STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

The United Illuminating Company application for a Certificate of Environmental Compatibility and Public Need for the Milvon to West River Railroad Transmission Line 115-kV Rebuild Project that consists of the relocation and rebuild of its existing 115-kV electric transmission lines from the railroad catenary structures to new steel monopole structures and related modifications to facilitate interconnection of the rebuilt 115-kV electric transmission lines at UI's existing Milvon, Woodmont, Allings Crossing, Elmwest and West River substations along approximately 9.5 miles of the Connecticut Department of Transportation's Metro-North Railroad corridor traversing the municipalities of Milford, Orange, West Haven and New Haven, Connecticut	Docket No. 508 April 21, 2022

PRE-HEARING SUBMISSION OF THE UNITED ILLUMINATING COMPANY

The United Illuminating Company ("UI") hereby submits its response to the March 30, 2022 memorandum issued by the Connecticut Siting Council (the "Council") in preparation for the April 28, 2022 hearing before the Council on UI's above-captioned Application (the "Project"):

I. Witnesses

UI expects the following individuals will appear before the Council as available witnesses:

1) Correne Auer, Environmental Permitting & Compliance Specialist, 100 Marsh Hill Road, Orange, CT 06477. Ms. Auer will provide information on the environmental review, effects, proposed mitigation measures and environmental permitting requirements.

2) Todd Berman, Manager, Environmental Programs & Projects, UI, 100 Marsh Hill Road, Orange, CT 06477. Mr. Berman will provide information on the environmental review, effects, proposed mitigation measures and environmental permitting requirements.

3) Aziz Chouhdery, P.E., Lead Engineer, Project Unit HV Lines, UI, 100 Marsh Hill Road, Orange, CT 06477. Mr. Chouhdery will provide information

concerning the transmission aspects of the Project as well as information on the design of the project.

4) Dr. Benjamin Cotts, Ph.D., P.E., Principal Engineer, Exponent, 17000 Science Drive, Suite 200, Bowie, MD 20715. Dr. Cotts will provide information concerning electric and magnetic fields associated with the Project. Dr. Cotts' curriculum vitae is attached as Attachment A.

5) Shawn Crosbie, Senior Project Manager, UI, 100 Marsh Hill Road, Orange, CT 06477. Mr. Crosbie will provide information on the Project and its design as well as technical information concerning the Project's safety and reliability, the site selection process, and the environmental effects and proposed mitigation measure, and other matters as outlined in UI's Application to the Council.

6) Mike Libertine, LEP, Vice President, All-Points Technology Corporation, P.C., 567 Vauxhall Street Extension, Suite 311, Waterford, CT 06385. Mr. Libertine will provide information related to the visibility of the proposed project. Mr. Libertine's résumé is attached as Attachment B.

7) Samantha Marone, Manager, Outreach and Engagement, Planning and Coordinatoin, UI, 100 Marsh Hill Road, Orange, CT 06477. Ms. Marone will provide information on municipal and customer outreach implemented for the Project.

II. Pre-Filed Testimony

UI is filing direct testimony to the Council concerning the virtual tour of the Project route.

III. Documents to be Administratively Noticed

At this time, UI does not ask that the Council take administrative notice of any documents other than those contained in the Council's Administrative Notice List.

IV. Exhibits

UI is submitting an affidavit of Shawn Crosbie regarding sign posting.

V. Publlic Comment Session

The Company has designated Shawn Crosbie as the presenter during the April 28, 2022 public comment session. Mr. Crosbie will provide a brief presentation describing the proposed Project using Figure 1-1 on page 1-2 of the Company's application. See Attachment C.

Respectfully submitted,

THE UNITED ILLUMINATING COMPANY

By: _____

Bruce L. McDermott
Attorney
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CERTIFICATION

This is to certify that on this 21st day of April, 2022, a copy of the foregoing has been electronically delivered to all other known parties and intervenors.

Bruce L. McDermott

ATTACHMENT A

Exponent®
Engineering & Scientific Consulting

Benjamin R.T. Cotts, Ph.D., P.E.

Senior Managing Engineer | Electrical Engineering & Computer Science
17000 Science Drive, Suite 200 | Bowie, MD 20715
(301) 291-2519 tel | bcotts@exponent.com

Professional Profile

Dr. Cotts is experienced in both applied and theoretical electromagnetics and plasma physics including modeling and measurement analyses of natural and anthropogenic electromagnetic fields such as space weather, and geomagnetic storms as well as in the initiation, field effects, and characteristics of lightning discharges. Dr. Cotts performs modeling and measurement studies of power system EMF, audible noise, and radio noise including evaluations of 500-kV AC and ±560 kV DC transmission lines. Dr. Cotts has further experience in modeling magnetic fields and induced electric fields for offshore wind farms including those from wind turbines, offshore substations and subsea AC and DC transmission lines and is an officer in the IEEE working group for Corona and Field Effects overseeing IEEE standards 644, 430, 656, 1542, 1227, 2746, 1829 and 1308.

Dr. Cotts also performs various types of electromagnetic field evaluations for devices and systems including smart meter mesh networks and government/military communications facilities as well as exposure, EMI or EMC assessments. These assessments are provided for clients such as federal and state agencies, utilities, hospitals, medical-device manufacturers, construction developers, the U.S. military. In addition, Dr. Cotts regularly receives requests to perform exposure assessments for patients with pacemakers, ICDs, and other implantable medical devices and to remediate EMI issues for medical devices and in health care settings.

Dr. Cotts has been a leading figure in coordinating scientific outreach to developing countries through the United Nations International Heliophysical Year (IHY) and International Space Weather Initiative (ISWI) programs and was a founding member of a NASA/UN-sponsored conference series organized and led multiple conferences on atmospheric and space science.

Dr. Cotts's has a decade of experience with the initiation, field effects, and propagation of lightning discharges; combining remote sensing measurements of ionospheric disturbances with numerical modeling of atmospheric, ionospheric, and magnetospheric interactions to determine the role of global lightning on the removal of radiation belt electrons. These radiation belt electrons are a critical factor in space weather for determining the effective lifetime of spacecraft with electronics that can be irreversibly damaged by radiation belt electrons.

Additionally, Dr. Cotts software engineering experience includes the use of Matlab, C, C++, and a variety of other scientific packages including Mathematica and COMSOL. He has experience with auditing software processes and algorithms used during his investigations related to control systems involved in failure events.

Academic Credentials & Professional Honors

Ph.D., Electrical Engineering, Stanford University, 2011

M.S., Electrical Engineering, Stanford University, 2004

B.S., Electrical Engineering, University of Portland, summa cum laude, 2002

Outstanding Student Paper Award, AGU Fall Meeting, San Francisco, California, 2004

Tau Beta Pi Engineering Honor Society

Delta Epsilon Sigma, National Scholastic Honor Society

Awarded “2017 IEEE Standards Medallion” For contributions to standards development in power and energy distribution.

Awarded the "2014 Fire Protection Research Foundation Medal" by the NFPA's Fire Protection Research Foundation for the 2013 research project ("Best Practices for Emergency Response to Incidents Involving Electric Vehicles Battery Hazards: A Report on Full-Scale Testing Results") that best exemplified the Foundation's fire safety mission at the National Fire Protection Association's Conference & Exposition, June 2014

Licenses and Certifications

Licensed Professional Electrical Engineer, California, #21277

Prior Experience

Post Doctoral Scholar, University of Colorado, Denver, 2011

International Science Outreach Manager, Stanford University, 2007-2011

Research Assistant, Stanford University, 2002-2011

Energy Research Fellow, Stanford Linear Accelerator Center, 2001

Professional Affiliations

Institute of Electrical and Electronics Engineers — IEEE

International Committee on Electromagnetic Safety — ICES

International Council on Large Electric Systems — CIGRÉ

Publications

Peer Reviewed Publications

Gołkowski M, Gross NC, Moore RC, Cotts BRT, Mitchell M. Observation of local and conjugate ionospheric perturbations from individual oceanic lightning flashes. Geophysical Research Letters 2014; 41:273-279. doi:10.1002/2013GL058861.

NaitAmor, S, Cohen MB, T. Cotts BR, Ghalila H, AlAbdoadaim MA, Graf K. Characteristics of long

recovery early VLF events observed by the North African AWESOME Network. Journal of Geophysical Research: Space Physics 2013; 10.1002/jgra.50448

Haldoupis, C, Cohen M, Arnone E, Cotts B, Dietrich S. The VLF fingerprint of elves: Step-like and long-recovery early VLF perturbations caused by powerful ±CG lightning EM pulses. Journal of Geophysical Research: Space Physics, 2013. doi: 10.1002/jgra.50489.

Haldoupis C, Cohen M, Cotts B, Arnone E, Inan U. Long-lasting D-region ionospheric modifications, caused by intense lightning in association with elve and sprite pairs. Geophysical Research Letters 2012; 39:L16801. doi:10.1029/2012GL052765.

Salut MM, Abdullah M, Graf KL, Cohen MB, Cotts BRT, Kumar S. Long recovery VLF perturbations associated with lightning discharges. Journal of Geophysical Research 2012; 117:A08311. doi:10.1029/2012JA017567.

Cotts BRT, Gołkowski M, Moore RC. Ionospheric effects of whistler waves from rocket-triggered lightning. Geophysical Research Letters 2011; 38:L24805. doi:10.1029/2011GL049869.

Cotts BRT, Inan US, Lehtinen NG. Longitudinal dependence of lightning-induced electron precipitation. Journal of Geophysical Research 2011; 116:A10206. doi:10.1029/2011JA016581.

Cotts BRT. Global quantification of lightning-induced electron precipitation using very low frequency remote sensing. Doctoral Dissertation, Stanford University, 2011.

Haldoupis C, Amvrosiadi N, Cotts BRT, Van der Velde O, Chanrion O, Neubert T. More evidence for a one-to-one correlation between Sprites and Early VLF perturbations. Journal of Geophysical Research 2010, 115:A07304. doi:10.1029/2009JA015165.

NaitAmor S, Al Abdoadaim MA, Cohen MB, Cotts BRT, Neubeurt T, Soula S, Chanrion O, Abdelatif T. VLF observations of ionospheric disturbances in association with TLEs from the Eurosprite-2007 Campaign, Journal of Geophysical Research 2010; 115:A00E47. doi:10.1029/2009JA015026.

Cotts BRT, Inan US. VLF observation of long ionospheric recovery events. Geophysical Research Letters 2007; 34:L14809. doi:10.1029/2007GL030094.

Reports

Snyder DB, Bailey WH, Palmquist K, Cotts BRT, Olsen KR. Evaluation of Potential EMF Effects on Fish Species of Commercial or Recreational Fishing Importance in Southern New England. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Headquarters, Sterling, VA. OCS Study BOEM 2019-049, August 2019.

Long RT, Blum AF, Bress TJ, Cotts, BRT. Best practices for emergency response to incidents involving electric vehicle battery hazards. Fire Protection Research Foundation Report, 2013.

Other Publications

Cotts, BRT, Graf KL, Bailey, WH. Electromagnetic Interference Considerations for Electrical Power Systems. Ch. 5 in: The Power Grid: Smart, Secure, Green, and Reliable. D'Andrade B (ed). Elsevier Ltd., 2017, 137-170.

Cotts, BRT, Prigmore, JR, Graf KL. HVDC Transmission for Renewable Energy Integration. Ch. 6 in: The Power Grid: Smart, Secure, Green, and Reliable. D'Andrade B (ed). Elsevier Ltd., 2017, 171-196.

Pooley M, Cotts B, Brennan, III JF. Compatibility of medical devices with electromagnetic and wireless

signals. North Carolina Associate of Defense Attorneys The Resource; 2017 Sept.

Phan SK, Stepan J, Cotts BRT. Electrical Conductor Spacing Standards for Printed Circuit Boards. Exponent Electrical Engineering and Computer Science Newsletter. Vol. 4, 2016.

Cotts BRT, Inan US, Lehtinen NG. Theoretical prediction of longitudinal dependence of electron precipitation due to lightning. AGU Fall Meeting, San Francisco, CA, December 14-18, 2009.

Inan US, Cotts BRT, Lehtinen NG. Long recovery early/fast events as possible evidence of persistent ionization by Giant Blue Jets. IUGG, Perugia, Italy, July 2-13, 2007.

Cotts BRT, Inan US, Lehtinen NG. Long recovery early/fast events as possible evidence of persistent ionization by Giant Blue Jets. URSI, Ottawa, Canada, July 22-26, 2007.

Cotts BRT, Inan US. Observation of daytime perturbations of VLF transmitter signals. ICAE, Beijing, China, August 13-17, 2007.

Cotts BRT, Inan US. Daytime early VLF perturbations exhibiting long recoveries and wide-angle scattering. AGU, San Francisco, CA, December 10-14, 2007.

Cotts BRT, Inan US. VLF observation of long ionospheric recovery events. AGU, San Francisco, CA, December 11-15, 2006.

Cotts BRT, Inan US, Pasko VP. Ray tracing techniques applied to sky wave observations of lightning-induced ionospheric effects on short range VLF paths. URSI, Boulder, CO, January 5-8, 2005.

Cotts BRT, Inan US. Ray-based modeling of lightning-induced ionospheric effects on short range VLF skywave signals. AGU, San Francisco, CA, December 5-9, 2005.

Cotts BRT, Inan US. Short range VLF sky wave observations of lightning-induced ionospheric effects. AGU, San Francisco, CA, December 13-17, 2004.

Cotts BRT, Inan US, Golkowski M. Lightning-induced electron precipitation measurements with VLF and the Arecibo Radar. PARS Summer School, Arecibo, PR, August 10-21, 2004.

Cotts BRT, Inan US, Selser E. ELF/VLF near-field imaging of modulated auroral-electrojet currents using a VLF interferometer. PARS Summer School, University of Fairbanks Alaska, August 11-21, 2003.

Cotts BRT, Inan US. Precipitation of energetic electrons by Magnetospherically Reecting (MR) Whistlers. AGU, San Francisco, CA, December 8-12, 2003.

Peer Reviewer

Referee for Journal of Geophysical Research – Space Physics

Referee for Radiation Protection Dosimetry

ATTACHMENT B

Michael Libertine, LEP
Vice President
Director of Siting and Permitting

All-Points Technology Corporation, P.C.
567 Vauxhall Street Extension
Suite 311
Waterford, CT 06320
860-552-2238
mlibertine@allpointstech.com

Background

Mr. Libertine is an owner of All-Points Technology Corporation with over 30 years of professional experience in the environmental field. His consulting expertise includes regulatory siting and permitting; visibility and aesthetic evaluations; environmental due diligence and site assessments; and field investigations for property transfers; and, NEPA compliance.

Mike assists clients in the siting and permitting of utility infrastructure, including bulk power substations, transmission lines, renewable energy facilities, and telecommunication facilities. He has represented clients and provided expert testimony in front of state and local commissions, including the Connecticut Siting Council, on more than 500 projects. A Licensed Environmental Professional in Connecticut, Mike has completed/supervised over 2,200 environmental site assessments and field investigations throughout New England.

Representative Projects

Environmental Land Planning, Siting and Permitting – Electric Utilities

Since 2004, Mike has served as Program Manager for the siting and permitting of numerous electric utility projects in Connecticut and Massachusetts involving the assessment, siting and permitting of: new bulk power substations; modifications to existing substations; upgrades/relocation of transmission lines; installation of electrical system infrastructure; and, development of other support facilities. These projects require extensive coordination with numerous team members, including client's in-house discipline managers and engineers, outside consultants, legal counsel, staff, and subcontractors.

Project-related services include overseeing civil engineering feasibility studies, pre-acquisition due diligence evaluations, natural resources inventories and wetland delineations, habitat evaluations, noise analysis, hazardous waste investigations, site survey, landscape architecture, visual analyses, preparation of technical documents and regulatory applications, coordination with federal, state and local agencies, permitting, public outreach, and expert witness testimony. Mike and his team also have provided environmental monitoring to meet regulatory requirements and those set forth in contract documents and specifications.

Visibility and Aesthetic Assessments

For over 20 years, Mike has evaluated the visual effects of small and large-scale development projects, using the combination of predictive computer modeling and in-field analysis. The predictive model provides a quantifiable measurement of visibility throughout a pre-defined study area. Conducting field reviews with visual markers provides the ability to verify results of the computer model and record existing conditions through photographic documentation. Photographic simulations are prepared to depict scaled renderings of the proposed development, providing qualitative observations. Mike has completed more than 500 visual evaluations for electrical utilities, renewable energy facilities, telecommunication towers, and commercial development.

Environmental Siting and Permitting Services, Commercial Solar Facilities, Connecticut
Mike has served as Project Manager on numerous approved commercial solar projects ranging in size from less than 1 MW to 20 MW. Mike oversees the preparation of environmental assessments and impact analyses to support filings to the Connecticut Siting Council and southern New England municipalities involving: environmental due diligence and feasibility investigations; site/civil engineering design; wetland delineations; vernal pool studies and impact evaluations; habitat and wildlife assessments; breeding bird surveys; noise analyses, visibility assessments; archaeological surveys; consults and coordination with state agencies; development of protective measures for natural resources; and, securing stormwater permits. Mike and his team also provide environmental compliance monitoring during construction of these facilities.

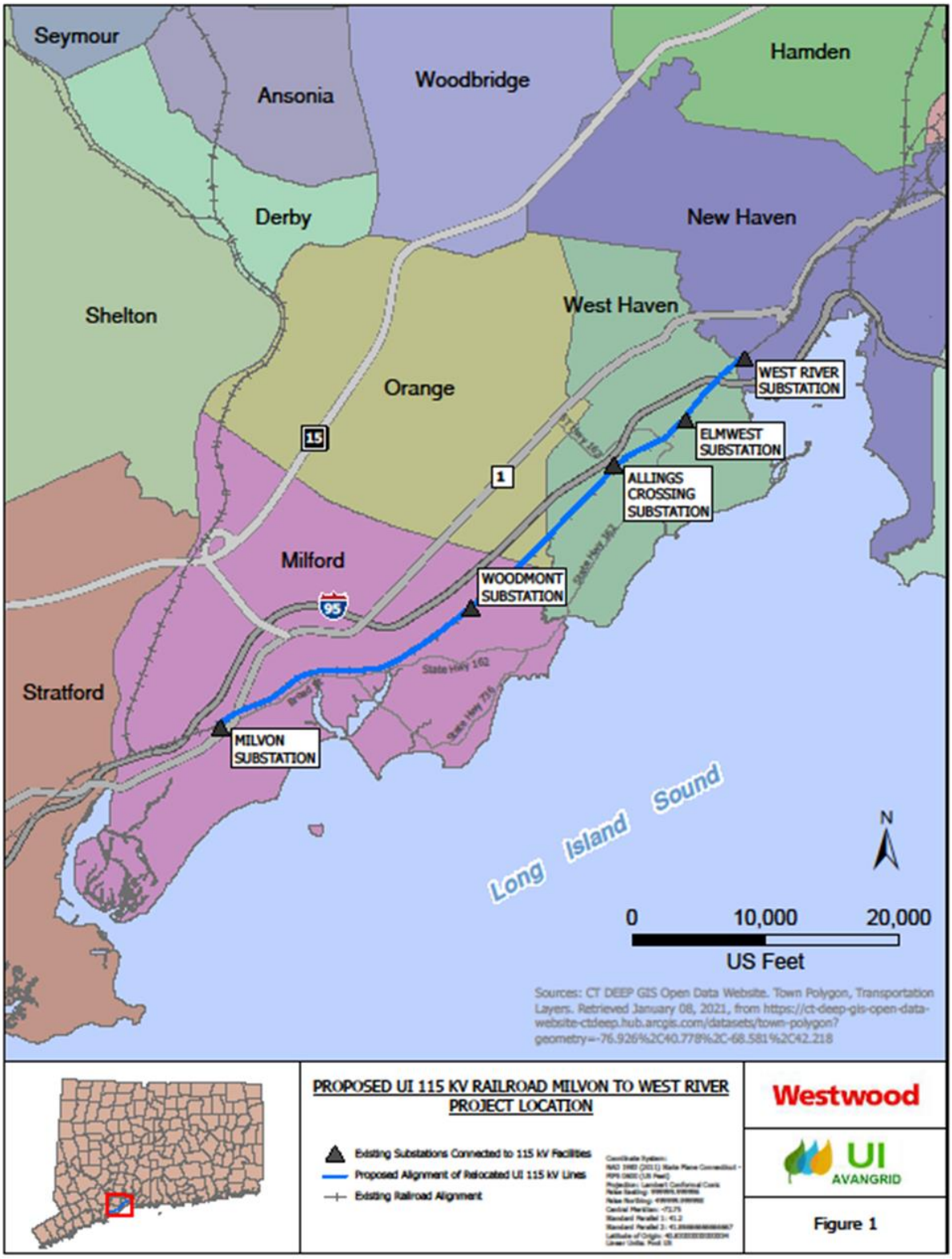
Environmental Siting and Permitting Services, Fuel Cell Installations
Similar to solar development, the siting and permitting process for fuel cell generation facilities requires an assessment of the project's potential impacts on water and other natural resources, vegetation and wildlife, rare species, historic and cultural resources, noise, air quality, scenic and recreational areas, and the community.

Environmental Permitting Services for Wireless Telecommunications Clients, New England & NY
Mike has been providing environmental siting, land planning and permitting services on behalf of various telecommunications service providers and tower builders throughout New England and New York since 1997. He has testified on behalf of numerous clients regarding environmental and aesthetic considerations in front of local municipalities, the CT Siting Council and state and federal agencies. Representative services include: due diligence and land use evaluations; preliminary site screenings; preparation of environmental compliance documentation, environmental assessments to fulfill NEPA requirements; Phase I ESAs and Phase II field investigations; remedial planning and oversight; wetlands and vernal pool assessments; vegetative/biological surveys; noise analyses; visibility analyses; graphic support; securing regulatory permits; and, environmental monitoring during and post-construction.

Environmental Evaluations and Regulatory Permitting, Wind Farm Colebrook, Connecticut
Mike served as the Project Manager for environmental evaluations associated with the development of Connecticut's first commercial wind farm. He supervised due diligence investigations, natural resource studies and environmental permitting activities, including the evaluation of: wetlands and watercourses; flora and fauna; potential noise impacts and flicker phenomena; and, visual/aesthetic considerations. Mike provided expert testimony at local and state public hearings and assisted in preparing the Development and Management Plan and pre-construction coordination efforts of the 3.2 MW project.

Education	University of Connecticut, B.S. Natural Resources Management, December 1990 Stonehill College, B.A. Marketing, May 1981
Licenses	Licensed Environmental Professional, State of Connecticut, LEP No. 345

Figure 1-1: Project Location



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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	:	April 21, 2022

PRE-FILE TESTIMONY OF SHAWN CROSBIE

Q. Please state your name, relation to the applicant and business address.

A. My name is Shawn Crosbie. I am a Senior Project Manager for The United Illuminating Company ("UI" or the "Company"). My business address is 100 Marsh Hill Road, Orange, CT 06477.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to introduce and describe to the Connecticut Siting Council (the "Council") the Company's virtual tour of the proposed Milvon to West River Railroad 115-kilovolt ("kV") Transmission Line Rebuild Project (the "Project" or the "MWR Transmission Line Project").

Q. What is the virtual tour of the MWR Transmission Line Project showing?

A. The virtual tour uses aerial imagery and visual simulations to illustrate the existing conditions and the proposed changes within the 9.5-mile transmission line rebuild route along the Connecticut Department of Transportation ("CT DOT") / Metro-North Railroad ("MNR") corridor. The objective of the virtual tour is to help the Council and others visualize how the proposed rebuilt lines will look.

Q. How was this virtual tour developed?

A. The Company used a sequence of recent aerial imagery, on-ground photographs, and photo-simulations to create a narrated tour of the 9.5-mile transmission line rebuild route as it extends east from UI's Milvon Substation in Milford, Connecticut to UI's West River Substation in New Haven, Connecticut. Along the length of the route, the tour uses aerial photographs to illustrate the location of the Project's proposed monopoles in relation to the CT DOT corridor and MNR tracks. At representative locations along the route, the tour also includes street-level photographs to illustrate existing conditions and then uses the same photographs – modified to illustrate the proposed monopoles – to depict "with Project" conditions.

Q. How was the aerial imagery created?

A. The aerial imagery, which depicts the Project's proposed monopole and wire locations, was derived from an engineering design program in which the colored lines

depict the proposed rebuild of UI's 115 kV transmission line conductors, optical ground wire, shield wire, and underbuilt.

Q. Does the virtual tour illustrate the final configuration of the Project?

A. The virtual tour reflects UI's 70% engineering design for the Project. UI proposes to rebuild the 115-kV lines as illustrated in the Council's Application and as generally depicted in the virtual tour. However, it is possible that the locations of some of the monopoles may change slightly as a result of the Council's review of the Project and other State and Federal regulatory processes. Additionally, it should be noted that the aerial imagery used in the virtual tour shows the existing vegetation along the proposed Project route and does not account for the tree clearing that might be needed to complete the Project.

Q. What are the representative locations along the proposed Project route that are depicted in the virtual tour by street-level views?

A. From west to east, along the proposed Project route, the representative locations for which the tour provides street-level views are as follows:

In the City of Milford: the Milvon Substation; the U.S. Route 1 Crossing, located just north of the intersection of Boston Post Road with Bridgeport Avenue; the end of Pearl Hill Street across Clark Street; the north side of the CT DOT railroad corridor, south of Lauralton Hall and north of the Milford Green; the Milford Train Station; the Milford Cemetery; the north side of the CT DOT railroad corridor crossing the Indian River and

associated wetland complex; Old Gate Lane around City Carting and Recycling Company; and the Woodmont Substation.

In the City of West Haven: Allings Crossing Substation; the West Haven Train Station; and Elmwest Substation.

At the municipal boundary between the City of West Haven and the City of New Haven: the wetland complex associated with the West River; and the catenary structures between First Avenue and the West River; and

In the City of New Haven: the West River Substation.

Q. Why were the above locations selected?

A. These locations were selected to represent the various existing land uses along the proposed Project route, as well as to depict the views of the monopoles from different locales.

Q. Does this complete your testimony?

A. Yes, it does.