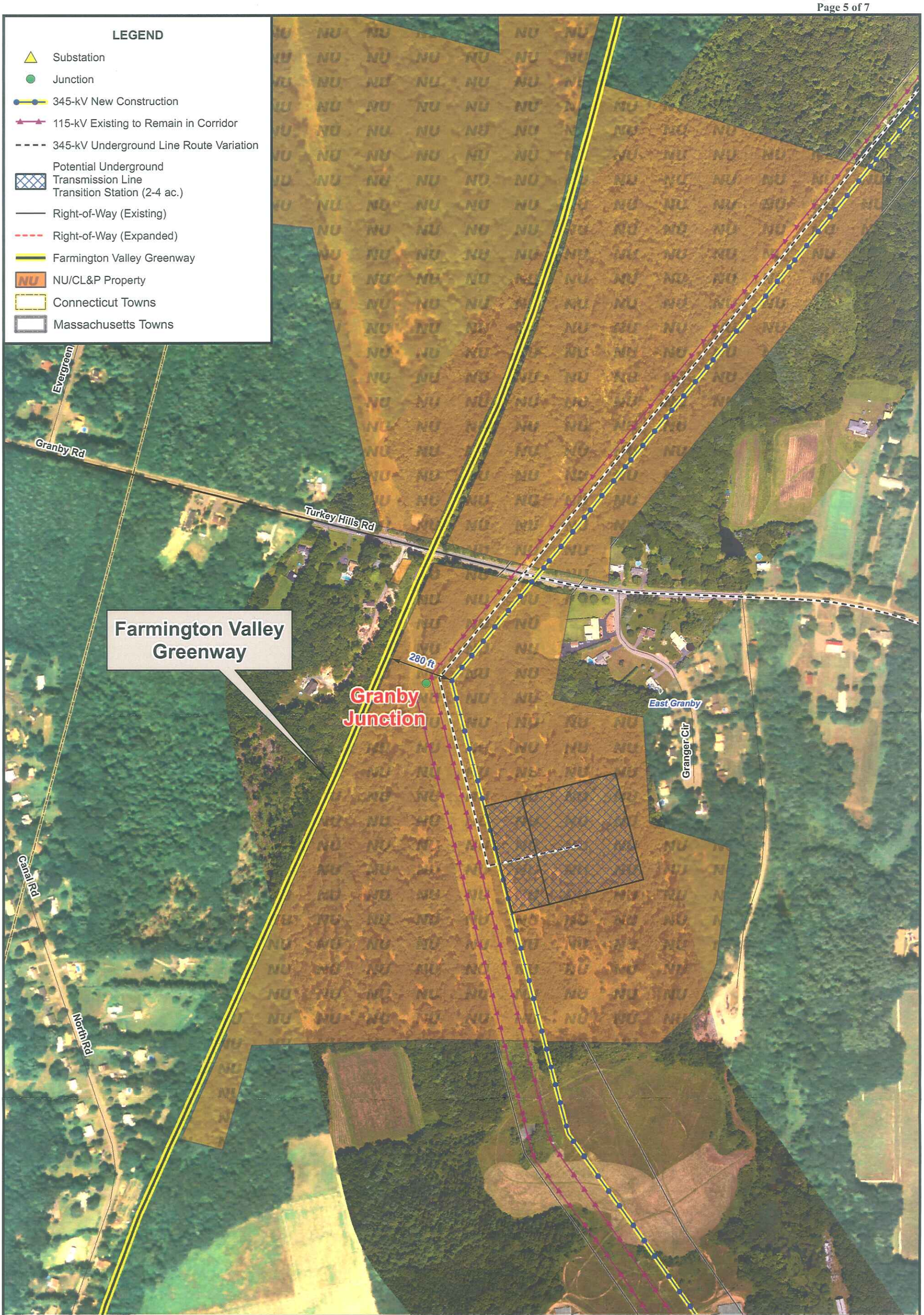
Source: Aerial Photography (2006 & 2007), CT DEP and Burns & McDonnell Engineering Co.

Burns & McDonnell SINCE 1898

Connecticut Light & Power
The Northeast Utilities System

Project Location Map
Greater Springfield Reliability Project
Newgate Wildlife Management Area

Issued: February 3, 2009



0 200 400 800 1,200 Feet

Scale is 1:4,800 when printed at 11" x 17".

Source: Aerial Photography (2006 & 2007), CT DEP and Burns & McDonnell Engineering Co.

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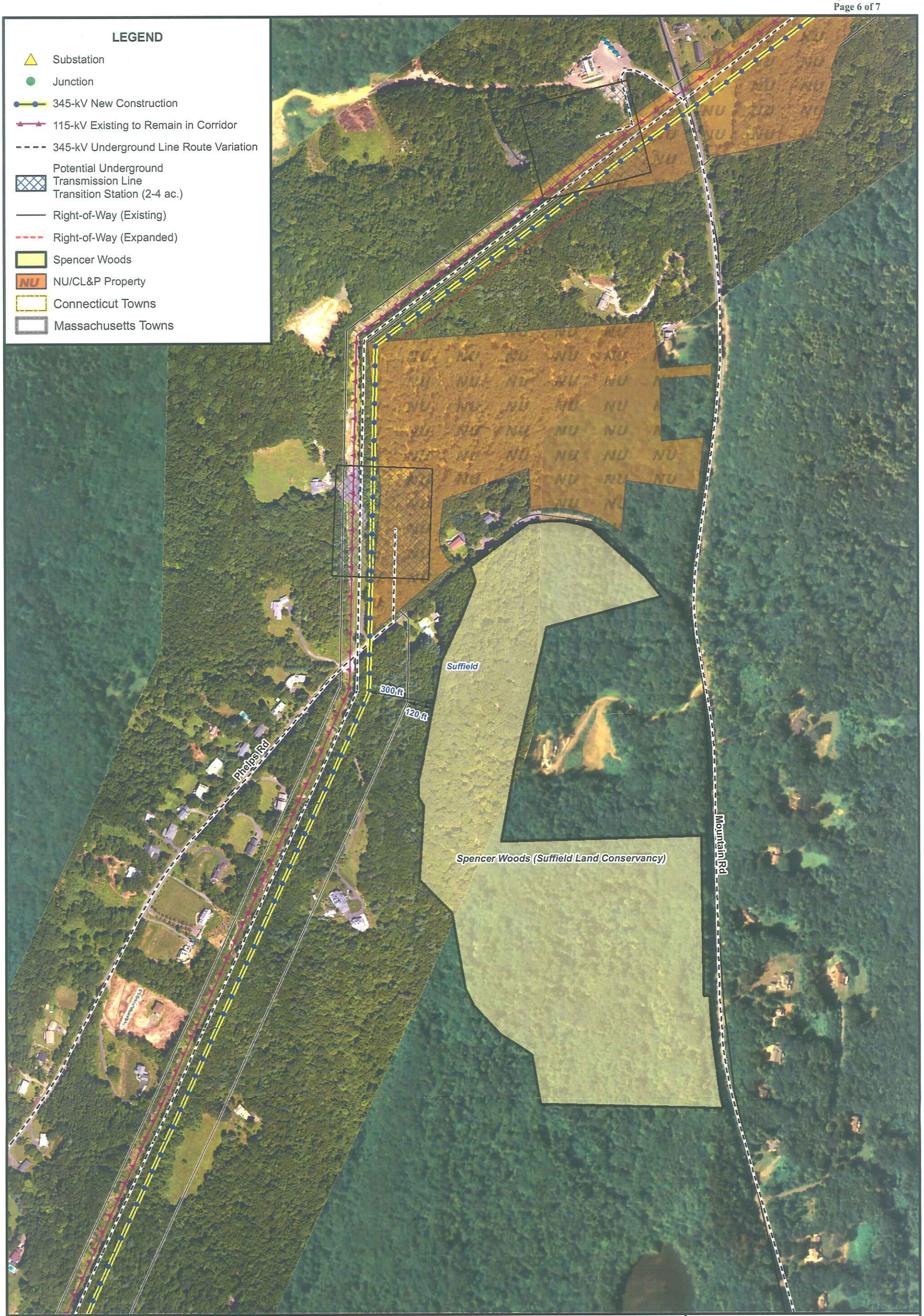
Burns & McDonnell SINCE 1898

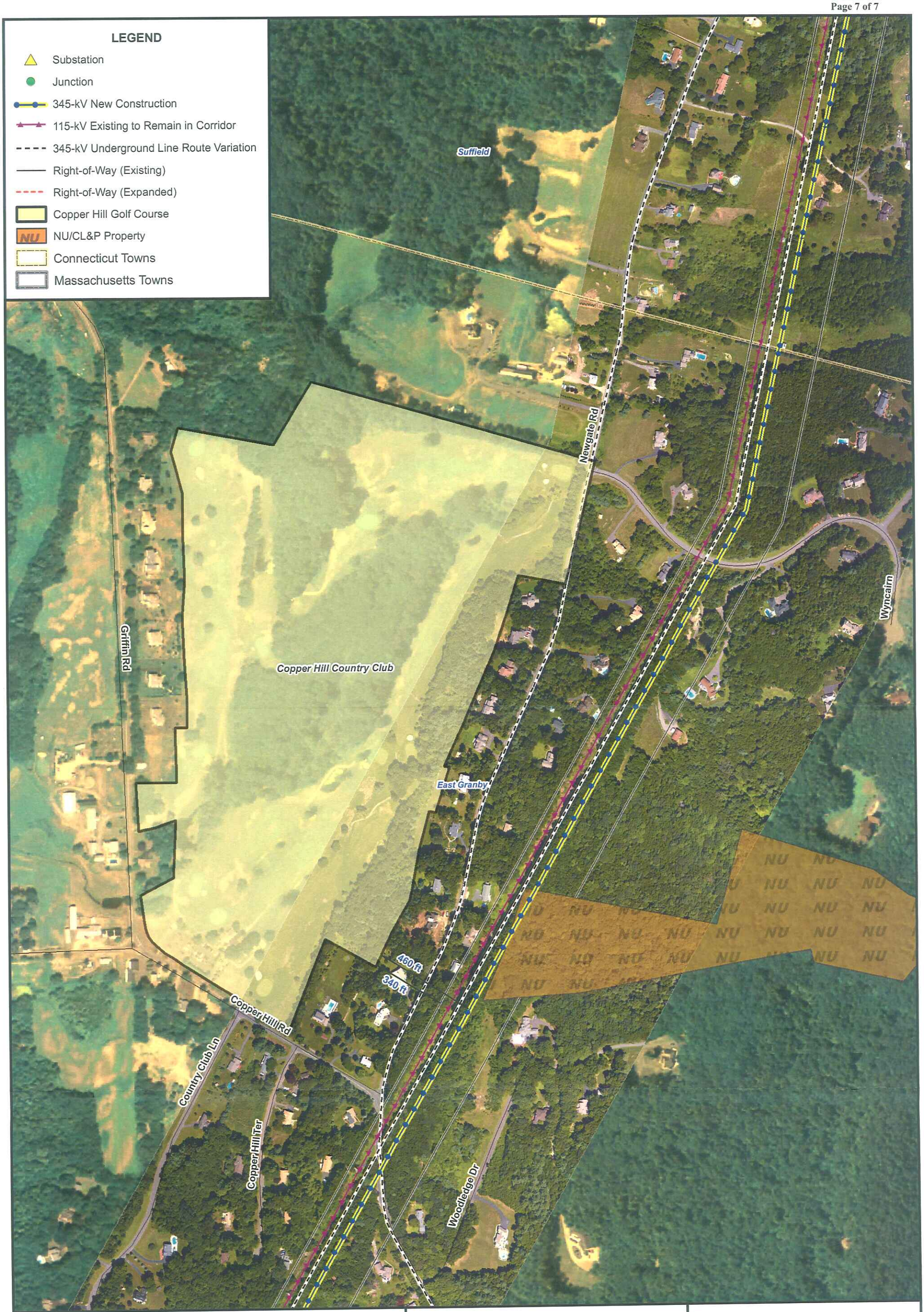
Connecticut Light & Power
The Northeast Utilities System

Project Location Map
Greater Springfield Reliability Project
Farmington Valley Greenway

Issued: February 3, 2009



Issued: February 3, 2009



0 200 400 800 1,200 Feet

Scale is 1:4,800 when printed at 11" x 17".

Source: Aerial Photography (2006 & 2007), CT DEP and Burns & McDonnell Engineering Co.

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Burns & McDonnell SINCE 1898

Connecticut Light & Power
The Northeast Utilities System

Project Location Map
Greater Springfield Reliability Project
Copper Hill Golf Course

Issued: February 3, 2009

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
What type of mitigation measures would be used minimize the noise from the modified North Bloomfield Substation?

Response:
No special sound-mitigation measures are needed or proposed at North Bloomfield Substation. Please refer to the noise assessment in section L.1.9 of the Application which concluded that "the proposed modifications [including new autotransformers] at the North Bloomfield Substation will be in compliance with all Connecticut noise regulations." Table L-15 on page L-58 of the Application provides a comparison between the projected noise levels and the relevant Connecticut noise limit at two locations along the existing substation fenceline which are in the directions of the nearest residences.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Please estimate the amount of cut and the amount of fill that would be necessary to expand the North Bloomfield Substation.

Response:
It is estimated that 6800 cubic yards of cut and 2000 cubic yards fill will be required to expand the North Bloomfield Substation.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
In Volume 2 of the application, on the aerial photographs in Appendix B, what do the small grey squares (shown along or adjacent to the existing transmission line) represent?

Response:
The grey squares are surface features (existing structure locations, fence corners, sheds, pools, etc.) within the ROW, noted by field crews during wetland and watercourse delineation.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Has CL&P met with the CT DEP regarding development of appropriate rare species mitigation measures for the GSRP, as stated in the CL&P letter to the DEP dated September 15, 2008 (in Volume 4 of the application)? Has CL&P received a response letter from the CT DEP confirming possession of all data pertaining to rare species and that CL&P's proceedings are consistent with the expectations and goals of the CT DEP relative to the GSRP (as also requested in the letter from CL&P to the CT DEP)?

Response:
CL&P representatives met with CTDEP on April 1, 2008. During this meeting, the anticipated effects of the Project on rare species were discussed, and CL&P solicited input from the DEP staff with regard to recommended rare species surveys and study protocols, and also potential mitigation measures that may be required to compensate for such effects.

CL&P received a letter from the CTDEP, dated September 26, 2008, expressing concurrence that project proceedings as of that date were consistent with CT DEP expectations (copy attached). CL&P anticipates additional consultation(s) with the CTDEP in the near term to further discuss the development of mitigation measures to be implemented for the protection of rare species in the Project vicinity.

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

September 26, 2008

Mr. Scott Marotta, Environmental Scientist
Northeast Utilities
107 Selden Street
Berlin, CT 06037

re: Greater Springfield Reliability Project

Dear Mr. Marotta

Your project update to Dawn McKay was received by me on 9/17/08. The Wildlife Division concurs that your proceedings to date are consistant with CT DEP expectations, namely that:

In areas where the state species of special concern, Eastern Box turtles (*Terrapene c. carolina*) may occur;
Mapsheet 1 of 4 – Yellow hatched circles
Mapsheet 2 of 4 – Yellow hatched circles
Mapsheet 3 of 4: Yellow hatched circle to the west of Granby Jct.
Mapsheet 4 of 4: Yellow hatched circle to the near Hatchett Hill Road
We recommend that work be done in the dormant season, October through April, or if grubbing is necessary, the Wildlife Division recommends the following:

1. install fencing around the work area prior to construction.
2. conduct a sweep of the work area looking for turtles prior to construction
3. workers are apprised of the possible presence of box turtles and a description of the species
4. any box turtles that are discovered be moved, unharmed, to an area immediately outside of the fenced or work area in the same direction that it was walking.

Mapsheet 4 of 4: Yellow hatched circle to the near Hatchett Hill Road
The state species of special concern Jefferson salamander (*Ambystoma jeffersonianum*) has been discovered. We recommend that work be done in the dormant season, October through February and that work done in or near undisturbed second growth deciduous forests and their breeding pools be done to reduce any negative impacts to this species.

Standard protocols for the protection of wetlands should be followed and maintained during the course of the project. Additionally, all silt fencing should be removed after soils are stable so that reptile and amphibian movement between uplands and wetlands is not restricted.

Regarding:
Mapsheet 3 of 4: Yellow hatched circle to the east of Granby Jct.
Map 4 of 4: Yellow hatched circles near the Spoonville Bridge
The status of the watercourses was not determined by ENSR nor the impacts on Eastern Pearlshell mussel (*Margaritifera margaritifera*), Arrow Clubtail dragonfly (*Stylurus spiniceps*), and the state and federally endangered, dwarf wedgemussel (*Alasmidonta heterodon*).

Regarding the proposed upgrade and expansion of CL&P Manchester Substation to Meekville Junction in Manchester
Appendix G provided survey information on the state endangered species, the Barn Owl (*Tyto alba*). The Wildlife Division recommends that no large diameter trees be cut in the area along the Hockanum River that is located within the transmission corridor.

If you have any additional questions, please feel free to contact me at Julie.Victoria@ct.gov , please reference the NDDB # at the bottom of this letter when you e-mail or write. Thank you for the opportunity to comment.

Sincerely,

Julie Victoria, Wildlife Biologist
Franklin Swamp Wildlife Management Area
391 Route 32
N. Franklin, CT 06254

cc: NDDB – 15747, 16104

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
What problems occurred during construction of the Bethel to Norwalk and Middletown to Norwalk line that may pertain to the proposed GSRP as "lessons learned"?

Response:
Problems which occurred during the construction of the Bethel to Norwalk and Middletown to Norwalk transmission lines can be broadly classified in two categories: (1) civil construction complications owing to discoveries of unexpected underground obstacles or conditions, and (2) construction-related disturbances to neighbors, commuters or the local communities. The civil construction complications were more prevalent with the underground cable system construction on these projects, and also the construction of the recently completed Glenbrook Cables Project. The underground line construction on all three projects faced many more challenges than overhead line construction typically encounters, including splice-vault location and excavation issues, unmarked sewers and underground utilities, railroad crossings, traffic control, and work-hour constraints. Horizontal directional drilling on the Middletown-Norwalk project proved to be disruptive and disturbing to nearby residents. Department of Environmental Protection requirements for soil and water handling associated with trenching for the underground cable systems were also problematic and costly. Some other disturbance problems experienced on these projects were issues with noise, unauthorized use of construction access roads, and lost tree/shrub screening.

The importance of frequent community outreach was the primary lesson learned in dealing with these problems. This outreach was necessary to ensure that neighbors, residents and municipal officials were well informed and were given an opportunity to voice concerns. Maintaining this two-way communication was essential in limiting situations in the field that would have been more difficult to address without a clear understanding of the construction activities anticipated in a certain area. For GSRP, community outreach has already started, and it will be designed during construction to occur well in advance.

CL&P's outreach efforts grew significantly from the early stages of the Bethel to Norwalk project through its completion, and continued to be improved through the Middletown to Norwalk project.
Some of the areas of particular concern that this outreach was designed to address include:

1. Work hours - The project community relations team could work with contractors to adjust work hours in selected sensitive areas. The sensitive areas may include residential areas, commercial areas or areas near public facilities.
2. Access to businesses - if construction activities could impact access to local businesses, the project team worked with the landowners to identify alternative access in an effort to minimize impacts. This is of particular concern with underground construction along roads such as Route 1 or Route 7.
3. Trespassing - Construction access roads may sometimes provide access to public ROW. The project team should always consult with underlying landowners to determine if access gates should be installed to mitigate the unauthorized use of these access roads to the ROW. Over 100 gates were installed on the Middletown-Norwalk project for this purpose.

4. Vegetation/landscaping - Work with landowners to minimize impacts to fences, lawn grass and landscaping.
5. General housekeeping of the work area during construction - Ensure spoil piles and old poles are removed in a timely manner, and minimize the equipment left in certain areas after work hours to the extent possible.
6. Monthly conference calls with the project municipalities - Conference calls with municipal representatives began during the Development &Management plan phase of each project, approximately 6 months prior to the start of line construction. The calls were designed to inform and answer questions regarding construction status and plans, and they provided an opportunity for municipal officials to communicate about upcoming municipal projects, municipal concerns, and landowner communications.
7. Noise - When planning to use vibratory rollers in dense residential areas, consult with the landowners on the anticipated duration and time of the disturbance. When work activities occur at night (e.g., trenching on busier state roads, soil removal), implement low-cost practices to minimize noise disturbance, perhaps even providing a hotel room as relief for a resident. Also, blasting is a practice that can reduce the disturbance caused by hammer-hoe noise.
9. Connecticut Department of Transportation ("CDOT") - Coordination with CDOT over vault locations, traffic patterns, construction practices and work times (that may conflict with residential work-hour requests) is critical. CL&P assigned an individual to act as "liaison" with CDOT to assist in these issues.
10. Neighbor notices - Advance mailers in addition to door hangers better ensure that neighboring residents are aware of work schedules.

The Middletown - Norwalk experience also demonstrated some of the limitations of community outreach. As part of the Development & Management Plan process, municipal representatives and landowners were given the opportunity to express preferences for different types of overhead line structures - basically to choose between lower, less visible structures and taller, sometimes bulkier structures to support conductor configurations producing lower magnetic fields at the edge of the right-of-way. In many cases, the officials and landowners specified the taller poles, and other stakeholders, or in several cases, those who had made the choice themselves, expressed acute dissatisfaction with the results of the choice. Stakeholders were also invited to express preferences with respect to different finishes for the line structures - either galvanized steel or "weathering" steel, which rusts. In one case, a town regretted its choice when it received numerous complaints from landowners. In addition, different choices by different towns resulted in a segment of right-of-way with an unusual appearance caused by the change from one structure finish to the other.

Other areas where improvements were realized during construction, or would be considered for GSRP, are:

1. Security - proper ID (personal and vehicles) for all individuals on the project site.
2. Requiring contractors to have a Certified Forest Practitioner was beneficial to the project. The forester is familiar with vegetation removal equipment capabilities, wetlands vegetation, upland vegetation, and can communicate with the public about the vegetation effects.
3. Additional schedule time is needed to inspect construction areas after a rain event.
4. Improve edge-of-ROW surveying with the use of paint in addition to stakes and flags.
5. Spend more time documenting pre-existing conditions to help deal with restoration issues and claims of property damage.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
What problems have occurred within the underground portion of the Bethel to Norwalk, Middletown to Norwalk line and the Glenbrook cables since operation has begun? Has CL&P changed any procedures for future projects as a result?

Response:
Please see the attached operating annual reports dated December 31, 2007 and December 31, 2008 for the Bethel-Norwalk Transmission Project. These reports describe events which have occurred with the new Bethel to Norwalk transmission facilities, including the underground 345- and 115-kV cable systems, since operations began. The Glenbrook-Norwalk 115-kV cable systems began operation in November 2008, and the Middletown-Norwalk 345-kV cable systems began operation in December 2008. Each of these cable systems has been in operation for only a short period of time, and neither has experienced operating problems to date.

Together, these underground cable systems have increased the complexity of operating the transmission system in southwest CT. Voltage control has become more challenging on the system with the completion of these three projects, owing to the high VAR demands of their underground cables. Switching procedures for the new circuits have also become more complex. The underground 345-kV cables inject large amounts of reactive power (Vars) into the transmission system. This causes higher voltage conditions in the transmission system during light load periods. Further, switching these cables in and out of service is more complex, requiring pre-switching and post-switching analysis and then adjustments to the transmission system and to shunt reactors to accommodate the sudden change in reactive power injected into the system. The 115-kV cable systems installed under the Glenbrook Cables Project also inject reactive power into the system, although much less than the 345-kV cables do. Nonetheless, these cables add to the challenges of mitigating high voltage problems during light load periods. Finally, with the addition of the Middletown to Norwalk underground 345-kV cable sections and its six shunt reactors, adding to the three shunt reactors installed on the Bethel to Norwalk project, system-operator response to any typical or abnormal system condition has become challenging. Operator response has slowed significantly because of the time it takes to adjust the shunt reactors and to ensure that system voltages remain within acceptable ranges. Delays in operator response to an abnormal system condition could lead to overvoltages, risking damage to electrical equipment. And failure to quickly correct a too-low voltage condition could result in cascading outages across a large area of the interconnected transmission grid.

CL&P is revising its transmission system operating procedures to address the challenges of voltage control during light load periods and the increased operator burden caused by a more complex transmission system. Owing to the additional underground cables in roads, CL&P also plans more interface with roadway owners to strengthen dig-in prevention efforts.

In CL&P's development of new transmission projects potentially employing underground cable segments, the potential for excessive temporary overvoltages ("TOV") will now also be studied as a standard practice. And CL&P will be watching for new technologies that can enhance the capabilities and/or reduce the problems posed by underground cable systems. More accurate fault-locating technology for hybrid overhead/underground circuits is one example of a technology development CL&P would now be interested in to more quickly return such a circuit to service following a fault on the overhead line section.

Northeast
Utilities System

107 Selden Street, Berlin CT 06037

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

December 31, 2008

Daniel F. Caruso, Chairman
Connecticut Siting council
Ten Franklin Square
New Britain, Ct 06051

Re: Docket No. 217, Bethel-Norwalk Transmission Project
Decision and Order Condition #7

Dear Judge Caruso:

On July 14, 2003, in Docket 217, the Connecticut Siting Council ("Council") approved The Connecticut Light and Power Company's ("CL&P's") Application for a Certificate of Environmental Compatibility and Public Need for the construction of the Bethel-Norwalk Transmission Project. Condition #7 of the approval was that CL&P "provide the Council with an operating report within three months after the conclusion of the first year of operation, and annually thereafter, with information relevant to the condition, safety, reliability and operation of the cable system."

The purpose of this letter is to respond to this condition of approval. The Bethel-Norwalk 345-kV transmission line, including its cable systems, entered service on October 12, 2006. CL&P's initial operating report was submitted to the Council on December 31, 2007.

The overall condition and safety of the 115- and 345-kV cable systems constructed as part of the Bethel-Norwalk Transmission Project, including the 345-kV XLPE cables in Bethel and the 345-kV HPFF cable systems in Redding and Wilton, continue to be excellent. Reliability and operation of the hybrid 345-kV circuit remains acceptable through the second year of operation. To date, the 345-kV circuit operated with one or the other of the two HPFF cable systems as part of the circuit, but not both together.

Operating events during 2008 which caused CL&P to remove from service either a 345-kV cable system or the entire 345-kV circuit are as follows:

- A disturbance on the line on April 8, 2008 resulting from the venting of an energized 345-kV GIS gas zone during a switching operation at Norwalk Substation caused the circuit to automatically trip. During the operation, which was being done to support the MN345-kV project addition of three new terminal sections, the wrong valve was operated, resulting in a fault condition. For safety purposes, the circuit was kept out of service until

the MN345-kV project additions to the Norwalk Substation GIS were completed on June 13, 2008.

- The line tripped out of service on August 7, 2008 due to a lightning strike to the overhead portion of the line. Since the line employs both overhead and underground construction, it is not equipped with automatic reclosing. The line was patrolled and inspected for damage, to assure no fault occurred in the underground cables, and was returned to service after 21 hours.
- A planned outage lasting five hours occurred on July 7, 2008. The 345-kV circuit and the Norwalk autotransformer were taken out-of-service to support testing of new GIS terminal sections at the Norwalk Substation.

Given that the condition, safety, reliability and operation of the cable system have been excellent over the past two years, CL&P will be requesting, under separate cover, that the need for these annual reports be discontinued.

Please direct any questions you may have about this report to me at 860-665-2036.

Sincerely,

John R. Morissette
Manager
Transmission Siting and Permitting

JRM:lpc

Northeast Utilities System

107 Selden Street, Berlin, CT 06037

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Robert E. Carberry
Manager – Transmission Siting and Permitting

December 31, 2007

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

Re: Docket No. 217, Bethel-Norwalk Transmission Project
Decision and Order Condition #7

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The purpose of this letter is to respond to this condition of approval. The Bethel-Norwalk 345-kV transmission line, including its cable systems, entered service on October 12, 2006.

The overall condition and safety of the 115- and 345-kV cable systems constructed as part of the Bethel-Norwalk Transmission Project, including the 345-kV XLPE cables in Bethel and the 345-kV HPFF cable systems in Redding and Wilton, has been excellent to date. Reliability and operation of the hybrid 345-kV circuit has been acceptable for the first year. No forced circuit interruptions have occurred. To date, the 345-kV circuit has operated with one or the other of the two HPFF cable systems as part of the circuit, but not both together. Operating events which have caused CL&P to manually remove from service either a 345-kV cable system or the entire 345-kV circuit are as follows:

- The 345-kV circuit was switched out of service for approximately 62 hours from January 9, 2007 to January 11, 2007 and for approximately 105 hours from April 24, 2007 to April 28, 2007 to install and test an emergency isolation scheme for transient overvoltage protection, a requirement imposed on this circuit by the Middletown-Norwalk Transmission Project.
- The 345-kV circuit was switched out of service for approximately 12 hours on January 17, 2007 to adjust contacts in two new 345-kV disconnect switches at Plumtree Substation.

- The 345-kV circuit was switched out of service for approximately 20 hours from April 16, 2007 to April 17, 2007 for flooding inspections of control equipment at Norwalk Junction Transition Station.
- The 345-kV circuit was switched out of service for approximately 50 hours from August 23, 2007 to August 25, 2007 because the circuit switcher protecting the 345-kV shunt reactor at Plumtree Substation required maintenance. The circuit must be removed from service if this shunt reactor is unavailable.
- The 345-kV circuit was switched out of service for approximately 60 hours from October 31, 2007 to November 2, 2007 for splice-vault modifications.
- The 345-kV circuit was switched out of service for approximately 14 hours on December 5, 2007 due to excavation damage to one of the HPFF cable system pipes. The circuit was returned to service with the other cable pending repairs.

In its first year of operation, the Bethel-Norwalk Transmission Project reduced Connecticut's congestion costs by nearly $150 million and improved the reliability of Southwest Connecticut's bulk power supply.

Please direct any questions you may have about this report to me at 860-665-6774. Also, I would like to ask the Council for a clarification on condition #7 of the Docket 217 certification. The condition requires this report and similar reports "annually thereafter". No end date for such reports is specified. For how many years would the Council like to receive such reports?

Sincerely,

Robert E. Carberry

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
How long in the future would the proposed GSRP 345-kV loop be adequate to satisfy area requirements before further expansion is necessary?

Response:
The GSRP is expected to satisfy transmission reliability requirements in the Springfield study area (which includes north-central Connecticut) for at least 20 years without further expansion of the 345-kV system, assuming there are no significant changes in projected future load growth or generation location and availability. Another 345-kV transmission system need near to the Springfield area, the Central Connecticut Reliability Project, was identified as part of NEEWS, and there may be a future need to convert the proposed Manchester to Meekville Junction line segment to 345-kV operation. Also, 115-kV transmission system upgrades are likely to be needed in the next 20 years in the Hartford and Manchester areas.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
In determining need for the proposed project, were the NRG generating plant in Meriden and the GE Financial generating plant in Oxford assumed to be in service? If not, how would need change if those two plants were in service?

Response:
No, the NRG generating plant in Meriden and the GE Financial generating plant in Oxford were not assumed to be in service in the "Need" analysis submitted to Connecticut Siting Council in CL&P's Application. However, CL&P recently undertook a limited analysis in which each generating plant was assumed to be in service. The study results indicate that even under the most optimistic generator dispatch scenario, neither operation of the Meriden generating plant nor the Oxford generating plant resolved the transmission reliability problems in the greater Springfield area, including north-central Connecticut. Further studies, in which both generating plants are assumed to be in service are currently being performed. CL&P will supplement this response in the near future when the studies are completed and the results analyzed.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Do any wireless telecommunications carrier antennas exist along the ROWs that would be impacted by the proposed GSRP or MMP? If so, identify existing locations?

Response:
Yes, there is one wireless communication antenna installation on structure 20003 along the Manchester - Meekville Junction transmission corridor. This antenna can remain on this structure, and it will not be affected by the proposed construction. There are no wireless telecommunication antenna collocations on the North Bloomfield - Agawam corridor, and no installations on the Connecticut portion of the Southern Route alternative.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Has CL&P consulted with the Connecticut Department of Transportation regarding either the use of state roads for potential underground portions of the proposed route or crossing state roads with overhead lines? Provide details of such consultations.

Response:
Yes, CL&P consulted with the Connecticut Department of Transportation ("CDOT") regarding the Greater Springfield Reliability project on February 9, 2009. During this consultation, CDOT acknowledged prior familiarity with the GSRP and the underground transmission route variations. CDOT stated that if underground transmission were ordered in non-limited access state roadways, it would expect to enter into an encroachment agreement similar to those executed for the southwest Connecticut projects.

CL&P has a meeting with CDOT scheduled for February 19, 2009 to discuss the Connecticut portions of all of the NEEWS program of projects, including GSRP. The agenda for this meeting will include a discussion of underground transmission within state roadways and overhead transmission crossings of state roadways.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Provide a proposed schedule and manner of overhead transmission line ROW maintenance following installation of the proposed projects.

Response:
Following installation of the proposed projects, the GSRP and MMP right-of-ways will be monitored for re-growth and vegetation conditions and then scheduled for maintenance, usually within one or two years following the completion of each project. Once this maintenance is performed, future maintenance will be scheduled and managed in accordance with the Northeast Utilities Specification for Rights-of-Way Vegetation Management, copy attached. Currently, vegetation management occurs on a 4-year cycle.

Northeast Utilities System

NORTHEAST UTILITIES
SPECIFICATION FOR RIGHTS-OF-WAY VEGETATION MANAGEMENT

SECTION III
TECHNICAL REQUIREMENTS
2009

I. Scope

This specification covers the selective vegetation control of targeted undesirable tree, brush and vine species on Northeast Utilities transmission and distribution rights-of-way. Management of undesirable vegetation will be performed through the integrated use of manual, mechanical, chemical or other means as may be available to eliminate identified target species and remove potentially conflicting trees or tree parts from contact with the overhead conductors and/or electric facilities.

II. Objective

The primary purpose of rights-of-way vegetation control is to provide a clear and accessible area for the operation, review and maintenance of electric facilities located on the right-of-way. Reliability will be preserved through the removal of all potentially interfering tree, shrub and vine species that may, through normal growth, contact the overhead electric conductors or impede physical or visual access along the right-of-way. Vegetation species such as grasses, forbs, ferns and low growing shrubs are considered desirable and shall be preserved and encouraged to grow.

III. General

A. Maintenance Zones

The type of maintenance will be dictated by voltage of the conductors and the average width of the right-of-way on each project. There are two types of maintenance, a two zone system for higher voltage classes and/or wider rights-of-way and a one-zone system for lower voltages and/or narrow rights-of-way. The voltage class will be defaulted to the highest voltage on the right-of-way if the right-of-way is shared by more than one circuit or line.

The two maintenance systems are as follows:

Two Zone System: for rights-of-way widths greater than 100 feet.
One Zone System: for rights-of-way 100 feet or less in width

1. Two-Zone Maintenance

Management of vegetation within right-of-way boundaries shall be performed in accordance with the two-zone maintenance concept for transmission voltage lines and rights-of-way in excess of 100 feet in width. A wire or conductor zone and a border or side zone shall be developed and maintained in accordance with these specifications.

Wire Zone: The wire zone shall include the area directly beneath the overhead conductors extending outward a distance of 15 feet from the outermost conductor(s).

Side Zone: The side zones shall include all areas from the 15-foot limit of the outermost conductor(s) to the edge of the right-of-way border or maintained area.

2. One-Zone Maintenance

Management of vegetation within right-of-way boundaries shall be performed for right-of-way widths of 100 feet and less. The entire width of the right-of-way is maintained as a Wire Zone in accordance with the management requirements listed under Section B.1..

B. General Areas

General areas will include all rights-of-way where the company owns the land encompassed by the rights-of-way in fee, where easement rights do not restrict the preferred maintenance method(s), or where physical features do not require a maintenance practice different than the preferred method(s).

1. Wire Zones: Normally, all tree species and selected undesirable shrub species (state-listed invasive shrub species) regardless of height at the time of maintenance will be controlled. Also, desirable shrub species that are greater than 8 feet in height at the time of maintenance may be controlled depending on location and physical conditions within the right-of-way or position relative to facilities (ie. terrain or large clearances due to heights of the overhead conductors). Selected invasive species as listed below will be eliminated on all areas of the right-of-way regardless of height. All hardwood tree species will be treated standing or cut and treated if stems exceed 12 feet in height. All conifers less than 4 feet in height may be treated standing or cut, and all conifers taller than 4 feet in height shall be cut and diced. Cedar trees in excess of 8 feet generally will not be managed under this maintenance specification and the proper course of action for any cedar tree work will be noted in the Special Conditions (Section II).
(See Appendix 1 for a partial listing of desirable shrubs)

2. Side Zones: Normally all tree species (except cedar trees) and listed invasive plant species will be controlled. All other shrub species regardless of height may remain where practical. (See Appendix 1 for a listing of the desirable species for side zones)

Requirements for control may be modified to take into consideration topographical features such as valleys, gorges and steep slopes that result in large clearances from the overhead conductors, or where certain target species may be retained to provide barriers to the right-of-way or where visual aspects may limit the use of herbicides. These locations and modifications will be listed in Section II.

3. Invasive Species Control: Invasive species to be controlled within the entire maintained areas include the following species:

Multiflora Rose	*Rosa multiflora*
Common Buckthorn	*Rhamnus cathartica*
Glossy Buckthorn	*Frangula alnus*
Autumn Olive	*Elaeagnus umbellata*
Russian Olive	***Elaeagnus augustifolia***
Japanese Barberry	***Berberis thunbergii***
Common Barberry	***Berberis vulgaris***

C. Sensitive Areas

Sensitive areas are those areas where the preferred maintenance method used for general areas cannot be used and must be modified or altered to obtain the desired control. Sensitive areas shall include but are not limited to:

- Residential areas (yards)
- Public water supply watersheds

- Public or private well locations
- Stream or river crossings
- Wetlands (wet)
- No chemical areas

Additional information provided in the contracts for each listed project will contain information where environmentally sensitive areas or areas were maintenance requirements must be modified due to location or property owner concerns will be listed on the structure sheets. All contractors are required to adhere to any restrictions or requirements that have been identified on the structure sheets for each project.

All target species identified in Section III. B. shall be controlled in these areas when possible. Herbicide applications may be performed unless the easement specifically restricts the use of chemicals. In areas where herbicide use is restricted or where herbicide use should be excluded, all target vegetation shall be cut and diced or chipped.

Within the sensitive areas, herbicide applications shall be restricted from the following areas:

CONNECTICUT
- Within 100 feet of a public water supply well
- Within 50 feet of a private well
- Within wet wetland areas (10 feet from standing water)
- Within 10 feet of a river, stream or other body of water

MASSACHUSETTS
- Within any identified Zone I public water source
- Within 400 feet of a public water supply well
- Within 100 feet of a Class A public surface water supply
- Within 100 feet of a tributary that runs within 400 feet of any Class A public surface water supply
- Within 10 feet of a tributary that exists beyond 400 feet of any Class A public surface water supply
- Within 100 feet for 400 hundred feet upstream of both sides of a river of a Class B public surface water supply intake
- Within 50 feet of a private well
- Within wet wetland areas (10 feet from standing water)
- Within 10 feet of a river, stream or other body of water
- Within 10 feet of any Certified Vernal Pool

NEW HAMPSHIRE
- Within public water supply watersheds without a state permit
- Within 50 feet of any public well
- Within 400 feet of a gravel packed well or 250 feet of a drilled well used for public water supply without a state permit
- Within 50 feet of a private well
- Within wet wetland areas (25 feet from standing water)
- Within 25 feet of a river, stream or other body of water

D. Access and Structures

Existing access roads along rights-of-way including existing access to structures shall be cleared of all woody vegetation and where practical and herbicide treated to a minimum width of 14 feet.

Structures shall be cleared of all woody vegetation (including vines) and where practical, herbicide treated to a radius of 15 feet around each structure.

Guys shall be cleared of all woody vegetation (including vines) and where practical, herbicide treated to a radius of 5 feet at the anchor location. All vegetation in contact with the guy wire shall be herbicide treated or cut and removed. **Vines in contact with structures or guy wires shall be cleared manually if the vines have grown to at least 25% of the height of the structure or guy wire and all cut stumps of vines treated with an approved cut-surface herbicide mixture. Vines less than 25% may be controlled using foliar applications if herbicide use is not restricted.**

All stumps resulting from the cutting or mowing of standing vegetation shall be as low as practical around structures, guys and access areas and shall not exceed 3 inches in height.

IV. Maintenance Methods

A. Herbicide Applications

All target vegetation may be chemically treated using one or more of the following methods:

- High Volume Foliar (Must be specifically listed in bid proposal and locations noted)
- Low Volume Foliar
- Ultra-low Volume Foliar
- Low Volume Basal
- Cut & Stump Treatments

Applications directly to soil or the ground as well as non-selective broadcast applications or high volume basal applications shall not be used on the Northeast Utilities system.

The following herbicide materials are approved for use on the Northeast Utilities system:

FOLIAR APPLICATIONS

• ESCORT*	High and low volume
• ARSENAL*	High and low volume
• VANQUISH	High and low volume
• ACCORD*	High and low volume
• KRENITE S*	High and low volume
• MILESTONE VM	High and low volume

BASAL APPLICATIONS

• GARLON 4	Low volume basal
• STALKER	Low volume basal

CUT SURFACE APPLICATIONS

• ACCORD*	(50/50 with water)
• STALKER	(with water - use labeled rates)
• ARSENAL*	(with water - use labeled rates)
• KRENITE S*	(50/50 with water)
• PATHWAY	
• GARLON 4#	(in basal oil - use labeled rates)
• PATHFINDER	

* Sensitive area approved herbicide for Massachusetts
# Sensitive area approved herbicide for Massachusetts - application by sponge only

Foliar applications may employ a mixture containing two or more of the approved materials listed above. Basal applications shall employ a diluent labeled and approved for basal oil applications.

B. Manual Cutting

Manual cutting shall be employed when target stems exceed 12 feet in height or in sensitive areas where foliar or basal applications are not acceptable. All stumps resulting form the cutting of hardwood trees and shrub species including pitch pine shall be treated with an approved cut-surface herbicide where allowed. All stumps shall be less than 3 inches in height and all slash shall be wind-rowed along the right-of-way edge or diced in general areas. In sensitive areas, slash shall be diced, chipped or removed from the right-of-way depending on the physical locations.

Cut cherry trees in active pasture areas will be removed from the pasture immediately after cutting during the growing season and diced in an appropriate area of the right-of-way outside of the active pastures. NOTE: wilted cherry leaves are highly toxic to most livestock.

Diced or piled slash shall not be left within access areas or within the cleared areas around structures and guys. Slash and debris shall also be kept out of water courses, stream and river banks and bodies of water including standing water in wetland areas.

Trees or tree branches that are in close proximity to the conductors or are visibly damaged, dead or diseased and pose a threat to the conductors will be identified as "danger trees" and will be cut and/or removed when required by the Owner's Representative.

C. Mechanical Mowing

Mowing may be performed when necessary to reduce the heights of large dense stands of undesirable vegetation in preparation for an herbicide application or where herbicide applications are restricted. Mowing shall be selective in that large patches of low-growing desirable vegetation shall be retained where practical. Mowing shall be limited to wire zone areas, for access roads along the rights-of-way, or around structures and guys. However, limited mowing of side zones may be allowed to reduce dense stands of target vegetation. Mowing may only be performed after the review and approval of the Owner's Representative. Except in no-chemical areas, mowing shall be followed up with an herbicide application to the target stumps or resprouts.

The resulting stubble from mowing operations shall be as low as practical depending on the densities and terrain.

Prior to mowing any areas patrols by foot must be made in advance of all areas to be mowed and the following tasks performed in advance of mowing:

- Identification of all obstructions or fixtures that could impact the mowing equipment (fences, rocks, boulders, ledges, standing water, wetlands or unstable ground)
- Manually cut and clear to a distance of at least 5 feet around all guy wires, anchor points and structures (poles or towers) or other potential obstructions
- Cleary flag with brightly colored tape, all guy wires or other obstructions that could be damaged by the mowing equipment

The location and type of all potential obstructions or structures shall be communicated to the operator of the mowing equipment before any mechanical mowing is to be performed in any area.

Commencing January 1, 2008 the use of rear-mounted mowing units that requires the operator to physically turn to observe and manipulate the mowing unit will not be allowed on the Northeast Utilities system. All mowing units must be equipped with front mounted mowing heads or decks.

For Connecticut and Massachusetts projects, mowing shall be restricted to the dormant season only from September 1st to March 31st.

D. Tree Trimming

When required, trimming alongside the conductors shall be performed so that all branches to be removed are cut back to the edge of the right-of-way or main trunk depending on easement restrictions and property owner consent to trim beyond the right-of-way edge. All trimming shall be performed to allow for the following clearances between the vegetation and the conductors:

Voltage Class	Minimum Under Clearance	Minimum Side-Clearance	Minimum Side-Clearance (> 750 foot spans)
<230kV	11 feet	20 feet	30 feet
230kV	15 feet	30 feet	36 feet
345kV	15 feet	30 feet	43 feet

All trimming shall be performed in accordance with proper arboricultural practices (i.e. ANSI A-300). If trimming alone cannot provide the minimum clearances listed – efforts shall be made to remove the offending trees or vegetation.

E. Tree Removal

Removal of trees within or along the right-of-way shall be performed in such a manner as to eliminate any potential for the felled tree to come within the minimum air-gap distances of the transmission lines. Minimum air gap distances (phase to ground) for the four transmission voltages on the NU system are as follows:

Voltage	Air Gap Distance
69kV	2.46 feet
115kV	2.46 feet
230kV	5.15 feet
345kV	9.45 feet

All trees that if felled would come close enough to the conductors than the minimum air-gap distances listed above shall be topped to remove that portion of the tree that could come within the minimum air gap distances unless the tree can be secured by ropes and felling directed to avoid coming closer than the minimum air gap distances in a safe manner.

In areas where there currently exists large numbers of incompatible tree species within the wire zones (i.e. cedars) removal will be performed on a staggered basis and the amount or number of trees to be removed will focus on those areas and tree where there exists the greatest potential risk of contact with the overhead facilities. Where possible and where reliability will not be compromised, the objective is to remove no more than 50% of the population of trees in any given year. The amount of trees to be removed may be greater in those areas where there exists a greater degree of non-compliant vegetation that constitutes a risk of contact with the energized facilities.

V. Skilled Contractor Personnel

The contractor shall employ supervisory and field personnel who are thoroughly trained in selective woody vegetation control techniques including all methods and materials to perform the work as specified. **The ability to recognize and identify desirable and undesirable species is mandatory for all vegetation control personnel**. All persons applying herbicides shall possess a valid applicator's license or supervisory certification for the state in which herbicides are being applied. All contract employees shall perform work in accordance with regulations listed under OSHA 29 CFR 1910.269. Trimming shall be performed by personnel certified to perform this work and in accordance with ANSI Z-133.1.1994. Trimming shall comply with standards listed under ANSI A-300.

Contractors are required to certify that all personnel performing work in close proximity to transmission facilities are qualified to perform this work and ensure that all employees are trained and competent in the safe work practices around energized facilities.

The contractor is required to know and understand all laws and regulations pertaining to the control of vegetation on right-of-ways, the use of herbicides and any restrictions to herbicide use for each state in which they are performing right-of-way vegetation control.

VI. Property Owner Notification

The contractor shall inform property owners and right-of-way abutters with homes or buildings located within 200 feet of the right-of-way or with maintained property to the edge of the right-of-way or within the right-of-way area, of the proposed work at least 7 days prior to the commencement of work. Personal contact or notification by a door hanger is required. The contractor shall also keep a listing of the contacts made and provide this list to the Owner's Representative at the completion of the project, or upon request by the Owner's Representative during the course of the project.

The Notification person(s) shall be knowledgeable about all aspects of the work being performed including the timing of the work, the methods that will be employed and the materials that will be used on each particular property. Knowledge of the herbicides being used is required and the notification person(s) must be able to communicate the information specific to the materials to be used and to answer questions about environmental fate and toxicity of the products.

Notification may be made by personal visit, phone contact or use of a Company-approved door hanger. When door hangers are used, the Contractor will provide the contact name and a phone number for both the contractor and the Owner's Representative handling the project.

The Owner's Representative shall serve as the primary contact for any property owner questions regarding the work to be performed or any issues regarding compatible and non-compatible vegetation within the right-of-way. All notification material and methods shall include the name of the Owner's Representative to all property owners notified of impending work.

The contractor shall note the name of the person contacted when notification is made in-person or through a phone contact on the approved NU notification log. All notification logs must be presented to the Owner's Representative at the completion of the notification process on each project or upon request if the notifications are underway.

The contractor shall use a toll-free number on all door hangers for property-owner inquiries.

NOTE: For all touch-up applications, property owner notification must again be performed in the year the application is to be made in advance (at least 7 days) of the work.

VII. Environmental

All work performed under the rights-of-way brush control program will comply with all pertinent state statutes and federal regulations regarding herbicide use and applications. It is the Company's position that strict compliance with the principles of selective vegetation control and the identification and preservation of listed desirable species will be required. To be environmentally compliant, all crews shall be trained in the proper methods and use of herbicide application techniques being used. Low-volume and low pressure application methods are preferred. Proposals to employ high-volume/high pressure applications must be made at the time the bid proposal is submitted and will only be allowed after review and approval of the Owner's Representative.

All crew personnel shall be trained and knowledgeable in the proper actions for oil and pesticide spill containment and cleanup. All vehicles shall possess containment and cleanup equipment and materials at all times while performing this contract. All spills will be reported to the Owner's Representative in accordance with the procedure listed under Section VIII, E. Problems and Complaints (below) and all state and federal agencies shall be notified if any spill meets the requirements for reporting for these agencies.

Contractor personnel must ensure that they follow all regulations as they relate to work within or travel through wetland areas. Adverse impacts to wetland areas shall be avoided at all times and crews shall only employ manual control methods within designated wetlands and wet areas. Mechanized vehicles shall not be used in wetland or wet areas and care shall be taken to avoid travel through wetlands if conditions at the time of maintenance result in rutting or soil damage in these areas. All damaged areas shall be repaired immediately and the NU Representative shall be notified of any inadvertent entry and damage to wetlands.

Failure to adhere to the requirements of this section may result in contract suspension or cancellation.

VIII. Company Oversight

All projects will be managed by an Owner's Representative who will have the responsibility to oversee the daily work and conformance to the contract requirements and maintenance specifications.

The Owner's Representative shall perform routine inspections of all crews during the performance of the work. These inspections will include weekly crew evaluations and specifically review work for compliance with all

contract requirements and specifications. Reviews will also focus on environmental issues and the performance of work in and around designated sensitive areas. Problems or deficiencies shall be addressed immediately with contractor crews, contractor supervision and Transmission Vegetation Management supervision. Problems will be documented and will require documentation by the contractor on problem resolution and corrective actions.

IX. Miscellaneous

A. Changes to Contract Requirements

In the event changes are requested in any portion of the contract such as delaying cutting to a period outside of the normal prep-cutting period or to request mowing in place of manual prep-cutting, the contractor must first request such modifications in writing to the Supervisor – Transmission Vegetation Management. All requests for modifications must be made well in advance of the need for the proposed modification. Any requested modifications must state a reason as to why the revision is necessary and is in the best interest of the contractor's and NU's needs. Modifications can only be implemented upon a written approval from the Supervisor – Transmission Vegetation Management.

B. Preparatory Cutting and Patrols

In order to ensure that there are no potential tree/conductor problems during the course of the maintenance period and prior to the completion of all work, it shall be necessary for the contractor to perform a complete patrol of all areas to review and identify any potential tree problems. **Contractors shall use the form provided by NU for listing problem areas to be reviewed by the Owner's Representatives (Appendix 2).**

The patrol and danger tree identification shall be completed before April 1st of each year. Also, all cutting - selective cutting areas, structure and access clearing and the cutting of vegetation in excess of 12 feet in height shall be performed and completed before June 1st of each year.

C. Access for Rights-of-Ways

The Company will provide information on the appropriate access points to rights-of-way where they exist. The Company will supply keys for all Company locked gates that will be returned to the Owner's Representative upon completion of the contract. The contractor shall be responsible for obtaining landowner permission to use any other access points not designated by the company. Access along rights-of-way shall not cause harm or damage to any private or company property or fixtures.

D. In-Lieu-Of Agreements

At easement locations where the property owner has refused the use of herbicides or the removal of potentially interfering target species, the Owner's Representative will obtain an in-lieu-of agreement for the property owner to maintain the right-of-way area in a manner that is approved and accepted by the Company. If a property owner refuses to allow the performance of the work as specified, the contractor shall inform the Owner's Representative immediately for resolution.

D. Work Periods

Work shall normally be performed during the company's normal work period - weekdays 7:30 am to 4:30 pm unless prior approval has been obtained from the Owner's Representative. There will be no work performed on weekends or company observed holidays unless prior approval is obtained from the Owner's Representative.

E. Problems and Complaints

The contractor shall immediately inform the Owner's Representative of any problems or complaints received from property-owner's, abutters or town or state officials that develop during the course of the work.

The contractor shall also immediately notify the Owner's Representative of any incidents involving:

- Electric interruptions
- Electrical contacts by employees
- Employee accidents or injuries (non-electrical)
- Damage to NU equipment or property
- Damage to private property
- Herbicide or oil spills

Completion of the Contractor Incident Report Form (Appendix 5) is required on all recordable incidents listed above.

The Contractor is responsible for any repairs to Company or private property damaged during the course of the work.

In accordance with TD 916 Communications Following a Significant Safety Incident, the Owner's Representative shall document the incident in the contractor's work file.

F. Weekly Reports

Northeast Utilities Weekly Transmission Brush Control or Tree Work Report (form OP3368 - Appendix 3 shall be completed daily and submitted to the Owner's Representative weekly. The report shall be complete and provide all information relative to the project including the line or project numbers(s) all labor and equipment hours, amounts of herbicide mixtures and materials used, amount of area treated, location of areas treated (by structure number, road crossing or substation) and the number of trees removed or number of trees trimmed within the right-of-way or along the right-of-way edge. NOTE: only one form required per right-of-way project.

Contractor Supervision shall sign and date all completed time sheets and submit to the Owner's Representative by Tuesday of the week following the ending date on the time sheet. The Owner's Representative shall review and approve time sheet information and sign and date the time sheet verifying work is completed as required and all time sheet information is accurate.

G. Pesticide Application Records

Contractors are required to adhere to all state pesticide laws regarding the completion and retention of daily Pesticide application records for all herbicide applications. These records may be requested by NU if and when issues regarding applications are required.

H. Project Summary Reports

The contractor shall submit summary information on the Northeast Utilities System Rights-of-Way Herbicide Application Summary Report form (Appendix 4) for each project worked that year. This includes the general maintenance year as well as the touch-up performed in subsequent years.

Information required on this form includes the total acreage treated using the various application methods and materials as well as the total volumes of herbicide mixtures applied, the total amounts of each individual herbicide product applied (along with corresponding acreage) and the total amounts of basal oil diluents used. The summary report shall also list the total man hours, man-days and calendar days required to complete the project. A man-day is considered an 8-hour day.

All Project Summary Reports are due before December 31st of the year in which the project was performed.

APPENDIX 1
WOODY SPECIES ALLOWED TO REMAIN IN CONDUCTOR ZONE: (PARTIAL LIST)

COMMON NAME	GENUS/SPECIES
Arrowwood Viburnum	*Viburnum dentatum*
Bayberry	*Myrica pennsylvanica*
Blueberry - Highbush *	*Vaccinium corymbosum*
Blueberry - Lowbush	*Vaccinium angustifolium & V. vacillans*
Brambles	*Rubus spp.*
Buttonbush	*Cephalanthus occidentalis*
Dogwood - Gray	*Cornus racemosa*
Dogwood - Redosier	*Cornus stolonifera*
Dogwood - Silky	*Cornus amomum*
Elderberry	*Sambucus spp.*
Hazelnut	*Corylus americana & C. cornuta*
Honeysuckle - Bush	*Diervilla lonicera*
Honeysuckle - Fly	*Lonicera canadensis*
Honeysuckle - Tartarian	*Lonicera tatarica*
Huckleberry	*Gaylussacia spp.*
Maple-leaf Viburnum	*Viburnum acerifolium*
Meadowsweet - Broad-leaved	*Spirea latifolia*
Meadowsweet - Narrow-leaved	*Spirea alba*
Mountain Laurel *	*Kalmia spp.*
Oblong Fruited Juneberry	*Amelanchier bartramiana*
Oldfield Common Juniper	*Juniperus depressa*
Pasture Juniper	*Juniperis communis*
Running Shadbush	*Amelanchier stolonifera*
Sheeplaurel	*Kalamia augustifolia*
Spicebush	*Lindera benzoin*
Steeplebush	*Spirea tomentosa*
Sweetfern	*Comptonia peregrina*
Sweetpepperbush	*Clethra alnifolia*
Winterberry	*Ilex verticillata*
Witch Hobble	*Vburnum alnifolium*
Witherod	*Viburnum cassinoides*

* Normally will not be treated or removed regardless of height

SPECIES ALLOWED TO REMAIN IN THE SIDE ZONES: (PARTIAL LIST)

All species listed above including:

Alder	*Alnus spp.*
Hornbeam	*Carpinus betulus*
Dogwood - Alternate-leaved	*Cornus alternifolia*
Dogwood - Flowering	*Cornus florida*
Hornbeam	*Carpinus caroliniana*
Sumac - Shining	*Rhus copillina*
Sumac - Smooth	*Rhus glabra*
Sumac - Staghorn	*Rhus typhina*
Willows (except tree species)	*Salix spp.*
Witch-Hazel	*Hamamelis virginiana*

APPENDIX 2

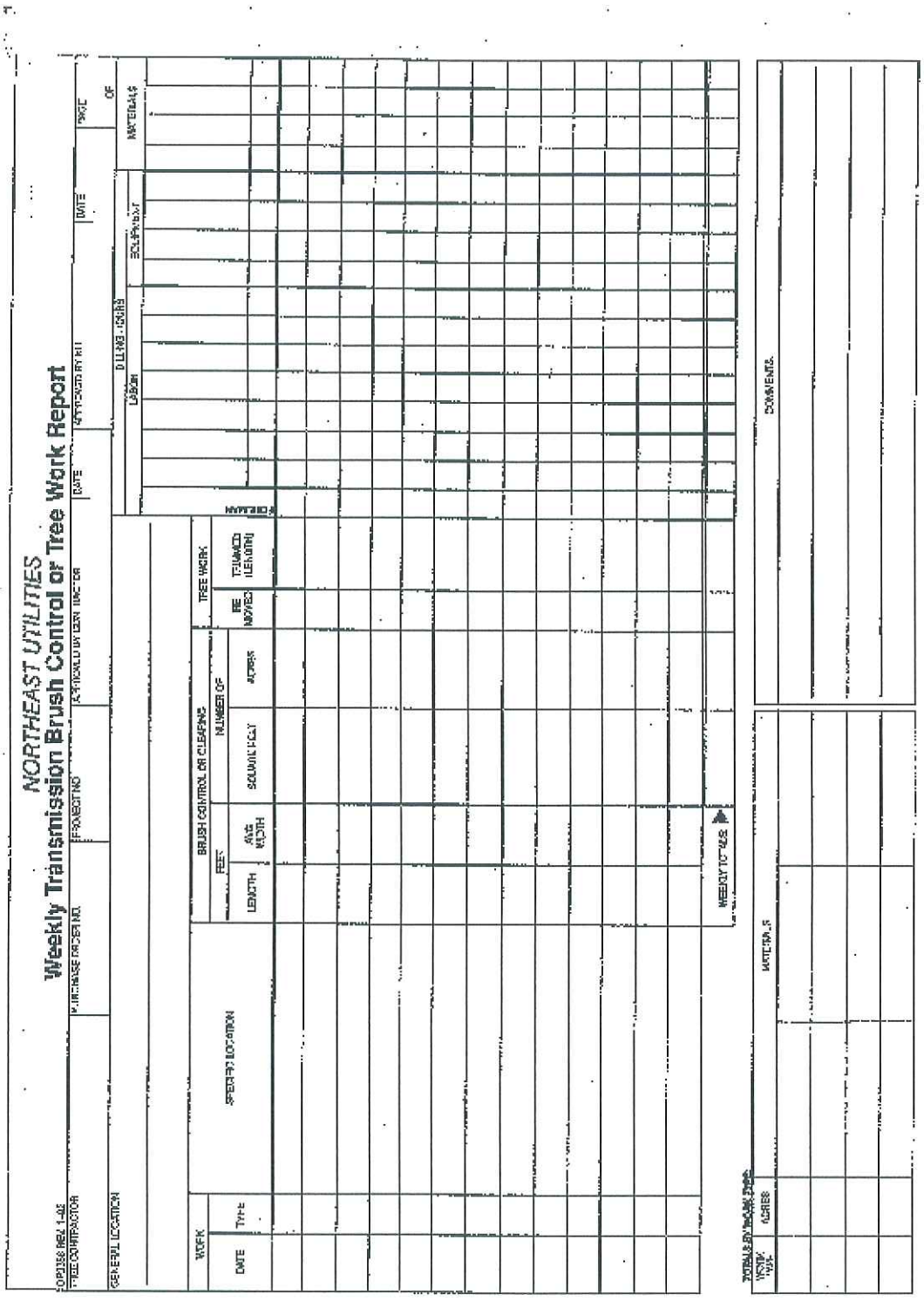
Northeast Utilities Transmission Rights-of-Way Danger Tree Report

Project Number: _____ Contractor: _____ Week Ending _____

Line Number	Structure Number	Location*	Description of Problem

* Location shall note whether the problem is within the right-of-way or outside of or along the side of the right-of-way edge

APPENDIX 3


NORTHEAST UTILITIES
Weekly Transmission Brush Control or Tree Work Report
DATE
PAGE
OF
LABOR
MATERIALS
COMMENTS

APPENDIX 4

Northeast Utilities System
Rights-of-Way Herbicide Application Summary Report

Year: _____ **Project No:** _____

Project Description: _____

_____

Contractor: _____ **Total Project Acres:** _____

Application Type:	Acres Treated	Mix Quantity	Herbicide	Herbicide Amount	Total Man-Days
Open Acres					

Notes:

APPENDIX 5

NORTHEAST UTILITIES
TRANSMISSION LINE CLEARANCE
INCIDENT REPORT

District:_____ Date of Incident:_____

Time of Incident:_____ Contractor:_____

Foreman:_____ Person Involved in Incident:_____

Town:_____

Street:_____ Pole No.:_____

Nature of Incident:

___ Electrical Contact
___ Employee Injury (non electrical)
___ Vehicle Accident
___ Property Damage
___ Electrical Interruption
___ OIL Spill
___ Pesticide Spill

Interruption No.:_____ Circuit:_____ Voltage:_____

No. Customers Interrupted:_____ Contractor Charges:_____

Incident Description:

_____

_____

_____

_____

_____

Follow Up Action Taken With Contractor:

_____

_____

_____

_____

_____

Reviewed By: Arborist:_____ Date:_____

Contractor:_____ Date:_____

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Would erosion and sediment controls be removed from construction areas within 30 days of final site stabilization as recommended in "Best Development Practices: Conserving Pool-Breeding amphibians in residential and commercial developments in the northeastern United States"?

Response:
Temporary erosion and sedimentation controls will be removed from construction sites within 30 days of final site stabilization. Please refer to our answer to Data Request CSC-01, Q-CSC-007 for information regarding permanent erosion and sedimentation controls.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Would CL&P comply with recommendations from the CT DEP regarding construction schedules to avoid potential impact to wildlife? How would construction schedules be impacted?

Response:
Regarding the CT DEP's construction schedule recommendations in a September 26, 2008 letter to CL&P (see page 2 of 2 of the response to Data Request CSC-01, Q-CSC-014), CL&P cannot limit its Project work schedule to seasons when there is no risk to the development of rare and endangered species without compromising transmission system reliability and the timely completion of the Project;. However, CL&P will comply with all permitting requirements and will work closely with the CT DEP and federal agencies on this project (as with recent projects) to ensure least impact. CL&P currently plans to provide species awareness and identification training for construction contractors, to install barrier fencing as-needed, and to conduct pre-construction sweeps at locations listed to have rare and endangered species.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
How would the use of unauthorized all-terrain vehicles be minimized along the route during and after construction?

Response:
CL&P notifies local and state law enforcement authorities that it does not allow unauthorized use of ATVs on its right-of-ways. On fee-owned transmission right-of-way, CL&P will also restrict all-terrain vehicle access by the use of gates and barricades coupled with natural barriers, such as non-negotiable terrain changes and dense vegetation. On non-fee-owned transmission right-of-way, CL&P will work with the property owners when requested to install appropriate barricades to restrict all-terrain vehicle access to the right-of-way. The most common barricades are wood poles, concrete blocks and fences. During construction and upon request, CL&P also provides signs for landowners to install on their properties.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
Would the use of herbicides for maintenance of vegetation be restricted in or near wetlands or waterbodies?

Response:
Herbicides will be used in accordance with current federal regulations, State of Connecticut pesticide statutes, and product labels. State regulations allow for the use of herbicides up to the edge of waterbodies, and in wetlands for herbicides specifically labeled for wetland applications. Most, but not all, of the herbicides listed in Northeast Utilities Specification for Rights-of-Way Vegetation Management are labeled for wetland applications. Applications of herbicides on CL&P right-of-ways will be made by certified/licensed applicators.

Witness: CL&P Panel
Request from: Connecticut Siting Council

Question:
What measures would be employed to control any undesirable invasive plants which may become established along areas cleared during construction?

Response:
Certain invasive woody plant species are expected to re-sprout following initial clearing efforts. A selected list of these plant species will be controlled as part of CL&P's normal right-of-way maintenance activities via manual cutting and/or selective application of herbicides.