Sunrise Wind New York Cable Project

Appendix 1-C

Pre-filed Testimony

Prepared for:

Sunrise Wind | Powered by Ørsted & Eversource

December 9, 2020

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Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Derrik Berg

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
DERRIK BERG
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Derrik Berg.

Q. Please state the name of your employer and its business address.

A. I am employed by Eversource Energy (Eversource), which has a business address of 107 Selden Street, Berlin, Connecticut 06037.

Q. In what capacity are you employed?

A. I am the Manager of Offshore Wind Siting for New York projects.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I received a Bachelor of Science from Arizona State University in 2002. I have been employed by Eversource Energy since June 2020. Before my employment with Eversource, I was employed by multiple environmental consulting firms that specialize in the permitting, planning, routing, and siting of utility-scale energy generation and transmission projects. Additionally, I have been employed by Duke Energy and NextEra Energy Transmission. Specifically, the roles that I have filled include: Geographic Information Systems (GIS) Analyst/Land Use Planner, Greystone Environmental (2002–2006); GIS Analyst/Land Use Planner, Arcadis (2006–2007); GIS Manager, KP Environmental, Inc (2010–2014); GIS Programmer/Analyst, Resource Data, Inc. (2014–2015); Senior Analyst,

Transmission Development and Analytics, NextEra Energy Transmission (2015–2016); Environmental Project Manager, KP Environmental, Inc (2016–2017); GIS Manager, Distribution Design Engineering, Duke Energy (2017); and Environmental Project Manager, KP Environmental, Inc (2017–2019).

Q. Please describe your role with respect to the preparation of Sunrise Wind LLC's New York Public Service Law Article VII application that is the subject of this proceeding (the Application).

A. I am responsible for the overall federal, state, and local siting requirements and compliance primarily for the onshore components for the Offshore Wind projects owned by Eversource through the joint venture between Orsted North America Inc. (Orsted NA) and Eversource Investment LLC (Eversource Investment) (the Joint Venture).

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

A. The purpose of my testimony is to support Sunrise Wind LLC's (Sunrise Wind) application pursuant to New York Public Service Law (PSL) Article VII for a Certificate of Environmental Compatibility and Public Need to construct, operate, and maintain the Sunrise Wind New York Cable Project (Project). To that end, my testimony explains, at a high-level, the Project and provides a background on Sunrise Wind and its corporate structure.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 2 (Location of Facilities), Exhibit 3 (Alternatives), Exhibit 4 (Environmental Impact), Exhibit 7 (Local Ordinances), Exhibit 8 (Other Pending Filings), Exhibit E-1 (Description of Proposed Transmission Line), Exhibit E-2 (Other Facilities), Exhibit E-3 (Underground Construction), and Appendix 7-A (Town and County Ordinances)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Please provide a high-level overview of the Project.

A. Sunrise Wind proposes to construct, operate, and maintain the Project, which follows Sunrise Wind's execution of a 25-year Offshore Wind Renewable Energy Certificate (OREC) contract related to the Sunrise Wind Farm (SRWF) and the Project with the New York State Energy Research and Development Authority (NYSERDA) in October 2019. The Project will deliver power from the SRWF, located in federal waters on the Outer Continental Shelf (OCS), to the existing electrical grid in New York (NYS). The Project includes offshore and onshore components within NYS that are subject to PSL Article VII review and will interconnect at the existing Holbrook Substation, which is owned and operated by the Long Island Power Authority (LIPA).

Specifically, power from the SRWF will be delivered to the existing mainland electric grid via distinct Project segments: the submarine segment of the export cable (SRWEC), which will be located in both federal and NYS waters (the NYS portion of the cable referred to as the SRWEC–NYS); the terrestrial underground segment of the transmission cable (Onshore Transmission Cable); the new Onshore Converter Station (OnCS–DC); and the underground segment of the interconnection cable (Onshore Interconnection Cable). The Onshore Transmission Cable, the OnCS–DC, and Onshore Interconnection Cable (collectively, the Onshore Facilities) are all located in the Town of Brookhaven, Suffolk County, New York.

The Project's components are generally defined into two categories: (1) SRWEC–NYS, and (2) Onshore Facilities. The SRWEC–NYS is one direct current (DC) submarine export cable bundle (320 kilovolt [kV]) up to 6.2 miles (mi) (10 kilometers [km]) in length in NYS waters and up to 1,575 feet (ft) (480 meters [m]) located onshore (*i.e.*, above the Mean High Water Line [MHWL], as defined by the United States [US] Army Corps of Engineers [USACE] [33 Code of Federal Regulations (CFR) 329]) and underground, up to the transition joint bays (TJBs). The Onshore Facilities include: one DC underground transmission circuit (320 kV) (referred to as the Onshore Transmission Cable) up to 17.5 mi (28.17 km) in length within existing roadway right-of-way (ROW), TJBs, and

concrete and/or direct buried joint bays and associated components; one OnCS–DC that will transform the Project voltage to 138 kV alternating current (AC); two AC underground circuits (138 kV) (referred to as the Onshore Interconnection Cable) up to 1 mi (1.6 km) in length, which will connect the new OnCS–DC to the existing Holbrook Substation; and fiber optic cables co-located with both the Onshore Transmission Cable and Onshore Interconnection Cable.

Q. Please describe Sunrise Wind's corporate structure.

A. Sunrise Wind is a 50/50 joint venture between Orsted NA and Eversource Investment.

In December 2016, Orsted NA and Eversource Investment entered into the Joint Venture to develop offshore wind in the Northeast. That partnership has now grown to include at least 4,000 MW of offshore wind, including the now-awarded Revolution Wind, South Fork Wind, and Sunrise Wind projects.

Addressing the realities of climate change requires strong leadership with a proven track record. Sunrise Wind brings unparalleled experience as Orsted, the global leader in offshore wind and a global leader in climate action, and Eversource, New England's largest energy company and premier electric transmission builder.

Q. Does this conclude your testimony?

A. Yes.

Derrik Berg

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Coram, NY 11727

Email: derrikberg@yahoo.com
Telephone: 480-784-7219

EDUCATION

- **Bachelor of Science**
  Arizona State University

SPECIALTIES

- Project Management
- Environmental Compliance
- Land Use Permitting & Planning
- Site Selection & Feasibility
- Environmental Impact Assessment
- Public Involvement & Stakeholder Outreach
- Geographic Information Systems (GIS)

Mr. Derrik Berg is a Project Manager specializing in environmental compliance, permitting and planning, and impact assessment with 17 years of experience. He has specifically been the Environmental Project Manager, Land Use Planner, and GIS Manager for a number of power generation and linear utility projects.

He has been responsible for managing projects involving teams of up to 35 technical professionals. He has experience procuring subcontractor resources for projects; developing and tracking project schedules and budgets; developing performance metrics and scorecards; evaluating staff performance; and providing training and administrative action as necessary.

Mr. Berg has provided environmental services for the development of numerous projects throughout the United States. He has provided expertise in site selection; corridor routing and siting; land use planning and permitting; and preparation of federal, state, and local environmental documents for a variety of energy generation and transmission projects. He has prepared impact assessments, acquired permits, and been responsible for the preparation of environmental documents to satisfy the requirements of the National Environmental Policy Act (NEPA) when federal lands or other federal jurisdiction is involved. He is familiar with local government zoning processes, state regulatory requirements throughout the United States and federal compliance requirements for documents prepared for the BIA, BLM, BOR, ACE, USFWS, and USFS. He is familiar with tribal consultation and Section 106 of the National Historic Preservation Act; Sections 404 and 401 of the Clean Water Act; and Sections 7 and 10 of the Endangered Species Act.

He has experience regarding public and stakeholder involvement processes for projects where public input is needed. He has developed Public Participation Programs and facilitated public consultation processes, public workshops, and meetings. Public Participation Programs have included development of public outreach programs, stakeholder identification and coordination, elected official coordination, development and publication of newsletters, and interface with media and local residents.

Mr. Berg has managed environmental monitoring and compliance teams' efforts through the construction and operations phases of development, providing expertise in compliance with permits and mitigation measures issued by local, state, and federal regulatory agencies.

Mr. Berg also has experience in a diverse range of energy generation and transmission projects involving GIS; global positioning systems and applications; and remote sensing applications. He has provided expertise in map production; cartographic principles and elements; complex geospatial analysis; immediate and cumulative effects analyses; and comparative analysis studies for numerous power generation and transmission projects.

The following provides a comprehensive list of projects for which Mr. Berg has provided project management, land use planning, GIS analysis, public involvement and environmental analysis. This has included providing and developing the following types of documents:

- Environmental Assessments & Impact Statements
- Feasibility & Fatal Flaw Analyses
- Siting & Routing Studies & Reports
- Environmental Monitoring & Construction Documentation (POD/COMP Plans)

Derrik Berg

20601 W. Carlton Manor
Buckeye, AZ 85396

Email: derrikberg@yahoo.com
Telephone: 480-784-7219

ENERGY PROJECT EXPERIENCE

He has served as Project Manager, Land Use Planner, and GIS Manager on the following wind, oil and gas, solar, and transmission line projects.

- Bearkat to Longshore 345kV Transmission Line Project– Oncor/Wind Energy Transmission Texas
- Cottonwood to Dermott 345kV Transmission Line Project – Wind Energy Transmission Texas
- Scurry County to Long Draw 345kV Transmission Line Project – Wind Energy Transmission Texas
- Long Draw to Grelton 345kV Transmission Line Project - Wind Energy Transmission Texas
- Grelton to Odessa 345kV Transmission Line Project – Wind Energy Transmission Texas
- Long Draw to Sand Bluff 345kV Transmission Line Project - Wind Energy Transmission Texas
- Sand Bluff to Divide 345kV Transmission Line Project - Wind Energy Transmission Texas
- Sand Bluff to Bearkat 345kV Transmission Line Project - Wind Energy Transmission Texas
- East-West Tie 230kV Transmission Line Project—NextBridge (NextEra/Enbridge partnership)
- Estrella 230kV Substation Project—NextEra Energy Transmission
- Suncrest Dynamic Reactive Support Project—NextEra Energy Transmission
- Multiple Confidential Competitive Transmission Projects – NextEra Energy Transmission
- Southeast Power Link 230kV Transmission Line Project - SRP
- Palo Verde to Pinal West 500 kV Transmission Line Project – SRP
- Pinal West to Southeast Valley/Browning 230/500 kV Transmission Line Project – SRP
- Bay Lake Project 345kV Transmission Line Project (2 - 345/138kV transmission line projects)– ATC
- MGCW- 4 separate 345/138 kV transmission line projects-ATC
- Sunrise Powerlink 500kV Transmission Line Project – SDG&E
- Central California Power Connect Project-- PG&E
- South County Power Connect Project-- PG&E
- Campo Verde Solar Project- First Solar
- Sun Streams IV Solar Project – First Solar
- Sun Streams PVS Solar Project – First Solar
- Moapa Solar Energy Center Project--K Road Power/First Solar
- Wistaria Ranch Solar Project – ConEdison Development
- Rio Mesa Solar Electric Generating Facility Project – BrightSource Energy
- San Bernardino Solar Project – Aminox
- Diamond Spring Wind Project – Clearway Energy
- Baird North Wind Project – Clearway Energy
- Langford Wind Power Project – Clearway Energy
- Multiple Confidential Oil and Gas Planning and Permitting Projects- Conoco Phillips Alaska

EMPLOYMENT

- Eversource Energy, Manager of Siting, New York Offshore Wind; Present
- KP Environmental Inc; Environmental Project Manager; 2017-2020
- Duke Energy; GIS Manager Distribution Design Engineering; 2017
- KP Environmental Inc; Environmental Project Manager; 2016
- NextEra Energy Transmission; Senior Analyst – Development Analytics; 2015 - 2016
- Resource Data Inc (Environmental Data Manager/Planner On-Site supporting Conoco Phillips Alaska); GIS Programmer/Analyst; 2014 - 2015
- KP Environmental Inc; Senior Land Use Planner/GIS Manager; 2010 – 2014
- Ryan Herco Flow Solutions; Operations Manager; 2007-2010
- Greystone Environmental Inc/Arcadis G&M; Land Use Planner/GIS Analyst; 2002-2007

Sunrise Wind LLC

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Direct Testimony of Kenneth Bowes

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
KENNETH BOWES
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Kenneth Bowes.

Q. Please state the name of your employer and its business address.

A. I am employed by Eversource Energy, which has a business address of 56 Prospect Street, Hartford, Connecticut 06141.

Q. In what capacity are you employed?

A. I am the Vice President of Offshore Wind Siting & Permitting.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have a Bachelor of Electrical Engineering degree from the University of New Hampshire and a Master's in Electrical Engineering from Rensselaer Polytechnic Institute. I was inducted into the University of Connecticut Academy of Distinguished Engineers in 2016 and elected into the Connecticut Academy of Science and Engineering in 2017.

I joined Eversource in July 1984 in the System Test department and have held several engineering and management positions in the Energy Delivery organizations becoming the Director – Transmission and Distribution Maintenance in 1999, Director – Transmission Construction, Test, and Maintenance in 2002, Director – Transmission Projects in 2004, Vice President –

Customer Operations in 2008, Vice President of Energy Delivery in 2010, Vice President of Engineering in 2014, Vice President of Transmission Performance in 2017, and Vice President of ISO Policy, Siting & Compliance in 2018. I assumed my present role in July of 2019.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I am responsible for the overall federal, state and local siting & permitting requirements and compliance for the Offshore Wind projects owned by Eversource through the Joint Venture.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 1 (General Information Regarding Application)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Kenneth Bowes

Vice President, Siting & Permitting

Kenneth Bowes is Vice President, Offshore Wind Siting & Permitting for Eversource Energy. In that role, he is responsible for the leadership and direction of siting and permitting activities for Offshore Wind and related transmission infrastructure projects, and compliance for those projects. He serves as a technical consultant for various large transmission projects, clean energy projects, and provides expert testimony in regulatory proceedings concerning them.

A native of New Hampshire, Bowes joined Eversource in July 1984 in the System Test department. He has held several engineering and management positions in the Energy Delivery organizations becoming the Director – Transmission and Distribution Maintenance in 1999, Director – Transmission Construction, Test, and Maintenance in 2002, Director – Transmission Projects in 2004, Vice President – Customer Operations in 2008, Vice President of Energy Delivery in 2010, Vice President of Engineering in 2014, Vice President of Transmission Performance in 2017, and Vice President of ISO Policy, Siting & Compliance in 2018.

Ken has a Bachelor of Electrical Engineering degree from the University of New Hampshire and a Master's Degree in Electrical Engineering from Rensselaer Polytechnic Institute. He is the past Chairman of the Edison Electric Institute's Transmission Committee. He serves on the Connecticut Science Center Women in Science Steering Committee, the Board of Directors of Special Olympics Connecticut, the Bristol Boys and Girls Club Board of Directors, and is Past Chairman of the Board of Nutmeg Big Brothers Big Sisters. Bowes was inducted into the University of Connecticut, Academy of Distinguished Engineers in 2016 and elected into the Connecticut Academy of Science and Engineering in 2017.

PUBLICATIONS AND PREVIOUS TESTIMONY
Kenneth B. Bowes

Publications:

- Yan Li*, Student Member, IEEE*, Peng Zhang*, Senior Member, IEEE*, Wenyuan Li, *Life Fellow, IEEE*, Joseph N. Debs, David A. Ferrante, Donald J. Kane, Samuel N. Woolard, Roderick Kalbfleisch, Kenneth B. Bowes, and Andrew J. Kasznay*, Member, IEEE,* "Non-Detection Zone Analytics for Unintentional Islanding in Distribution Grid Integrated with Distributed Energy Resources", IEEE Transactions on Sustainable Energy, April 2018, PP(99):1-1.

- Bowes K., Beehler M., "Defining the Value of the Grid", IEEE, The Sixth Annual IEEE PES Conference on Innovative Smart Grid Technology, February 2015

- Bowes K., Hogan J., "CL&P Explores Sustainable Solutions", Transmission & Distribution World Magazine, January 2012, Volume 64, Number 1, pp. 24-31.

- IEEE Working Group on Nonsinusoidal Situations, "Practical Definitions for Powers in Systems with Nonsinusoidal Waveforms and Unbalanced Loads: A Discussion", 95 WM 040-6 PWRD, 1995

- IEEE Working Group on Nonsinusoidal Situations, "A Survey of North American Electric Utility Concerns Regarding Nonsinusoidal Waveforms", 95 WM 036-4 PWRD, 1995

- Bowes, K. B., "The Effects of Temporary Overvoltage (TOV) on Consumer Products", POWER QUALITY '91 USA, Official Proceedings of the Third International Power Quality Conference, Universal City, CA, September 22-27, 1991

- Bowes, K. B., Lorusso, A., "Harmonic and Power Characteristics of Electronic Ballasts for Fluorescent Lighting Applications", POWER QUALITY '90 USA, Official Proceedings of the Second International Power Quality ASD Conference, Philadelphia, PA, October 21, 29, 1990

- Anderson, L.M., Bowes, K.B., "The Effects of Power-line Disturbances on Consumer Electronic Equipment", IEEE Transactions on Power Delivery, Volume 5, Number 2, pp. 1062-65, April 1990

- Bowes, K. B., "The Effects of Power-line Disturbances on Electronic Products", POWER QUALITY '89 USA, Official Proceedings of the First International Power Quality Conference, Long Beach, CA, October 15-20-1989 (Also edited and reprinted in Power Quality Magazine - Premier V Issue)

Mr. Bowes has testified extensively in many cases in a variety of forums, including:

Siting Proceedings:

- Connecticut Siting Council Docket No. 474 – The Connecticut Light & Power Company d/b/a Eversource Energy application for a Certificate of Environmental Compatibility and Public Need for the Greater Hartford-Central Connecticut Reliability Project that traverses

the municipalities of Hartford, West Hartford, and Newington, , which consists of construction, maintenance and operation of a new 115-kilovolt (kV) electric transmission line within existing Eversource, Amtrak and public road rights-of-way and associated facilities extending overhead approximately 2.4 miles and underground approximately 1.3 miles.

- Connecticut Siting Council Docket No. 461, Docket No. 461A – Eversource Energy application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a 115-kilovolt (kV) bulk substation located at 290 Railroad Avenue, Greenwich, Connecticut, and two 115-kV underground transmission circuits extending approximately 2.3 miles between the proposed substation and the existing Cos Cob Substation, Greenwich, Connecticut, and related substation improvements.

- Connecticut Siting Council Docket No. 292 – The Connecticut Light & Power Company application for a Certificate of Environmental Compatibility and Public Need for the construction and operation of 8.7 miles of new underground 115-kilovolt electric transmission cables extending from CL&P's existing Glenbrook Substation in the City of Stamford, through the Town of Darien, to CL&P's existing Norwalk Substation in the City of Norwalk.

- Connecticut Siting Council Docket No. 302 – Northeast Utilities Service Company, on behalf of The Connecticut Light and Power Company (CL&P) application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of the proposed Killingly 2G Substation at 193 Tracy Road and 227-257 Park Road in the Towns of Killingly and Putnam, and the proposed connections to the existing #347 345-kV line and the existing #1607 and #1505 115-kV lines.

- Connecticut Siting Council Docket No. 311 – Northeast Utilities Service Company, on behalf of The Connecticut Light and Power Company (CL&P) Application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of the proposed Wilton 35A Substation at 53 Old Danbury Road in the Town of Wilton.

- Connecticut Siting Council Docket No. 326 – The Connecticut Light and Power Company application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a proposed substation located at Stepstone Hill Road, Guilford, Connecticut.

- Connecticut Siting Council Docket No. 327 – The Connecticut Light and Power Company application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a proposed substation located off Commerce Drive, Oxford, Connecticut.

- Connecticut Siting Council Docket No. 352 – The Connecticut Light and Power Company application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a proposed substation located at 264 Rood Avenue and 25 Shelley Avenue, Windsor, Connecticut.

- Connecticut Siting Council PETITION NO. 737 - The Connecticut Light and Power Company petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed Manchester to Hopewell 115-kV Transmission Line Reconductor Project in the Towns of Manchester and Glastonbury.

- Connecticut Siting Council PETITION NO. 702 **-** Connecticut Light & Power Company petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed Plumtree to Triangle 115-kV Transmission Upgrade Project in the towns of Bethel and Danbury, Connecticut.

- State of New Hampshire, Site Evaluation Committee, Docket No. 2015-06, Joint Application of Northern Pass Transmission LLC and Public Service Company of New Hampshire d/b/a Eversource Energy For A Certificate of Site and Facility To Construct A New High Voltage Transmission Line And Related Facilities In New Hampshire.

- State of New Hampshire, Site Evaluation Committee, Docket No. 2015-04 Application of Public Service Company of New Hampshire d/b/a Eversource Energy ("Eversource") for a Certificate of Site and Facility for the Construction of a New 115 kV Transmission Line from Madbury Substation to Portsmouth Substation.

- Commonwealth of Massachusetts, Energy Facilities Siting Board, EFSB 07-4/D.P.U. 07-35/07-36, Petition of Russell Biomass, LLC and Western Massachusetts Electric Company for a proposed project consisting of (1) an approximately 5.3-mile, 115 kilovolt transmission line from the proposed Russell Biomass generating facility in Russell to Western Massachusetts Electric Company's ("WMECo") transmission system in Westfield, and (2) a new switching station facility in Westfield.

- New York State Public Service Commission, Case 18-T-0604, Application of Deepwater Wind South Fork, LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Approximately 3.5 Miles of Submarine Export Cable from the New York State Territorial Waters Boundary to the South Shore of the Town of East Hampton in Suffolk County and Approximately 4.1 Miles of Terrestrial Export Cable from the South Shore of the Town of East Hampton to an Interconnection Facility with an Interconnection Cable Connecting to the Existing East Hampton Substation in the Town of East Hampton, Suffolk County.

Litigation:

- Connecticut Superior Court, Allyn vs. CL&P, CV-96-0109273-S.

- Connecticut Superior Court, Scanlon vs. CL&P, CV-96-0536911S.

- Connecticut Superior Court, Segalla vs. CL&P, X-04-CV-98-0117225S.

- DSV MR. SONNY: Damage to submarine electric cables in Long Island Sound. Complex, multi-party limitation of liability proceeding in U.S. District Court for the Eastern District of New York. Settled at mediation.

Regulatory Proceedings:

- Connecticut DPUC Docket No. 94-05-35 - DPUC Investigation Into Stray Voltage On Dairy Farms.
- Connecticut DPUC Docket No. 08-02-06 - DPUC Investigation into The Connecticut Light and Power Company's Billing Issues.
- Connecticut DPUC Docket No. 09-12-05 - Application of The Connecticut Light and Power Company to Amend Its Rate Schedules.
- Connecticut DPUC Docket No. 10-03-08 - Investigation of the Service Response and Communications of The Connecticut Light and Power Company (CL&P) and The United Illuminating Company (UI) Following the Outages from the Severe Weather over the Period of March 12 through March 14, 2010.
- Connecticut DPUC Docket No. 10-05-09 - DPUC Investigation of the Safety of the Connecticut Light and Power Company Underground Electric Distribution System in Waterbury.
- Connecticut PURA Docket No. 11-03-07 - PURA Investigation Into The Appointment Of A Third Party Statewide Utility Telephone Pole Administrator For The State Of Connecticut.
- Connecticut PURA Docket No. 11-09-09 - PURA Investigation of Public Service Companies' Response to 2011 Storms.
- Connecticut PURA Docket No. 12-01-07 - Application for Approval of Holding Company Transaction Involving Northeast Utilities and NSTAR.
- Connecticut PURA Docket No. 12-01-10 - Investigation into the Tree Trimming Practices of CT Utility Companies.
- Connecticut PURA Docket No. 12-06-09 - PURA Establishment of Industry Performance Standards for Electric and Gas Companies.
- Connecticut PURA Docket No. 12-07-06RE01 - Application of the Connecticut Light and Power Company For Approval of its System Resiliency Plan – Expanded Plan.
- Connecticut PURA Docket No. 12-06-12 - PURA Investigation of the Feasibility of the Establishment of a Program to Reimburse Residential Customers for Spoilage Loss of Food items or Refrigerated Medications Caused by a Lack of Refrigeration During Electric Service Outages.
- Connecticut PURA Docket No. 12-09-13 - PURA Investigation of the Best Practices of Other State Public Utility Commissions, Public Utility Companies and Municipal Utilities' Emergency Management Best Practices.
- Connecticut PURA Docket No. 12-11-07 - PURA Investigation into the Performance of Connecticut's Electric Distribution Companies and Gas Companies in Restoring Service Following Storm Sandy.

- Connecticut PURA Docket No. 13-03-23 - Petition of the Connecticut Light and Power Company for Approval to Recover its 2011-2012 Major Storm Costs.
- Connecticut PURA Docket No. 14-05-06 - Application of the Connecticut Light and Power Company To Amend Rate Schedules.
- Connecticut PURA Docket No. 14-07-18 - PURA Report to the General Assembly Concerning its Review of Each Electric Distribution Company's Vegetation Management Practices.
- Connecticut PURA Docket No. 15-01-27 - Attorney General and Office of Consumer Counsel Request for Investigation of Northeast Utilities Facilities Closures in Connecticut.
- Connecticut PURA Docket No. 15-12-20 - PURA Review of Electric Companies' and Electric Distribution Companies' Plans for Maintenance of Transmission and Distribution Overhead and Underground Lines.
- Public Act 15-5 - Section 103 – Connecticut Department of Energy & Environmental Protection, Demonstration Projects for Grid-Side System Enhancements.
- Connecticut PURA Docket No. 17-10-46 - Application of The Connecticut Light and Power Company d/b/a Eversource Energy to Amend its Rate Schedules
- New Hampshire Public Utilities Commission, Docket No. DE 15-464, Public Service Company of New Hampshire d/b/a Eversource Energy, Petition for Approval of Lease Agreement between PSNH dba Eversource Energy and Northern Pass Transmission LLC.
- New Hampshire Public Utilities Commission, Docket No. DE-17-081, Public Service Company of New Hampshire d/b/a Eversource Energy, 2017 Transmission Cost Adjustment Mechanism.
- New Hampshire Public Utilities Commission, Docket No. DE-18-089, Public Service Company of New Hampshire d/b/a Eversource Energy, 2018 Transmission Cost Adjustment Mechanism.
- United States of America, Federal Energy Regulatory Commission, Docket No. EL16-64-002.

Sunrise Wind LLC

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Direct Testimony of William Bailey

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

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NEW YORK STATE
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Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
WILLIAM H. BAILEY
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is William H. Bailey.

Q. Please state the name of your employer and its business address.

A. I am employed by Exponent Engineering PC (Exponent), which has a business address of 17000 Science Drive, Bowie, Maryland 20715.

Q. In what capacity are you employed?

A. I am a principal scientist at Exponent, an international multi-disciplinary engineering and scientific research consulting firm.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I received a B.A. from Dartmouth College in 1966. I received an M.B.A. from the University of Chicago in 1969. I received a Ph.D. in Neuropsychology from the City University of New York in 1975. In 1977 I completed two years of postdoctoral training in neurochemistry at The Rockefeller University in New York under a fellowship from the National Institutes of Health. I have over 35 years of experience in assessing exposures to electromagnetic fields from alternating current, direct current, and radiofrequency sources, as well as their interactions with the environment and organisms. In the last 15 years, a good amount of my work has involved the assessment of electric- and magnetic-field

exposures from submarine cables and interactions with marine life. I have published and presented numerous scientific papers on these topics.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I directed the assessment of exposures and impacts from electric and magnetic fields for offshore and onshore portions of the Project, which included the calculations of these fields by Benjamin R.T. Cotts, Ph.D., P.E.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-J (Magnetic-Field Assessment in New York) of Exhibit 4 (Environmental Impact)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Exponent®
Engineering & Scientific Consulting

William H. Bailey, Ph.D.

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Professional Profile

Dr. Bailey specializes in applying state-of-the-art assessment methods to environmental and occupational health issues. His 30 years of training and experience include laboratory and epidemiologic research, health risk assessment, and comprehensive exposure analysis. Dr. Bailey has investigated exposures to alternating current, direct current, and radiofrequency electromagnetic fields, 'stray voltage', and electrical shock, as well as to a variety of chemical agents and air pollutants. He is particularly well known for his research on potential effects of electromagnetic fields on the environment and health and has served as an advisor to numerous state, federal, and international agencies. Currently, he is involved in research on exposures to marine life from submarine cables, respiratory exposures to ultrafine- and nanoparticles, and EMF and RF exposure guidelines.

Dr. Bailey has been a visiting scientist at the Cornell University Medical College and has lectured at Rutgers University, the University of Texas (San Antonio), and the Harvard School of Public Health. He was formerly Head of the Laboratory of Neuropharmacology and Environmental Toxicology at the New York State Institute for Basic Research, Staten Island, New York, and an Assistant Professor and NIH postdoctoral fellow in Neurochemistry at The Rockefeller University in New York.

Academic Credentials & Professional Honors

Ph.D., Neuropsychology, City University of New York, 1975

M.B.A., University of Chicago, 1969

B.A., Dartmouth College, 1966

Sigma Xi

The Institute of Electrical and Electronics Engineers/International Committee on Electromagnetic Safety (Subcommittee 3, Safety Levels with Respect to Human Exposure to Fields (0 to -3 kHz) and Subcommittee 4, Safety Levels with Respect to Human Exposure to Radiofrequency Fields (3 kHz to 3 GHz)

Elected member of the Committee on Man and Radiation (COMAR) of the IEEE Engineering in Medicine and Biology Society, 1998-2001

Academic Appointments

Visiting Scientist, Department of Pharmacology, Cornell University Medical College, New York, NY, 1986-2012

Visiting Scientist, The Jackson Laboratory, Bar Harbor, ME, 1984-1985

Head, Laboratory of Neuropharmacology and Environmental Toxicology, NYS Institute for Basic Research in Developmental Disabilities, Staten Island, NY, 1983-1987

Assistant Professor, The Rockefeller University, New York, NY, 1976-1983

Postdoctoral Fellow, Neurochemistry, The Rockefeller University, New York, NY, 1974-1976

Dissertation Research, The Rockefeller University, New York, NY, 1972-1974

CUNY Research Fellow, Dept. of Psychology, Queens College, City University of New York, Flushing, NY, 1969-1971

Clinical Research Assistant, Department of Psychiatry, University of Chicago; Psychiatric Psychosomatic Inst., Michael Reese Hospital, and Illinois State Psychiatric Inst, Chicago, IL, 1968-1969

Teaching Appointments

Lecturer, University of Texas Health Science Center, Center for Environmental Radiation Toxicology, San Antonio, TX, 1998

Lecturer, Harvard School of Public Health, Office of Continuing Education, Boston, MA, 1995, 1997

Lecturer, Rutgers University, Office of Continuing Education, New Brunswick, NJ, 1991-1995

Adjunct Assistant Professor, Queens College, CUNY, Flushing, NY, 1978

Lecturer, Queens College, CUNY, Flushing, NY, 1969-1974

Prior Experience

President, Bailey Research Associates, Inc., 1991-2000

Vice President, Environmental Research Information, Inc., 1987-1990

Head of Laboratory of Environmental Toxicology and Neuropharmacology, New York State Institute for Basic Research, 1983-1987

Assistant Professor, The Rockefeller University, 1976-1983

Professional Affiliations

The Health Physics Society (Affiliate of the International Radiation Protection Society)

Society for Risk Analysis

International Society of Exposure Analysis

New York Academy of Sciences

American Association for the Advancement of Science (Life Time Member)

Society for Neuroscience/International Brain Research Organization

Bioelectromagnetics Society

The Institute of Electrical and Electronics Engineers (Life Member)

The Institute of Electrical and Electronics Engineers Engineering in Medicine and Biology Society

Conseil International des Grands Réseaux Électriques

Publications

Bailey WH, Cotts B, Dopart PJ. Wireless 5G radiofrequency technology - An overview of small cell exposures, standards and science. IEEE Access. 2020 Aug; 8:140792-140797. doi:0.1109/ACCESS.2020.3010677.

IEEE International Committee on Electromagnetic Safety Technical Committee 95. Bailey WH, Bodemann R, Bushberg J, Chou C-K, Cleveland R, Faraone A, Foster KR, Gettman KE, Graf K, Harrington T, Hirata A, Kavet R, Keshvari J, Klauenberg BJ, Legros A, Maxson DP, Osepchuk JM, Reilly JP, Tell RA, Thansandote A, Yamazaki K, Ziskin MC, Zollman PM. Synopsis of IEEE Std C95.1™-2019 "IEEE Standard for Safety Levels With Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz. IEEE Access. 2019 Dec; 7(1):171346-171356. doi: 10.1109/ACCESS.2019.2954823.

Bailey WH, Williams AL, Leonhard MJ. Exposure of laboratory animals to small air ions: a systematic review of biological and behavioral studies. Biomed Eng Online. 2018 Jun 5;17(1):72. doi: 10.1186/s12938-018-0499-z

Schmiedchen K, Petri AK, Driessen S, Bailey WH. Systematic review of biological effects of exposure to static electric fields. Part II: Invertebrates and plants. Environ Res. 2018 Jan;160:60-76. doi: 10.1016/j.envres.2017.09.013. Epub 2017 Oct 3.

Petri AK, Schmiedchen K, Stunder D, Dechent D, Kraus T, Bailey WH, Driessen S. Biological effects of exposure to static electric fields in humans and vertebrates: A systematic review. Environ Health 2017 Apr 17; 16(1):41. doi: 10.1186/s12940-017-0248-y.

Bailey WH. Review of epidemiology of electromagnetic fields, Martin Röösli, Editor. Health Physics 2015; 109:606-607.

Chang ET, Adami H-O, Bailey WH, Boffetta P, Krieger RI, Moolgavkar SH, Mandel JS. Validity of geographically modeled environmental exposure estimates. Crit Rev Toxicol 2014 May; 44:450-466. doi: 10.3109/10408444.2014.902029.

Alexander DD, Bailey WH, Perez V, Mitchell ME, Su S. Air ions and respiratory function outcomes: A comprehensive review. J Negat Results Biomed 2013 Sep 9; 12(1):14. doi: 10.1186/1477-5751-12-14.

Perez V, Alexander DD, Bailey WH. Air ions and mood outcomes: A review and meta-analysis. BMC Psychiatry 2013 Jan 15; 13(1):29. doi: 10.1186/1471-244X-13-29.

Bailey WH, Johnson GB, Bishop J, Hetrick T, Su S. Measurements of charged aerosols near +/- 500 kV DC transmission lines and in other environments. IEEE Transactions on Power Delivery 2012; 27:371-379.

Shkolnikov YP, Bailey WH. Electromagnetic interference and exposure from household wireless networks. 2011 IEEE Symposium on Product Compliance Engineering (PSES), October 1-5, 2011.

Kavet R, Bailey WH, Bracken TD, Patterson RM. Recent advances in research relevant to electric and magnetic field exposure guidelines. Bioelectromagnetics 2008; 29:499-526.

Bailey WH, Wagner M. IARC evaluation of ELF magnetic fields: Public understanding of the 0.4µT exposure metric. Journal of Exposure Science and Environmental Epidemiology 2008; 18:233-235.

Bailey WH, Erdreich L. Accounting for human variability and sensitivity in setting standards for electromagnetic fields. Health Physics 2007; 92:649-657.

Bailey WH, Nyenhuis JA. Thresholds for 60-Hz magnetic field stimulation of peripheral nerves in human subjects. Bioelectromagnetics 2005; 26:462-468.

Bracken TD, Senior RS, Bailey WH. DC electric fields from corona-generated space charge near AC transmission lines. IEEE Transactions on Power Delivery 2005; 20:1692-1702.

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Kavet R, Stuchly MA, Bailey WH, Bracken TD. Evaluation of biological effects, dosimetric models, and exposure assessment related to ELF electric- and magnetic-field guidelines. Applied Occupational and Environmental Hygiene 2001; 16:1118-1138.

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De Santo RS, Bailey WH. Environmental justice tools and assessment practices. Proceedings, American Public Transit Association, 1999.

Bailey WH, Su SH, Bracken TD. Probabilistic approach to ranking sources of uncertainty in ELF magnetic field exposure limits. Health Physics 1999; 77:282-290.

Bailey WH. Field parameters. Proceedings, EMF Engineering Review Symposium, Status and Summary of EMF Engineering Research. Bracken TD and Montgomery JH (eds), Oak Ridge National Laboratory, Oak Ridge, TN, April 28-29, 1998.

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Bailey WH. Probabilistic approaches to deriving risk-based exposure guidelines: Application to extremely low frequency magnetic fields. In: Non-Ionising Radiation. Dennis JA and Stather JW (eds), Special Issue of Radiation Protection Dosimetry 1997; 72:327-336.

Bailey WH, Su SH, Bracken TD, Kavet R. Summary and evaluation of guidelines for occupational exposure to power frequency electric and magnetic fields. Health Physics 1997; 73:433-453.

Bracken TD, Senior RS, Rankin RF, Bailey WH, Kavet R. Magnetic field exposures in the electric utility

industry relevant to occupational guideline levels. Applied Occupational and Environmental Hygiene 1997; 12:756-768.

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Bailey WH, Charry JM. Measurement of neurotransmitter release and utilization in selected brain regions of rats exposed to dc electric fields and atmospheric space charge. Proceedings, 23rd Hanford Life Sciences Symposium, Interaction of Biological Systems with Static and ELF Electric and Magnetic Fields, 1987.

Pavildes C, Aoki C, Chen J-S, Bailey WH, Winson J. Differential glucose utilization in the parafascicular region during slow-wave sleep, the still-alert state and locomotion. Brain Research 1987; 423:399-402.

Bailey WH, Charry JM. Behavioral monitoring of rats during exposure to air ions and DC electric fields. Bioelectromagnetics 1986; 7:329-339.

Charry JM, Shapiro MH, Bailey WH, Weiss JM. Ion-exposure chambers for small animals. Bioelectromagnetics 1986; 7:1-11.

Charry JM, Bailey WH. Regional turnover of norepinephrine and dopamine in rat brain following acute exposure to air ions. Bioelectromagnetics 1985; 6:415-425.

Bracken TD, Bailey WH, Charry JM. Evaluation of the DC electrical environment in proximity to VDTs. Journal of Environmental Science and Health Part A 1985; 20:745-780.

Gross SS, Levi R, Bailey WH, Chenouda AA. Histamine modulation of cardiac sympathetic responses: A physiological role. Federation Proceedings 1984; 43:458.

Gross SS, Guo ZG, Levi R, Bailey WH, Chenouda AA. 1984. Release of histamine by sympathetic nerve stimulation in the guinea pig heart and modulation of adrenergic responses. Circulation Research 1984; 54:516-526.

Dahl D, Bailey WH, Winson J. Effect of norepinephrine depletion of hippocampus on neuronal transmission from perforant pathway through dentate gyrus. Journal of Neurophysiology 1983; 49:123-135.

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Pohorecky LA, Newman B, Sun J, Bailey WH. Acute and chronic ethanol injection and serotonin metabolism in rat brain. Journal of Pharmacology and Experimental Therapeutics 1978; 204:424-432.

Koh SD, Vernon M, Bailey WH. Free-recall learning of word lists by prelingual deaf subjects. Journal of Verbal Learning and Verbal Behavior 1971; 10:542-574.

Book Chapters

Cotts B, Graf K, Bailey WH, Murphy P. Electromagnetic interference considerations for electrical power systems. In The Power Grid: Smart, Secure, Green and Reliable. D'Andrade B (ed), Academic Press, New York, NY 2017.

Bailey WH. Principles of risk assessment and their limitations. In: Risk Perception, Risk Communication and its Application to EMF Exposure. Matthes R, Bernhardt JH, Repacholi MH (eds), International Commission on Non-Ionizing Radiation Protection, Oberschleissheim, Germany, 1998.

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Weiss JM, Bailey WH, Goodman PA, Hoffman LJ, Ambrose MJ, Salman S, Charry JM. A model for neurochemical study of depression. pp. 195-223. In: Behavioral Models and the Analysis of Drug Action. Spiegelstein MY, Levy A (eds), Elsevier Scientific, Amsterdam, 1982.

Bailey WH. Mnemonic significance of neurohypophyseal peptides. pp. 787-804. In: Changing Concepts of the Nervous System. Morrison AR, Strick PL (eds), Academic Press, New York, NY, 1981.

Bailey WH, Weiss, JM. Avoidance conditioning and endocrine function in Brattleboro rats. pp 371-395. In: Endogenous Peptides and Learning and Memory Process. Martinez JL, Jensen RA, Messing RB, Rigter H, McGaugh JL (eds), Academic Press, New York, NY, 1981.

Weiss JM, Glazer H, Pohorecky LA, Bailey WH, Schneider L. Coping behavior and stress-induced behavioral depression: Studies of the role of brain catecholamines. pp. 125-160. In: The Psychobiology of the Depressive Disorders: Implications for the Effects of Stress. Depue R (ed), Academic Press, New York, NY, 1979.

Technical 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.

Normandeau, Exponent, Tricas T, Gill A. Effects of EMFs from undersea power cables on elasmobranchs and other marine species. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Regulation, and Enforcement, Pacific OCS Region, Camarillo, CA. OCS Study BOEMRE 2011-09, May 2011.

Jardini JA, et al. Electric field and ion current environment of HVDC overhead transmission lines. Report of Joint Working Group B4/C3/B2.50, CIGRĖ, August 2011.

Johnson GB, Bracken TD, Bailey WH. Charging and transport of aerosols near AC transmission lines: A literature review. EPRI, Palo Alto, CA, 2003.

Bailey WH. Probabilistic approach to ranking sources of uncertainty in ELF magnetic-field exposure limits. In: Evaluation of Occupational Magnetic Exposure Guidelines, Interim Report, EPRI Report TR-111501, 1998.

Bracken TD, Bailey WH, Su SH, Senior RS, Rankin RF. Evaluation of occupational magnetic-field exposure guidelines; Interim Report. EPRI Report TR-108113, 1997.

Bailey WH, Weil DE, Stewart JR. HVDC Power Transmission Environmental Issues Review. Oak Ridge National Laboratory, Oak Ridge, TN, 1996.

Bailey WH. Melatonin responses to EMF. Proceedings, Health Implications of EMF Neural Effects Workshop, Report TR-104327s, EPRI, 1994.

Bailey WH. Recent neurobiological and behavioral research: Overview of the New York State powerlines project. In: Power-Frequency Electric and Magnetic Field Research, EPRI, 1989.

Bailey WH, Bissell M, Dorn CR, Hoppel WA, Sheppard AR, Stebbings, JH. Comments of the MEQB Science Advisors on Electrical Environment Outside the Right of Way of CU-TR-1, Report 5. Science Advisor Reports to the Minnesota Environmental Quality Board, 1986.

Bailey WH, Bissell M, Brambl RM, Dorn CR, Hoppel WA, Sheppard AR, Stebbings JH. A health and safety evaluation of the +/- 400 KV powerline. Science Advisor's Report to the Minnesota Environmental Quality Board, 1982.

Charry JM, Bailey WH, Weiss JM. Critical annotated bibliographical review of air ion effects on biology and behavior. Rockefeller University, New York, NY, 1982.

Bailey WH. Avoidance behavior in rats with hereditary hypothalamic diabetes insipidus. Dissertation, City University of New York, 1975.

Invited Presentations

Chou CK, Petersen R, Foster K, Hirata A, Ziskin M, Reilly JP, Tell R, Faraone A, Klauenberg BJ, Kavet R, Graf K, Cleveland R, Thansandote A, Bushberg J, Bailey W, Osepchuk J, Legros A, Yamazaki K, Bodemann R. Revision of IEEE Standards C95.1-2005 and C95.6-2002. BioEM2018 - Joint Annual Meeting of The Bioelectromagnetics Society and the European BioElectromagnetics Association, Piran, Portorož, Slovenia, June 29, 2018.

Bailey WH. Thresholds for peripheral nerve stimulation by ELF magnetic fields in humans. Presentation at Bundesamt für Strahlenschutz Workshop on Action and Perception Thresholds of Static and ELF Magnetic and Electric Fields and Contact Currents in Humans, Munich, Germany, October 26-27, 2016.

Bailey WH. Update on scientific developments regarding extremely low frequency and radiofrequency fields and health. Committee on Man and Radiation (COMAR) of the IEEE Engineering in Medicine and Biology Society, January 11, 2016.

Bailey WH. Measurements of charged aerosols around DC transmission lines and other locations. International Committee on Electromagnetic Safety TC95/ Subcommittee 3: Safety Levels with Respect to

Human Exposure to Electromagnetic Fields, 0 - 3 kHz, December 2011.

Bailey WH, Erdreich LS. Human sensitivity and variability in response to electromagnetic fields: Implications for standard setting. International Workshop on EMF Dosimetry and Biophysical Aspects Relevant to Setting Exposure Guidelines. International Commission on Non-Ionizing Radiation Protection, Berlin, March 2006.

Bailey WH. Research-based approach to setting electric and magnetic field exposure guidelines (0-3000 Hz). IEEE Committee on Electromagnetic Safety, December 2005.

Bailey WH. Conference Keynote Presentation. Research supporting 50/60 Hz electric and magnetic field exposure guidelines. Canadian Radiation Protection Association, Annual Conference, Winnipeg, June 2005.

Bailey WH. Scientific methodology for assessing public health issues: A case study of EMF. Canadian Radiation Protection Association, Annual Conference, Public Information for Teachers, Winnipeg, June 2005.

Bailey WH. Assessment of potential environmental effects of electromagnetic fields from submarine cables. Connecticut Academy of Science and Engineering, Long Island Sound Bottomlands Symposium: Study of Benthic Habitats, July 2004.

De Santo RS, Coe M, Bailey WH. Environmental justice assessment and the use of GIS tools and methods. National Association of Environmental Professionals, 27th Annual Conference, Dearborn, MI, June 2002.

Bailey WH. Applications to enhance safety: Research to understand and control potential risks. Human Factors and Safety Research, Volpe National Transportation Systems Center/Dutch Ministry of Transport, Cambridge, MA, November 2000.

Bailey WH. EMF health effects review. EMF Exposure Guideline Workshop, Brussels Belgium, June 2000.

Bailey WH. Dealing with uncertainty when formulating guidelines. EMF Exposure Guideline Workshop, Brussels Belgium, June 2000.

Bailey WH. Field parameters: Policy implications. EMF Engineering Review Symposium, Status and Summary of EMF Engineering Research, Charleston, SC, April 1998.

Bailey WH. Principles of risk assessment: Application to current issues. Symposium on EMF Risk Perception and Communication, World Health Organization, Ottawa, Canada, August 1998.

Bailey WH. Current guidelines for occupational exposure to power frequency magnetic fields. EPRI EMF Seminar, New Research Horizons, March 1997.

Bailey WH. Methods to assess potential health risks of cell telephone electromagnetic fields. IBC Conference — Cell Telephones: Is there a Health Risk? Washington, DC, June 1997.

Bailey WH. Principles of risk assessment and their limitations. Symposium on Risk Perception, Risk Communication and its Application to EMF Exposure, International Commission on Non-Ionizing Radiation Protection, Vienna, Austria, October 1997.

Bailey WH. Probabilistic approach for setting guidelines to limit induction effects. IEEE Standards Coordinating Committee 28: Non-Ionizing Radiation, Subcommittee 3 (0-3 kHz), June 1997.

Bailey WH. Power frequency field exposure guidelines. IEEE Standards Coordinating Committee 28: Non-Ionizing Radiation, Subcommittee 3 (0-3 kHz), June 1996.

Bailey WH. Epidemiology and experimental studies. American Industrial Hygiene Conference, Washington, DC, May 1996.

Bailey WH. Review of 60 Hz epidemiology studies. EMF Workshop, Canadian Radiation Protection Association, Ontario, Canada, June 1993.

Bailey WH. Biological and health research on electric and magnetic fields. American Industrial Hygiene Association, Fredrickton, New Brunswick, Canada, October 1992.

Bailey WH. Electromagnetic fields and health. Institute of Electrical and Electronics Engineers, Bethlehem, PA, January 1992.

Bailey WH, Weiss JM. Psychological factors in experimental heart pathology. Visiting Scholar Presentation, National Heart Lung and Blood Institute, Bethesda, MD, March 1977.

Presentations

Williams AI, Bailey WH. Toxicologic assessment of air ion exposures in laboratory animals. Poster presentation at 53rd Annual Meeting of the Society of Toxicology, Phoenix, AZ, March 26, 2014.

Perez V, Alexander DD, Bailey WH. Air ions and mood outcomes: A review and meta-analysis. Poster presentation at the American College of Epidemiology, Chicago, IL, September 8-11, 2012.

Shkolnikov Y, Bailey WH. Electromagnetic interference and exposure from household wireless networks. Product Safety Engineering Society Meeting, San Diego, CA, October 2011.

Nestler E, Trichas T, Pembroke A, Bailey W. Will undersea power cables from offshore wind projects affect sharks? North American Offshore Wind Conference & Exhibition, Atlantic City, NJ, October 2010.

Nestler E, Pembroke A, Bailey W. Effects of EMFs from undersea power lines on marine species. Energy Ocean International, Ft. Lauderdale, FL, June 2010.

Pembroke A, Bailey W. Effects of EMFs from undersea power cables on elasmobranchs and other marine species. Windpower 2010 Conference and Exhibition, Dallas, TX, 2010.

Bailey WH. Clarifying the neurological basis for ELF guidelines. Workshop on Practical Implementation of ELF and RF Guidelines. The Bioelectromagnetics Society 29th Annual Meeting, Kanazawa, Japan, June 2007.

Sun B, Urban B, Bailey W. AERMOD simulation of near-field dispersion of natural gas plume from accidental pipeline rupture. Air and Waste Management Association: Health Environments: Rebirth and Renewal, New Orleans, LA, June 2006.

Bailey WH, Johnson G, Bracken TD. Method for measuring charge on aerosol particles near AC transmission lines. Joint Meeting of The Bioelectromagnetics Society and The European BioElectromagnetics Association, Dublin Ireland, June 2005.

Bailey WH, Bracken TD, Senior RS. Long-term monitoring of static electric field and space charge near AC transmission Lines. The Bioelectromagnetics Society, 26th Annual Meeting, Washington, DC, June 2004.

Bailey WH, Erdreich L, Waller L, Mariano K. Childhood leukemia in relation to 25-Hz and 60-Hz magnetic

fields along the Washington DC — Boston rail line. Society for Epidemiologic Research, 35th Annual Meeting, Palm Desert CA, June 2002. American Journal of Epidemiology 2002; 155:S38.

Erdreich L, Klauenberg BJ, Bailey WH, Murphy MR. Comparing radiofrequency standards around the world. Health Physics Society 43rd Annual Meeting, Minneapolis, MN, July 1998.

Bracken TD, Senior RS, Rankin RF, Bailey WH, Kavet R. Relevance of occupational guidelines to utility worker magnetic-field exposures. Second World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, June 1997.

Weil DE, Erdreich LS, Bailey WH. Are 60-Hz magnetic fields cancer causing agents? Mechanisms and Prevention of Environmentally Caused Cancers, The Lovelace Institutes 1995 Annual Symposium, La Fonda, Santa Fe, NM, October 1995.

Bailey WH. Neurobiological research on extremely-low-frequency electric and magnetic fields: A review to guide future research. Sixteenth Annual Meeting of the Bioelectromagnetics Society, Copenhagen, Denmark, June 1994.

Blondin J-P, Nguyen D-H, Sbeghen J, Maruvada PS, Plante M, Bailey WH, Goulet D. The perception of DC electric fields and ion currents in human observers. Annual Meeting of the Canadian Psychological Association, Penticton, British Columbia, Canada, June 1994.

Erdreich LS, Bailey WH, Weil DE. Science, standards and public policy challenges for ELF fields. American Public Health Association 122nd Annual Meeting, Washington, DC, October 1994.

Bailey WH, Charry JM. Particle deposition on simulated VDT operators: Influence of DC electric fields. 10th Annual Meeting of the Bioelectromagnetics Society, June 1988.

Charry JM, Bailey WH. Contribution of charge on VDTs and simulated VDT operators to DC electric fields at facial surfaces. 10th Annual Meeting of the Bioelectromagnetics Society, June 1988.

Bailey WH, Charry, JM. Dosimetric response of rats to small air ions: Importance of relative humidity. EPRI/DOE Contractors Review, November 1986. Charry JM, Bailey WH, Bracken TD (eds). DC electric fields, air ions and respirable particulate levels in proximity to VDTs. International Conference on VDTs and Health, Stockholm, Sweden, June 12-15 1986.

Charry JM, Bailey WH. Air ion and DC field strengths at 10^4 ions/cm^3 in the Rockefeller University Small Animal Exposure Chambers. EPRI/DOE Contractors Review, November 1985.

Charry JM, Bailey WH. DC Electrical environment in proximity to VDTs. 7th Annual Meeting of the Bioelectromagnetics Society, June 1985.

Bailey WH, Collins RL, Lahita RG. Cerebral lateralization: Association with serum antibodies to DNA in selected bred mouse lines. Society for Neuroscience, 1985.

Kavet R, Bailey WH, Charry JM. Respiratory neuroendocrine cells: A plausible site for air ion effects. Seventh Annual Meeting of The Bioelectromagnetics Society, June 1985.

Bailey WH, Charry JM. Measurement of neurotransmitter release and utilization in selected brain regions of rats exposed to DC electric fields and atmospheric space charge. 23rd Hanford Life Sciences Symposium, Richland, WA, October 1984.

Bailey WH, Charry JM, Weiss JM, Cardle K, Shapiro M. Regional analysis of biogenic amine turnover in rat brain after exposure to electrically charged air molecules (air ions). Society for Neuroscience, 1983.

Bailey WH. Biological effects of air ions: Fact and fancy. American Institute of Medical Climatology Conference on Environmental Ions and Related Biological Effects, October 1982.

Goodman PA, Weiss JM, Hoffman LJ, Ambrose MJ, Bailey WH, Charry, JM. Reversal of behavioral depression by infusion of an A2 adrenergic agonist into the locus coeruleus. Society for Neuroscience, November 1982.

Charry JM, Bailey WH. Biochemical and behavioral effects of small air ions. Electric Power Research Institute Workshop, April 1981.

Bailey WH, Alsonso DR, Weiss JM, Chin S. Predictability: A psychologic/ behavioral variable affecting stress-induced myocardial pathology in the rat. Society for Neuroscience, November 1980.

Salman SL, Weiss JM, Bailey WH, Joh TH. Relationship between endogenous brain tyrosine hydroxylase and social behavior of rats. Society of Neuroscience, November 1980.

Bailey WH, Maclusky S. Appearance of creatine kinase isoenzymes in rat plasma following myocardial injury produced by isoproterenol. Fed Assoc Soc Exp Biol, April 1978.

Bailey WH, Maclusky S. Appearance of creatine kinase isoenzymes in rat plasma following myocardial injury by isoproterenol. Fed Proc 1978; 37:889.

Bailey WH, Weiss JM. Effect of ACTH 4-10 on passive avoidance of rats lacking vasopressin (Brattleboro strain). Eastern Psychological Association, April 1976.

Advisory Appointments

National Institute of Environmental Health Sciences, National Toxicology Program, Participation in research study to update Level of Concern categories to better integrate evidence for toxicity and extent of human exposure, 2017

Bundesamt für Strahlenschutz - Federal Office for Radiation Protection. Summarize recent research and recommend research direction on magnetic field stimulation of peripheral nerves, 2016

Federal Office for Radiation Protection - Germany, Technical input to assessment of static and ELF exposures to public from updating national transmission network, 2016

RWTH Aachen University. Workshop on human perception thresholds in static electric fields from high-voltage direct current (HVDC) transmission lines, 2015

ZonMw - Netherlands Organization for Health Research and Development, 2012; 2007-2008, reviewer for National Programme on EMF and Health

US Bureau of Ocean Energy Management, Regulation and Enforcement, 2009-2010

Canadian National Collaborating Centre for Environmental Health, reviewer of Centre reports, 2008

Island Regulatory and Appeals Commission, province of Prince Edward Island, Canada, 2008

National Institute of Environmental Health Sciences/ National Institutes of Health, Review Committee, Neurotoxicology, Superfund Hazardous Substances Basic Research and Training Program, 2004

National Institute of Environmental Health Sciences, Review Committee Role of Air Pollutants in Cardiovascular Disease, 2004

Working Group on Non-Ionizing Radiation, Static and Extremely Low-Frequency Electromagnetic Fields, International Agency for Research on Cancer, 2000-2002

Working Group, EMF Risk Perception and Communication, World Health Organization, 1998-2005

Member, International Committee on Electromagnetic Safety, Subcommittee 3 - Safety Levels with Respect to Human Exposure to Fields (0 to 3 kHz) and Subcommittee 4 - Safety Levels with Respect to Human Exposure (3kHz to 3GHz), Institute of Electrical and Electronics Engineers (IEEE), 1996-present

Invited participant, National Institute of Environmental Health Sciences, EMF Science Review Symposium: Clinical and In Vivo Laboratory Findings, 1998

Working Group, EMF Risk Perception and Communication, International Commission on Non-Ionizing Radiation Protection, 1997

U.S. Department of Energy, RAPID EMF Engineering Review, 1997

Oak Ridge National Laboratory, 1996

American Arbitration Association International Center for Dispute Resolution, 1995-1996

U.S. Department of Energy, 1995

National Institute for Occupational Safety and Health, 1994-1995

Federal Rail Administration, 1993-1996

U.S. Forest Service, 1993

New York State Department of Environmental Conservation, 1993

National Science Foundation

National Institutes of Health, Special Study Section — Electromagnetics, 1991-1993

Maryland Public Service Commission and Maryland Department of Natural Resources, Scientific Advisor on health issues pertaining to HVAC Transmission Lines, 1988-1989

Scientific advisor on biological aspects of electromagnetic fields, Electric Power Research Institute, Palo Alto, CA, 1985-1989

U.S. Public Health Service, NIMH: Psychopharmacology and Neuropsychology Review Committee, 1984

Consultant on biochemical analysis, Colgan Institute of Nutritional Science, Carlsbad, CA, 1982-1983

Behavioral Medicine Abstracts, Editor, animal behavior and physiology, 1981-1983

Consultant on biological and behavioral effects of high-voltage DC transmission lines, Vermont Department of Public Service, Montpelier, VT, 1981-1982

Scientific advisory committee on health and safety effects of a high-voltage DC transmission line, Minnesota Environmental Quality Board, St. Paul, MN, 1981-1982

Consultant on biochemical diagnostics, Biokinetix Corp., Stamford, CT, 1978-1980

Editorships & Editorial Review Boards

Associate Editor, Non-Ionizing Radiation, Health Physics, 1996-present

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Drew Carey

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
DREW CAREY
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Drew A. Carey.

Q. Please state the name of your employer and its business address.

A. I am employed by INSPIRE Environmental, which has a business address of 513 Broadway, Newport, Rhode Island 02840.

Q. In what capacity are you employed?

A. I am the Chief Executive Officer and Principal Scientist.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I am a benthic ecologist and marine geologist with over 30 years' experience in marine environmental assessment in New England waters. This work includes mapping and evaluation of sediment and biological conditions of the seafloor in relation to human uses and activities. I received a Ph.D in Geology and Marine Ecology from the University of St. Andrews (Scotland) in 1983. My work involved ecological and geological assessment of a nearshore benthic community in the subtidal portion of a beach in the east of Scotland. I then conducted research in Long Island Sound, Buzzards Bay and the Gulf of Maine and taught Oceanography, Marine Ecology, and Coastal Geology at Wesleyan University. In 1991 I began a career in applied environmental assessment with a focus on the

effects of physical and ecological disturbance of seafloor resources. This work led to starting a number of successful small businesses culminating in INSPIRE Environmental where I continue this work.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I supervised and conducted final scientific review of the Benthic Resources Survey Report – NYS.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-G (Benthic Resources Characterization Report – New York State Waters)

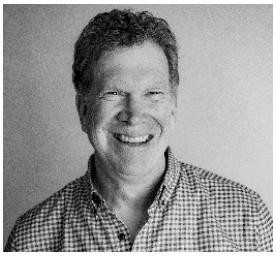
Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

513 Broadway, Suite 314 | Newport, RI 02840 | (401) 608-6585
drew@INSPIREenvironmental.com



DREW CAREY | Chief Executive Officer

Education
Ph.D, Geology and Marine Ecology, University of St. Andrews, Scotland, 1983
B.Sc., Geology and Biological Oceanography, The Evergreen State College, 1976

Areas of Specialization
Sediment Profile Imaging
Benthic Ecology/Sedimentology
Environmental Monitoring
Marine Policy
Statistics & Sampling Design
Contaminated Sediment Management
Dredged Material Management & Monitoring
Confined Aquatic Disposal Management
Environmental Impact Assessment
Ecological Risk Assessment
Environmental Mediation

Professional Affiliations
American Society of Limnology and Oceanography
Marine Technology Society
American Association of Petroleum Geologists
Geological Society of America
Coastal and Estuarine Research Federation
Western Dredging Association

Employment History
2018-present – CEO, INSPIRE Environmental
2015-2018 - Managing Partner, INSPIRE Environmental, LLC, Newport, RI
2004-2016 - Managing Partner, DAMOSVision, Newport, RI
1999-2015 - Founding Partner and Principal Scientist, CoastalVision, LLC, Newport, RI
1991-1999 – Senior Scientist and Program Manager, Science Applications International Corporation, Newport, RI
1982-1989 – Assistant Professor, Earth & Environmental Sciences and Science in Society, Wesleyan University, Middletown, CT
1982 - Research Associate, Marine Sciences Research Center, SUNY, at Stony Brook
1977 - Survey Associate, Department of Agriculture and Fisheries, Aberdeen, Scotland

EXPERIENCE SUMMARY

Dr. Carey is an international expert in the assessment of environmental impacts on marine ecosystems. Dr. Carey specializes in benthic ecology, sedimentology, fisheries monitoring, and marine policy. Dr. Carey has led coastal assessments and data collection in nearshore and deep-water environments worldwide for over 30 years. He has extensive experience in benthic seafloor characterization, preparation of Construction and Operation Plans and monitoring for offshore wind energy projects. He has served as a senior technical lead for marine assessments (benthic, EFH, fish, lobster, geological) for nine offshore wind projects in the United States, including Block Island Wind, South Fork Wind, Skipjack Wind, Bay State Wind, Ocean Wind, Sunrise Wind, and Revolution Wind for Ørsted U.S.; Empire State for Equinor, and the NYSERDA Master Plan.

Dr. Carey is an expert in design and interpretation of marine habitat mapping. He has led over 50 projects in New England that integrate high resolution acoustic mapping (multibeam, side-scan sonar, subbottom profiling) with innovative ground-truth data collection (SPI/PV imaging) to provide physical and biological habitat information. He led an assessment of habitat classification schemes for the Northeast Regional Ocean Council (NROC) and helped develop CMECS (2012). This broad experience with habitat assessment and knowledge of the geological and biological conditions in NE Atlantic waters led directly to INSPIRE's successful approach to EFH habitat mapping for South Fork Wind, RevWind, Skipjack Wind, and Ocean Wind.

Dr. Carey has extensive familiarity with stakeholder engagement and management programs, recently applying his expertise to the Block Island Wind Farm and South Fork Wind public engagement. He led the development of a 10-year planning document for the Long Island Sound Study: Sound Vision and leading the revision of the Long Island Sound Comprehensive Conservation and Management Plan. Dr. Carey provided facilitation for the Narragansett Bay Summit, the Partnership for Narragansett Bay, the 2007 National Estuary Program national meeting and the 2004 RI Sea Grant Science Symposium. He was a senior technical lead for the Dredged Material Disposal Site Designation EIS in Long Island Sound, supporting the Corps of Engineers and EPA. He is the program manager for the Disposal Area Monitoring System (DAMOS), the Historic Area Remediation Site (HARS) and the facilitator for the New England Regional Dredging Team since 2005.

Prior to INSPIRE, Dr. Carey formed CoastalVision, LLC, the Joint Ventures DAMOSVision and WaterVision and collaborated with Germano & Associates on marine assessments. Prior to CoastalVision, Dr. Carey was a Senior Scientist at Science Applications International Corporation (SAIC) from 1991-1999. Dr. Carey prepared technical documents, led database development, presented results at public meetings, and designed and managed monitoring activities and field investigations of marine dredged material and waste disposal sites for environmental assessment of coastal areas. He led business development for an innovative ocean imaging instrument (Laser Line Scan System) and received a public service award for his work on surveying after the TWA Flight 800 crash. Prior to SAIC, Dr. Carey was an Assistant Professor at Wesleyan University where he conducted scientific research on marine ecology, sediment transport and developed a curriculum in Marine Ecology, Coastal Geology, Ocean Policy, Law of the Sea, and Ocean Resources.

PROFESSIONAL EXPERIENCE

Dr. Carey is a Senior Technical Advisor for Marine Environmental Permitting for **Ørsted U.S.**'s Block Island Wind, South Fork Wind, Skipjack Wind, Bay State Wind, Ocean Wind, Sunrise Wind, and Revolution Wind. Dr. Carey has supported the development of the Marine Work Plans, permitting strategies and designed and conducted numerous technical studies including benthic seafloor characterization surveys, EFH habitat mapping, cable routing, eelgrass survey, hardbottom habitats, finfish trawl surveys, lobster surveys, EMF measurement, suspended sediment impacts from cable installation, geophysical desktop studies, fisheries data collection and NEPA documentation. Dr. Carey collaborated with marine archeologists presenting seafloor mapping and seismic data to representatives of Native tribes, commercial fishermen and stakeholders.
Dr. Carey was the Program Manager and Senior Technical lead for assessment and remediation support to **Trident Seafoods**, the world's largest seafood processor. For Trident, Dr. Carey managed SPI, acoustic, coring and hydrodynamic studies of seafood waste deposits in Alaska.

Dr. Carey was a Senior Technical Advisor for **Atlantic Wind Connection's** effort to install a submarine cable system to provide a backbone transmission line for the mid-Atlantic states. Dr. Carey conducted desktop geological and benthic resource studies, designed benthic habitat surveys and contributed to cable routing design.

Dr. Carey has been a Senior Technical lead for a wide variety of site assessment projects including baseline environmental surveys of oil and gas leases in the Gulf of Mexico, RI/FS investigations in San Francisco Bay, Melbourne, Australia, River Clyde, Scotland, Hudson River, and Ontario, Canada.

From 1991-1999 and 2005- present, Dr. Carey has served as the technical and program manager of the Disposal Area Monitoring System (DAMOS) Program of the New England District of the U.S. Army Corps of Engineers. He successfully managed over 75 work orders and delivered 150 reports as final or draft products. He is currently the technical studies manager, responsible for oversight of project design and data interpretation of dredged material disposal site investigations.

For the DAMOS Program, Dr. Carey developed expertise in designing and managing monitoring of dredged material disposal sites. Dr. Carey managed all of SAIC's activities in the DAMOS Program including field data collection, data analysis, report preparation, technical support, and public outreach. His efforts led to the first demonstration of the Laser Line Scan System for an environmental application and leadership on the development of UV-Hyperspectral imaging. His expertise in dredged material management includes monitoring of open-water sites, in-channel Confined Aquatic Disposal (CAD) cells, design and evaluation of cap integrity, and assessment of potential environmental impacts of disposal site placement.

From 1991 to the present, Dr. Carey has served as a technical manager supporting EPA New England and New York, the New England and New York Districts of the Army Corps of Engineers, on issues related to environmental assessment. He has provided services to develop NEPA sampling design for sediment, lobsters, finfish and fishing activities, Quality Assurance Project Plans (QAPP), public outreach and GIS data management. He authored reports on finfish resource and fishing activities. He led a bioturbation workshop for the NY District that developed a clear consensus among a regional scientific panel on the impact of biological activity on dredged

material placement. He has served as the Program Manager for the New York District's monitoring of the HARS site since 2010 including acoustic, geochemical and biological characterization of the seafloor at the site.

Dr. Carey led a team that supported the Long Island Sound Study revision of the 1994 Comprehensive Conservation and Management Plan (CCMP) for Long Island Sound. The themes and principles developed in the SoundVision project were the starting point for this legally-binding plan development.

Dr. Carey led the analysis of SPI data for habitat mapping of the Milford Haven Waterway, Wales, UK. The study established a protocol for utilization of SPI data to conduct habitat mapping with facies models in nearshore environments and apply those results to the EUNIS habitat classification scheme (Carey et al., 2014).

Dr. Carey led a team that supported the Habitat Working Group of NROC to evaluate the feasibility of coordinating habitat mapping initiatives in New England. CoastalVision developed a framework, an inventory of initiatives and successfully integrated the results into a creative visual synthesis to inform managers and scientists of the common ground between initiatives (Shumchenia et al., 2014).

Dr. Carey worked with Connecticut Fund for the Environment and Save the Sound to review fifteen years of program activities and budget allocations of the Long Island Sound Study (LISS) and develop a series of workshops to lead the LISS Citizens Advisory Committee in the development of a SoundVision Five Year Strategic Plan. Dr. Carey facilitated workshops and discussions and co-drafted the Strategic Plan. This process produced a final synthesis based on input from a wide range of participants that includes a set of integrated goals with desired results, steps to achieve those results, as well as an outreach strategy that can be implemented by all participating stakeholder groups.

Dr. Carey led an effort to conduct a habitat classification feasibility study for the Massachusetts Office of Coastal Zone Management. The team performed GIS-based analysis of several large benthic datasets, helped to develop habitat digitizer tools, performed benthic habitat classifications under each of four different classification schemes, and authored a project report. The following three objectives were met in this project: 1) apply each of four pre-selected habitat classification frameworks to the coastal and ocean environment in northern Massachusetts, 2) evaluate the relative strengths and weaknesses of each framework, and 3) make recommendations on the adoption of a framework for Massachusetts that will be useful to resource managers, stakeholders and scientists.

Dr. Carey has been the facilitator for the New England Regional Dredging Team since 2005 and facilitated several sessions of the National Dredging Team meetings in May 2006 and October 2007. Dr. Carey was a co-facilitator for the 2006 USEPA/USACE "Managing Sediments in the Watershed Workshop" in Portland, OR. He worked with a team of eight professional facilitators to develop breakout session designs, facilitated plenary sessions and supervised the facilitation team.

Dr. Carey facilitated the 2004 RI Sea Grant Science Symposium and edited a synthesis of the State of Science on Nutrients in Narragansett Bay (Carey et al., 2005).

Dr. Carey conducted two assessments of human uses and resource distribution in Buzzards Bay for Massachusetts Coastal Zone Management (Carey and Haley, 2002; Colburn, Carey and Haley, 2002). One study involved developing a database, GIS data layers and PDF maps from inshore trawl data and the other study involved developing a survey instrument and conducting a survey of recreational and commercial fishing use of Buzzards Bay.

Dr. Carey supported Germano & Associates and the Dredged Material Management Office (DMMO) of San Francisco in their effort to conduct a performance evaluation of sediment screening guidelines for wetland restoration in San Francisco Bay. He led workshops, facilitated meetings and provided expert review of the design and development of a database and statistical assessment of sediment screening guidelines based on dredged material test results (Germano & Associates, 2004).

Dr. Carey supported NOAA Fisheries to develop a manual of procedures employed by Northeast Regional staff to review proposed dredging and dredged material disposal projects. The manual is intended to help streamline the process of review by providing internal guidance and external awareness of the review process and best management practices employed to minimize impacts on protected fisheries resources.

Dr. Carey supported the State of Connecticut in the development of a Dredged Material Management Plan (DMMP) through compilation and review of the current state of regulations and practice of dredged material management, assessment of alternatives to open-water disposal and definition of research needs. This effort involved review of CWA and MPRSA criteria and requirements as they apply to disposal in Long Island Sound and recommendations for the process to develop a DMMP (Carey, 1998).

Dr. Carey supported Germano and Associates and the U.S. Army Engineer Research and Development Center (ERDC) Coastal Ecology group to develop guidelines for measurement of rates and effects of dredging-induced sedimentation on early life stages of fish, shellfish and submerged aquatic vegetation (Germano and Carey, 2005).

Dr. Carey was responsible for all aquatic disposal site determinations for the Massachusetts Coastal Zone Management Dredged Material Management Plan. Dr. Carey supported the Maguire Group in designation of the Buzzard's Bay Disposal Site Environmental Impact Report, Data Management and Aquatic Disposal Alternatives for Salem, Gloucester, New Bedford and Fall River Designated Port Authorities. This involves 404(b)(1) guidance for disposal site selection and analysis of all available environmental information including detailed analysis of potential fisheries impacts. Dr. Carey designed and led public workshops and team screening meetings on aquatic site selection.

Dr. Carey directed a disposal site evaluation process for the Coastal Resource Management Council of Rhode Island (CRMC). The CRMC is charged with designating disposal sites in Narragansett Bay to receive clean dredged material from marinas and yacht clubs. The effort included field studies and data review based on 404(b)(1) guidelines and an assessment of the potential biological and physical oceanographic implication for disposal at two proposed sites in Narragansett Bay. He supported CRMC in development of a scope and technical review of the hydrographic data collection and circulation modeling study of Quonset and Davisville channels for potential deepening (Berger/Maguire 2004).

Dr. Carey supported EVS Environment Consultants on the development of the Massachusetts Ocean Resources Information System (MORIS) for Massachusetts Coastal Zone Management. He was responsible for identification of aquaculture and other MORIS-related data sources and local coordination with industry and academic participants.

Dr. Carey teamed with Fara Courtney to develop an inventory and metadata database of human resources and management considerations for a Gloucester Harbor Resource Characterization for Massachusetts Coastal Zone Management. He was responsible for the database development and metadata structure.

Dr. Carey supported the Governors' Stakeholder Committee on Port Development of Quonset Point, RI. Working with MIDI, Normandeau Associates and Applied Sciences Associates, he prepared material on dredging requirements and disposal options for various port development proposals. Dr. Carey worked on a team that provided information on potential environmental impacts of designs developed by the stakeholders committee and made presentations to the committee on several related subjects including fisheries impacts.

Dr. Carey directed post-processing of Laser Line Scan Images collected in support of the US Navy's efforts to locate and identify debris and remains from the TWA Flight 800 crash investigation. His efforts led to the development of an innovative GIS-based database with a simple point-and-click interface. Dr. Carey served as press liaison for SAIC during the TWA flight investigation. Dr. Carey and his team were presented with "Award for Excellence in Public Service Crystal Eagle" from SAIC for their work (Saade and Carey 1996).

For EPA Region I and ERL-N, Dr. Carey designed and directed two surveys of historical waste container disposal sites in Massachusetts Bay. Each survey integrated a precision navigation system with side-scan sonar and remotely operated vehicles (ROV) to locate, categorize, and inspect hazardous and low-level waste containers. He developed Quality Assurance documents, technical documents, and presented results at public meetings including one of the first publications of the use of GIS in seafloor studies (Carey et al. 1992).

For a US AID-sponsored program in Tunisia in 1995, Dr. Carey developed and directed a field demonstration of advanced survey technologies for ecological assessment of the Gulf of Gabes, Tunisia. Dr. Carey made public presentations of the results in Tunisia and led the development of a proposed program for the improved planning and management of the Tunisian coastal zone. He has also served as a technical liaison for survey efforts in Hong Kong, Italy and New Zealand.

From 1989 to 1990 Dr. Carey managed and developed programs in science education at the Thames Science Center. He led development of innovative software, data collection, and research management programs designed to promote environmental education. He co-wrote five proposals and managed two NSF-sponsored projects. He is an experienced project manager with excellent personnel and communication skills.

Between 1982 and 1989 Dr. Carey was Assistant Professor of Earth & Environmental Sciences and Science in Society at Wesleyan University. During his seven years teaching and conducting research at Wesleyan University, Dr. Carey developed an advanced seminar in ocean policy and law of the sea including case studies of hearings on the New York Bight, Long Island Sound, Georges Bank, and the Gulf of Maine. His scientific investigations identified potential complications in surveys for chlorinated hydrocarbons, demonstrated high nitrogen uptake in bulk deposit-feeders, and helped pioneer the study of animal-flow interactions.

From June 1985 to August 1986 and from January 1987 to August 1987 Dr. Carey was a Guest Investigator in the Coastal Research Center and Chemistry Department of the Woods Hole Oceanographic Institution. He investigated bioaccumulation of polyaromatic hydrocarbons in deposit-feeding enteropneusts. Dr. Carey developed a protocol for assessing differential uptake of combusted hydrocarbons versus weathered hydrocarbons and investigated mixed function oxygenase activity in enteropneusts. After conducting GC-MS analysis of organic extractions from sediments and tissues, he identified potential complications for analysis of polychlorinated hydrocarbons (Carey and Farrington, 1989).

In 1982, Dr. Carey teamed with scientists at the Marine Sciences Research Center, SUNY at Stony Brook to develop experimental investigation of the impact of resuspended sediments in Long Island Sound on bivalve growth and physiology. He worked with Dr. Rhoads, Yale University, to develop innovative experimental chambers to assess environmental conditions in Long Island Sound.

Dr. Carey designed and led an underwater ecological survey in 1979 of the Isle of May, Scotland, for the Nature Conservancy Council, Scotland. He led a 4-member scuba team for a two-week intensive *in situ* observation and quantitative baseline ecological assessment.

In 1977 Dr. Carey served as a Survey Associate for the Department of Agriculture and Fisheries, Scotland, for a deep-sea benthic survey, Wyville-Thompson Ridge. He was responsible for managing all aspects of benthic sampling design, sample collection, and preliminary identification. The survey was successfully conducted under extreme weather conditions in the North Sea requiring careful coordination of equipment and staff.

In 1976 Dr. Carey surveyed the benthic communities in St. Andrews Bay, Scotland revising community structure maps and discovering several taxonomic groups previously unreported from the area (hemichordata, phoronida and aplacophora).

EXPERT TESTIMONY

Dr. Carey has provided expert testimony, both written and in person for several clients including:

Ørsted U.S. 2019-2020. South Fork Wind Article VII Settlement
Dr. Carey provided testimony on potential benthic, finfish and shellfish effects of installation of a submerged export cable from the South Fork Wind project to potential landings on Long Island, New York. He prepared responses to requests for information and a benthic monitoring plan as part of the Joint Proposal for the Settlement.

Save the Sound 2006-7. Broadwater Energy LLC, Testimony to FERC and NY DOS.
Dr. Carey reviewed the Broadwater LNG Project Draft Environmental Impact Statement and Resource Reports for Save the Sound. Review included preparation of expert testimony for the FERC docket and for the State of New York CZMA Consistency determination. He supported Save the Sound staff in review of all applicable federal and state laws and regulations and participated in a briefing of New York Department of State. Dr. Carey reviewed all of the resource reports relevant to the environmental analysis (geological, biological, threatened and endangered species, cumulative impacts and alternatives). He documented numerous problems with the document, conducted an alternatives analysis and identified several viable alternatives that were not considered in the DEIS which led to the denial of the project by NYDOS on Coastal Consistency grounds.

Office of the Governor of Rhode Island 2003. Channel Deepening, Quonset, Rhode Island
Dr. Carey was asked by the Governor's Office to provide expert review and guidance on a project proposal to deepen the channel to Quonset Point. The state was concerned that circulation in the environmentally sensitive areas surrounding the channel might be affected by changes in channel geometry. Dr. Carey led a panel of federal and state agencies that developed and reviewed a work plan to collect oceanographic data and conduct circulation modeling to assess the potential changes in circulation. The Governor's office requested that Dr. Carey manage and review the contractor's efforts and produce a report evaluating the results. The oceanographic results were used in conjunction with Mt. Hope Bay results to evaluate conditions that led to a fish kill in Greenwich Bay.

Private Client 2001-2. Shoreline Protection
Dr. Carey worked with a private client to prepare a Category B Assent for shoreline protection and improvement on a private island in Narragansett Bay for submission to the Coastal Resource Management Council of Rhode Island (CRMC). Dr. Carey evaluated storm surge potential and the geological context of the island. The successful approach provided a novel method to re-use and augment existing shore materials to provide a naturalistic shore protection system. Dr. Carey provide expert witness testimony for the successful CRMC hearing.

Cummings and Lockwood 2000. Cross Sound Electric Cable, Testimony before Connecticut Energy Siting Board.
Dr. Carey prepared expert testimony based on review of environmental assessment documents prepared to support an application to route an underwater electric cable across Long Island Sound. Dr. Carey's testimony reviewed scientific data and technical reports related to jet plow cable placement and burial on benthic resources including oysters. He reviewed the geological and biological resource reports associated with the application and provided detailed expert review and assessment of the adequacy of the data and consideration of alternative cable routes. The client reached an out of the hearing settlement with the applicant.

Port Development Environmental Assessment, Governors' Stakeholder Committee on Port Development of Quonset Point, RI. 1998-1999. Dr. Carey prepared material on dredging requirements and disposal options for various port development proposals. He worked on potential environmental impacts and potential habitat mitigation of designs developed by the stakeholders committee and provided expert witness presentations to the committee on several related subjects including geological and fisheries impacts.

WORKSHOPS

Teacher, Environmental Forensics: Urban Ports & Harbors – Sediment Assessments in Complex Systems, International Society of Environmental Forensics Workshop, Baltimore, MD, September 26-27, 2006

Teacher, Environmental Forensics: Focus on Harbors and Sediment Assessments, International Society of Environmental Forensics Workshop, Honolulu, HI, April 20-21, 2006

Leader, Café Conversation: Mapping for Managers: Bridging the Gap Between Data and Information, Presented at: Coastal Zone 09, Boston, MA, July 19-23, 2009

Co-Leader, Short Course: Aquatic Site Characterization: Survey Methods, Sampling Techniques, & Limitations, Presented at Dredging 2012, San Diego, CA, October 22, 2012

State of the Science: Wildlife and Offshore Wind Energy Development. November 13-14, 2018, Woodbury, NY. Presented results of BIWF demersal trawl and ventless trap studies; panel on fish habitats.

Synthesis of the Science: Offshore Wind and Fisheries. October 13, 14, 15, 30, 2020. Panel and Breakouts on Benthic Habitats and Demersal Finfish and Shellfish. RODA/NOAA/BOEM. Online.

State of the Science: Wildlife and Offshore Wind Energy Development. November 16-20, 2020, online. Benthic habitats.

SELECTED PUBLICATIONS AND REPORTS

Carey, D.A., D. H. Wilber, L.B. Read, M.L. Guarinello, M. Griffin, S. Sabo. 2020. Effects of Block Island Wind Farm on Coastal Resources: Lessons Learned. Oceanography Special Issue *Understanding the Effects of Offshore Wind Energy Development on Fisheries*.

Degraer S., D.A. Carey, J. Coolen, Z. Hutchison, F. Kerckhof, B. Rumes, J. Vanaverbeke. 2020. Offshore wind farms as Artificial Reefs. Oceanography Special Issue *Understanding the Effects of Offshore Wind Energy Development on Fisheries*.

Guarinello, M.L. and D.A. Carey 2020. Methodologies for assessing moraine habitats for offshore wind construction developed at the Block Island Wind Farm. *Estuaries and Coasts*. https://doi.org/10.1007/s12237-020-00818-w.

Wilber, D. H., Read, L.B., Griffin M., and D.A. Carey. 2020. Block Island Wind Farm Demersal Fish Trawl Survey, Synthesis Report – Years 1 to 6, October 2012 through September 2018. Prepared by INSPIRE Environmental, Newport, RI for Deepwater Wind Block Island, LLC, Providence, RI. 182 pp.

Wilber, D. H., Read, L.B., Griffin M., and D.A. Carey. 2020. Block Island Wind Farm Ventless Trap Lobster Survey Synthesis Report 2013-2018. Prepared by INSPIRE Environmental, Newport, RI for Deepwater Wind Block Island, LLC, Providence, RI. 62 pp. + Appendices

Sabo, S., Murphy, A., and D. Carey. 2020. Block Island Wind Farm Recreational Boating Survey Post-Construction Year 2019 Annual Report and Project Synthesis. Prepared by INSPIRE Environmental, Newport, RI for Deepwater Wind Block Island, LLC, Providence, RI. 43 pp. + Appendices.

Carey, D.A., D.F. Doolittle, and K. Smith. 2019. Forward Scouting: Use of Sediment Profile Imaging in Conjunction with Multibeam Echosounder Mapping for Offshore Wind Cable Routes and Site Characterization. Offshore Technology Conference, Houston TX, 6-9, May 2019. 8 pp.

INSPIRE Environmental. 2018. Ichthyoplankton and Zooplankton Assessment– Jet Plow Entrainment Report. Prepared for CH2M and Deepwater Wind South Fork, LLC. Submitted April 2018.

INSPIRE Environmental. 2018. Sediment Profile Imaging and Benthic Survey Report in Support of the Fugro South Fork Wind Farm and Export Cable, South Fork COP Survey. Prepared for Fugro Marine GeoServices, Inc. and Deepwater Wind South Fork, LLC. Submitted January 2018.

Griffin, M., L. Reed, and D.A. Carey. 2018. Block Island Wind Farm Ventless Trap Lobster Survey Annual Report, May through October 2017. Prepared by INSPIRE Environmental, Middletown, RI. Prepared for Deepwater Wind Block Island, LLC, Providence, RI, 56 pp.

Wilber, D., D.A. Carey, and M. Griffin. 2018. Flatfish habitat use near North America's first offshore wind farm. Journal of Sea Research, 139: 24-32.

INSPIRE Environmental. 2017. Pre-Construction Sediment Profile and Plan View Imaging Benthic Assessment Report. Prepared by INSPIRE Environmental, Middletown, RI. Prepared for CH2M and Deepwater Wind South Fork, LLC, Providence, RI, 58 pp + Appendices. Submitted February 2018.

Wilber, D., D.A. Carey, L. Read, and M. Griffin. 2017. Block Island Wind Farm Demersal Fish Trawl Survey Annual Report, October 2015 through September 2016. Prepared by INSPIRE Environmental, Middletown, RI. Prepared for Deepwater Wind Block Island, LLC, Providence, RI, 102 pp.

Guarinello, M., D. Carey, and L. Read. 2017. Hard Bottom Post-Construction Surveys, Year 1 Draft Report. Year 1 Report for 2016 Summer Post-Construction Surveys to Characterize Potential Impacts and Response of Hard Bottom Habitats to Anchor Placement at the Block Island Wind Farm (BIWF). Prepared by INSPIRE Environmental, Middletown, RI. Prepared for Deepwater Wind Block Island, LLC, Providence, RI, 29 pp.

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Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of John Case

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
JOHN CASE
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is John Case.

Q. Please state the name of your employer and its business address.

A. I am employed by Eversource Energy, which has a business address of 107 Selden St., Berlin, Connecticut 06037.

Q. In what capacity are you employed?

A. I am the Director of Offshore Wind Siting.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have a Bachelor of Science degree in Civil and Environmental Engineering from Clarkson University and a Master's in Business Administration from the University of Connecticut.

I have been employed at Eversource (formerly Northeast Utilities) for the past 30 years in various capacities from Project Engineering, Construction Management, Project Management, and Transmission Line Engineering Director and most recently for the past year as Director of Offshore Wind Siting.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I am responsible for the overall federal, state, and local siting requirements and compliance primarily for the onshore components for the Offshore Wind projects, owned by Eversource through the Joint Venture (between Orsted North America Inc. [Orsted NA] and Eversource Investment LLC [Eversource Investment]).

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 9 (Cost of Proposed Facility)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

JOHN C. CASE

PROFESSIONAL EXPERIENCE

Director – Offshore Wind, Siting and Permitting 2019 - Present
Eversource Energy – Berlin, CT

Responsible for the oversight and direction of the development of the regulatory filings for siting and permitting approvals for the Offshore Wind projects as well as compliance with the requirements of those approvals through project execution. Through management of a diverse team of internal and external experts, ensure that that federal, state and local permits adhere to Projects schedule and budget requirements, result in practical and feasible designs that meet company objectives of pursing project solutions that are the least environmentally damaging, practical alternatives.

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Director - Transmission Line Engineering 2017 - 2019
Eversource Energy – Hartford, CT

Responsible for technical and strategic guidance for the Transmission Line Engineering Divisions throughout Eversource's entire 3 state regulated service area. Including responsibility for new system reliability projects and a particular focus on asset reliability with an aging infrastructure. Identify opportunities for new technology and tools to improve operations and maintenance and develop consistent standards and processes throughout the Eversource transmission lines in the 3 state service territory.

Manager - Transmission Line Engineering, and Estimating 2014 - 2017
Eversource Energy – Hartford, CT

Direct Management of 3 Engineering Departments that included 25 engineers, designers, drafters and estimators with responsibility for timely and reliable development of all Transmission Line and Civil Engineering capital projects, within the Connecticut and Western MA service areas. In addition, oversee the development of all project estimates in the entire 3 state regulated service area, to ensure accurate scope and estimates throughout the lifecycle of the projects.

Manager – Transmission Estimating 2013 - 2014
Northeast Utilities Service Company - Hartford, CT

Direct Management of a team of estimators with responsibility to generate accurate estimates for all Transmission Projects, including alternatives analysis, bid review and Transmission Cost Allocation filings and life-cycle analysis. Responsibilities include presentations of Projects for regulators. Directly involved in the oversight of estimates and project scope for large area planning studies in the 3 state regulated service area.

Lead Project Manager – NEEWS Engineering 2007 - 2013
Northeast Utilities Service Company - Hartford, CT

Responsible for the oversight and management of all aspects of engineering on the New England East-West group of projects. Projects involve significant reliability upgrades in the Southern New England area, totaling an estimated $1.5 billion. This position involved direct responsibility for the Engineering and Design of the entire projects, and coordination of the System Planning functions to establish the most cost-effective solutions for the project needs, establishing the base estimate for all projects, review of all siting and engineering documents, management and coordination of the engineering effort (internal and consulted), engineering responsibilities in the procurement effort and oversight of the final outage planning and commissioning for the projects.

Project Manager – Transmission Projects 2006 - 2007
Northeast Utilities Service Company - Berlin, CT

Overall management responsibility over all aspects of assigned transmission projects, including schedule, risk analysis and mitigation, siting and permitting, budget, contracting and closeout. Projects ranged in magnitude from $500,000 substation upgrades to $5,000,000 transmission line projects.

Construction Manager – Transmission Construction, Test and Maintenance 2003 - 2006
Connecticut Light and Power Company - Newington, CT

Responsibility for Owner's oversight and management of the construction effort on portions of the Bethel – Norwalk project including contractor coordination, site safety, compliance to specifications and contracts, outage clearance tag holder and change order negotiation. This was a $350,000,000 project to construct a 20+ mile transmission line in Southwest Connecticut. This project involved a new 20+ mile 345-kV transmission line in Southwest Connecticut, and additional 115-kV line replacements; 345 ad 115-kV XLPE underground cable, 345-kV HPFF cable, 3 intermediate 345-kV transition stations and two significant 345-kV GIS substation expansions.

Senior Engineer- Transmission Line and Civil Engineering 1990 - 2003
Northeast Utilities Service Company - Berlin, CT

Project Engineer on a variety of construction projects involving all tasks associated with engineering, design, estimating, securing regulatory approvals, and drafting construction specifications.

EDUCATION

Master of Business Administration May, 1998
University of Connecticut - West Hartford, CT
Bachelor of Science degree in Civil/Environmental Engineering May, 1990
Clarkson University - Potsdam, NY
Associates of Science degree in Engineering Sciences May, 1988
Broome Community College - Binghamton, NY

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Ryan Chaytors

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
RYAN CHAYTORS
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Ryan Chaytors.

Q. Please state the name of your employer and its business address.

A. I am employed by Orsted Offshore North America, which has a business address of 339 Boylston Street, 12th floor, Boston, Massachusetts 02116.

Q. In what capacity are you employed?

A. I am Program Development Director for Orsted's Northeast project portfolio and Project Development Director for the Sunrise Wind project.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I am an energy industry professional with nearly 20 years of experience in renewable energy project development, business development, strategic planning, project management, project due diligence, and renewable energy market assessment. I have successfully led the development of several large-scale onshore wind projects in the United States and have been employed by Orsted since early 2018. I have a Bachelor of Arts Degree from Dartmouth College.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I am responsible for managing the overall development activities for the Sunrise Wind project on behalf of Orsted.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 1 (General Information Regarding Application), Exhibit 6 (Economic Impacts), and Exhibit 9 (Cost of Proposed Facility)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Ryan Chaytors

Experience Summary

Mr. Chaytors is an energy industry professional with nearly 20 years of experience in renewable energy project development, business development, strategic planning, project management, project due diligence, and renewable energy market assessment. He has demonstrated the ability to manage projects, budgets, and team members in a wide array of contexts and has successfully led the development of several large-scale onshore wind projects in the United States.

Education

Bachelor of Arts (B.A) Environmental Studies, Dartmouth College 1999

Relevant Project Experience

Ørsted, Project Development Director. 2018-present. Responsbile for managing the overall development strategy of development projects in the Northeast US. Specific responsibilities include overseeing development activities around procurement, permitting, interconnection, community relations, stakeholder outreach, land and property aquisition and energy sales.

Citizens Energy Corporation, Director of Business Development. 2016- 2018. Responsible for identifying profitable growth opportunities to maximize return on capital which are used to fund Citizens Energy's charitable programs. Key tasks included analyzing and assessing new business ventures, identifying beneficial partnership opportunities, providing strategic planning support to existing or new projects, and supporting various aspects of project development, including finance, analysis, and competitive research.

SunEdison, Senior Manager, Strategy and M&A. 2015-2016. Responsible for leading utility scale wind and solar M&A transactions and strategic objectives for SunEdison. Key tasks included originating new deal opportunities, assessing strategic objectives of potential acquisitions, and evaluation of potential joint venture arrangements. Acted as team lead on deal execution, including valuation, due diligence, internal approvals and negotiations with counterparties.

DNV GL, Team Leader. 2013-2015. Managed project team responsible for performing independent engineering and due diligence activities conducted on pre-construction and operating renewable energy projects. Supported DNV GL's clients in Due Diligence and Independent Engineering services, with a focus on technical consulting for evaluating acquisitions of, or investments in, utility scale wind power projects. Mr. Chaytors was also a Business Development Lead for promoting DNV GL's profile and technical expertise in renewable energy due diligence and independent engineering services.

First Wind, Director of Development. 2007-2012. Successfully led the development of over 85 MW of wind capacity in New England. Managed and coordinated land acquisition services, environmental studies, meteorological campaign, community relations, project permitting, interconnection processes, and power and REC sales. Responsible for business development, due diligence activities, merger and acquisition support, and joint venture and other partnership opportunities.

KEMA, Energy Analyst. 2001-2007. Oversaw consulting projects focused on energy efficiency and renewable energy technologies and development. Responsible for renewable energy policy analysis and design, financial assessment, and stakeholder outreach and education. Also designed, implemented and evaluated energy efficiency programs for utility and government clients.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Raymond Collins

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
RAYMOND COLLINS
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Raymond Collins.

Q. Please state the name of your employer and its business address.

A. I am employed by Eversource Energy, which has a business address of 107 Selden Street, Berlin, Connecticut 06037.

Q. In what capacity are you employed?

A. I am Senior Specialist in Outreach Planning, a division of External Affairs.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I received my Bachelor of Science from the University of Connecticut in 2018 with a degree in both Economics and Political Science. I have been employed by Eversource since September of 2019. Prior to joining Eversource, I was employed by the Connecticut General Assembly as a Policy Analyst with a focus on the Energy and Technology and Environment Committees (2018–2019). Additionally, I had previously been employed as a contract lobbyist for a variety of energy and environmental clients, including the association management of a non-profit organization (2016–2018). I also served as the Director of Political Relations for a Connecticut Gubernatorial campaign in 2018.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I am responsible for the preparation of the Public Involvement Plan within the Application. I am also responsible for the overall public notification and community outreach requirements for the onshore components of the Offshore Wind projects.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 1-A (Public Involvement Plan)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Raymond Collins IV

11 Harbour Close, New Haven, CT, 06519 1-203-233-6670 Raymond.Collins@uconn.edu

PROFESSIONAL SUMMARY

Highly motivated; talented interpersonal relations; complex analytical understanding; strong relationship building and negotiation skills. Detailed knowledge and understanding of the political and legislative process with the ability to create persuasive arguments.

SKILLS

AMBITIOUS, DILIGENT, METICULOUS; EASILY ACCLIMATED AND ENTHUSIASTICALLY DRIVEN; **EXCELLENT VERBAL AND WRITTEN COMMUNICATION SKILLS;** TIME MANAGEMENT; PERSUASIVE SALESMANSHIP SKILLS; ABILITY TO WORK WITH AND LEAD IN DECISION MAKING PROCESSES AS A TEAM; **STRONG NETWORKING SKILLS;** ANALYTICAL AND RESEARCH DRIVEN KNOWLEDGE; **EXPERT IN CREATIVE DESIGN AND SPREADSHEET DATA MANAGEMENT;** PROFICIENT IN WORD, EXCEL, POWERPOINT, TABLEAU AND A VARIETY OF WEB-BASED ASSOCIATION MANAGEMENT SOFTWARE; **POWERFUL NEGOTIATOR WITH THE ABILITY TO ENCOURAGE DIPLOMACY**

EXPERIENCE

EVERSOURCE ENERGY

Senior Specialist
Offshore Wind External Affairs
September 2019 - Present
Hartford, CT

- Responsible for identifying, initiating and maintaining relationships with key stakeholders throughout the project area, including state and local elected officials, members of the local community, advocacy organizations and other public interest groups.
- Provide notice, updates and facilitate coordination with local officials on project activity, including survey work and construction to minimize any potential impact and serve as a conduit to the project team.
- Develop and implement strategies and activities that facilitate the engagement with, and information provided to project stakeholders. These include open houses, direct update meetings, and collaboration with civic associations or chambers.

CONNECTICUT GENERAL ASSEMBLY

Research & Policy Analyst
House Republican Office
November 2018 - Present
Hartford, CT

- Lead caucus Policy Analyst for the Energy & Technology, Environment and Banking Committee at the Connecticut General Assembly.
- Responsible for providing analysis on various policies, including high profile topics such as the state budget, renewable energy generation, and the implementation and stewardship of a variety of new technologies, including offshore wind and 5G service.
- Engage closely and collaboratively with legislators, agencies, municipal officials and other stakeholders to develop comprehensive policy.
- Work to negotiate legislation through constant communication with stakeholders and legislators from both parties.
- Track state and federal legislation and monitor proposed agency regulations.
- Write testimony on behalf of the caucus and leadership.
- Interact on a regular basis with executive branch agencies, businesses, and community organizations on various policy issues.

BOB STEFANOWSKI FOR GOVERNOR

Director of Political Relations
August - November 2018
Branford, CT

- Responsible for organizing specific constituency groups and their involvement with the campaign.
- Coordinated key relationships with local industries and businesses, identifying their areas of concern, and working to craft policy positions accordingly.
- Arranged and led meetings with the candidate and business leaders and industry representatives.
- Constant expansion and maintenance of donor relations and targeted fundraising.
- Coordinated research and data management for multiple policy topics, with the ability to present findings in a clear and concise format.

CAMMARATA GOVERNMENT AFFAIRS

Associate Lobbyist
November 2016 -
June 2018
Hartford, CT

- Responsible for identifying, analyzing and tracking public policies, including proposed legislation and administrative rules at the state level, to assess both positive and negative potential impact on client base.
- Coordinated strategic relationships among grass root levels, elected representatives, legal counsel and other government relation firms to protect the interest of our clients and work to seek resolutions and craft solutions through a comprehensive policy.
- Developed and maintained relationships with elected officials from all levels of Government, with emphasis on community leaders and members of a multitude of government agencies.
- Maintained an organized structure of communication with clients, including a weekly delivery synopsis of client-specific monitored legislation, press coverage and supporting materials for upcoming Public Hearings.
- Served in the role of association management for the Connecticut Recyclers Coalition, working directly with the Board of Directors on membership outreach and expansion, fundraising opportunities and the planning of large-scale events.
- Worked to draft, design and complete a variety of forms of electronic communication, including email campaigns, website design and social media marketing campaigns.

CONNECTICUT BUSINESS AND INDUSTRY ASSOCIATION

Government Relations Intern
February - May 2016
Hartford, CT

- Researched and tracked proposed legislation through the entirety of the legislative process.
- Wrote and edited informative Government Affairs Report articles to be published and distributed to CBIA members.
- Scheduled and attended meetings with members or the Legislature to gain their support on issues.
- Monitored various public hearings, committee meetings, and press releases.
- Updated and maintained a status report of all proposed legislation being followed by CBIA.

EDUCATION

University of Connecticut

Bachelor of Science
Economics & Political Science
May 2018
Dean's List

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Benjamin Cotts

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
BENJAMIN COTTS
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Benjamin R.T. Cotts.

Q. Please state the name of your employer and its business address.

A. I am employed by Exponent Engineering PC, which has a business address of 17000 Science Drive, Suite 200, Bowie, Maryland 20715.

Q. In what capacity are you employed?

A. I am a Senior Managing Engineer in the Electrical Engineering & Computer Science practice.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. My educational background includes a B.S. in Electrical Engineering (*summa cum laude*) from the University of Portland as well as an M.S. and Ph.D. in Electrical Engineering from Stanford University. After graduation, I was awarded a postdoctoral fellowship in electrical engineering at the University of Colorado, Denver. I am also certified as a Professional Engineer in the state of New York.

As a Senior Managing Engineer in the Electrical Engineering and Computer Science Practice, my responsibilities include reviewing, analyzing, and conducting studies related to electromagnetic fields from natural and manmade

sources. In addition to my role as a Senior Managing Engineer, I was previously a leading figure in coordinating scientific outreach to developing countries in the field of electromagnetics through the United Nations (UN) International Heliophysical Year (IHY) and International Space Weather Initiative (ISWI) programs. I was a founding member of a National Aeronautics and Space Administration/UN-sponsored conference series, organizing and leading multiple conferences on electromagnetic fields related to atmospheric electricity and space science.

I also am an officer in the Institute for Electrical and Electronic Engineer (IEEE) Power Engineering Society working group for Corona and Field Effects overseeing standards related to the modeling, measurement, and analysis of electric and magnetic fields (EMF), audible noise, and radio noise from alternating current and direct current transmission lines. In addition, I am a member of the IEEE TC95 committee that develops standards related to electromagnetic safety and a member of the Conseil International des Grands Réseaux Électriques (CIGRE).

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I was responsible for calculating the magnetic-field and induced electric-field levels associated with the proposed transmission lines along the various portions of the Project, including the SRWEC–NYS, the Onshore Transmission Cable, and the Onshore Interconnection Cable, and evaluating compliance with the applicable EMF limits contained in the 1990 Statement of Interim Policy on Magnetic Fields of Major Transmission Facilities published by the New York State Public Service Commission.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-J (Magnetic-Field Assessment in New York)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

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

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Lorianne DeFalco

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
LORIANNE DEFALCO
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Lorianne DeFalco.

Q. Please state the name of your employer and its business address.

A. I am employed by AKRF, Inc., which has a business address of 440 Park Avenue South, New York, New York 10016.

Q. In what capacity are you employed?

A. Senior Technical Director

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have over 15 years of experience in the environmental planning and consulting industry. I am currently a Senior Technical Director in the firm's Economic and Real Estate Advisory Services group. I hold an M.S. in Environmental Technology and a B.S. in Environmental Design.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I directed the economic impact modeling for the Project.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 6-A (Economic Modeling Report)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

LORIANNE DEFALCO, AICP, LEED® GREEN ASSOCIATE

SOCIOECONOMICS / ENVIRONMENTAL JUSTICE

Lorianne DeFalco is a Senior Technical Director in the firm's Environmental Assessment & Planning Department with over 15 years of experience in planning and economics. She has vast expertise in environmental impact analysis, with a focus on socioeconomics, energy and climate change, and environmental justice. She is proficient in economic benefits modeling (IMPLAN), public outreach, and a variety of computer applications, including Geographic Information Systems (GIS) and Adobe Creative Cloud. Ms. DeFalco has worked on a number of utility and infrastructure projects on Long Island. In May 2015, she managed the successful adoption of the Energy and Climate Action Plan for the County of Santa Barbara, CA.

Education

Adobe Creative Cloud, University of the Arts, Philadelphia, PA, 2015

M.S., Environmental Technology, New York Institute of Technology at Old Westbury, 2006

B.S., Environmental Design, University of Massachusetts at Amherst, 2002

Certifications & Affiliations

LEED® Green Associate, 2015

American Institute of Certified Planners (AICP), 2008

Member, American Planning Association (APA)

Years of Experience

Year started in company: 2003

Year started in industry: 2002

RELEVANT EXPERIENCE

Economic and fiscal impact modeling for private and public sector clients, various locations

Ms. DeFalco routinely estimates the direct, indirect, and induced jobs, labor income, value added, and taxes for a variety of projects during construction and operations, using input-output modeling software (e.g., IMPLAN and RIMS II) and custom Excel-based models. Estimated benefits include job creation, employee compensation, and value added to the economy.

NJTRANSIT Hudson Tunnel Economic Benefits Analysis, New York City, NY and NJ

AKRF routinely analyzes the potential economic and fiscal impacts of projects undergoing environmental review pursuant to the National Environmental Policy Act (NEPA) and the State Environmental Quality Review Act (SEQRA). For this assessment, Ms. DeFalco worked with the project engineers and construction managers to develop the construction cost estimates for the project alternative for economic modeling purposes

East Side Coastal Resiliency Project Socioeconomic Impact Analysis, New York City, NY

Ms. DeFalco assigned the hard and soft construction costs to IMPLAN sectors that most closely align with the proposed construction type; and ran a multi-regional input-output model to assess the potential economic and fiscal impacts of the project and its alternatives on the local area and surrounding region.

Long Island Power Authority (LIPA) Shoreham Wind Turbines, Shoreham, NY

AKRF was retained by the Long Island Power Authority (LIPA) to prepare a NYS Environmental Quality Review Act (SEQRA)-related Environmental Assessment (EA) for a proposal to site wind turbines in Shoreham. Ms. DeFalco prepared a variety of technical analyses for the EA and assisted with the visual assessment pursuant to New York State Department of Environmental Conservation guidelines.

National Grid E.F. Barrett Power Station EIS, Nassau County, NY

Ms. DeFalco prepared the Socioeconomics chapter for this DEIS, which addresses a range of issues related to potential socioeconomic effects of the proposed project, including project costs, potential effects on environmental justice communities, and potential effects on police and fire services, jobs, and the local fishing industry. Ms. DeFalco also assessed two alternatives for their compliance with the New York State Smart Growth Public Infrastructure Policy Act, analyzed socioeconomic impacts due to construction, and participated in calls with the client and project team to develop the strategy.

National Grid Holtsville and Wildwood Substations Environmental Assessments, Suffolk County, NY

AKRF was retained by National Grid to prepare Environmental Assessments pursuant to the State Environmental Quality Review Act for a proposed substation in Holtsville and a proposed substation expansion at the existing Wildwood substation in East Shoreham. Ms. DeFalco is currently preparing the technical analyses, including land use and community character, zoning and public policy, and environmental justice.

National Grid East Brookhaven Article VII, Suffolk County, NY

National Grid retained AKRF to prepare an Article VII application pursuant to Public Service Commission regulations for proposed upgrades to the existing Wildwood to Riverhead transmission line. Ms. DeFalco worked on the application, including a project description, land use analysis, and coastal zone consistency evaluation.

LIPA Southampton to Bridgehampton Transmission Line, East End, Long Island, NY

AKRF was retained by the Long Island Power Authority (LIPA) to prepare an EIS for a proposed transmission line in the Town of Southampton. Ms. DeFalco prepared the environmental justice analysis and other EIS chapters, including Unavoidable Impacts, Growth-Inducing Aspects, Irreversible and Irretrievable Commitment of Resources, Use and Conservation of Energy, Mitigation, and Cumulative Impacts.

LIPA Mobile Generators, Suffolk County, NY

AKRF was retained by the Long Island Power Authority (LIPA) to prepare a NYS Environmental Quality Review Act (SEQRA)-related Environmental Assessment (EA) for a proposal to site mobile generators in Holtsville, Shoreham, and Wading River. Ms. DeFalco prepared the land use, zoning, and community facilities analyses and associated figures for the EA.

United Water New York's Rockland Hudson River Desalination Project, Haverstraw, NY

AKRF was retained to prepare a Draft EIS (DEIS) for the proposed Hudson River desalination plant in Rockland County, just 3 months ahead of a court-ordered deadline for completion of the document. After a company-wide effort, the firm helped the client meet a major milestone. AKRF will continue work on the project as the DEIS moves through the environmental review process. Ms. DeFalco prepared the environmental justice analysis.

Hunts Point Water Pollution Control Plant Phase III Upgrade Environmental Impact Statement, Hunts Point, NY

AKRF was retained by the New York City Department of Environmental Protection (NYCDEP) to prepare an Environmental Impact Statement (EIS) for a proposed upgrade to the Hunts Point Water Pollution Control Plant (WPCP). Ms. DeFalco prepared the environmental justice analysis for the EIS.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Francis Dubois

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
FRANCIS DUBOIS
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Francis Dubois.

Q. Please state the name of your employer and its business address.

A. I am employed by Burns & McDonnell, which has a business address of 108 Leigus Road, Suite 1100, Wallingford, Connecticut 06492.

Q. In what capacity are you employed?

A. I am a project manager in the Construction/Design-Build global practice focused on electric transmission and distribution projects.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I earned a Bachelor of Science in Civil Engineering, Master of Science in Civil Engineering, and Master of Business Administration from the University of Connecticut. I have nearly 20 years of experience with over 12 years with Burns & McDonnell where I have focused on electric transmission projects.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I am the project manager for the onshore portion of the project.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 5 (Design Drawings)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

FRANCIS DUBOIS, PE

Project Manager

Mr. Dubois serves Burns & McDonnell as a project manager in the Construction/Design-Build Division. Mr. Dubois' experience includes the management of large-scale electric transmission projects. Mr. Dubois possesses a broad project management background which includes permitting, siting, civil/site engineering, utility design, cost & schedule control, real estate land rights acquisition, community relations, procurement and construction management. Mr. Dubois has worked on a number of complex, multi-billion dollar programs. A summary of his experience is provided below.

EDUCATION

- MBA
- MS, Civil Engineering
- BS, Civil Engineering

REGISTRATIONS

- Professional Engineer (CT)

12 YEARS WITH BURNS & MCDONNELL

19+ YEARS OF EXPERIENCE

Sunrise Wind | Eversource Energy

New York | 2020-present

Project Manager. Mr. Dubois serves as project manager for the on-shore portion of the Sunrise Wind Project which includes the installation of approximately 17 miles of underground transmisison duct bank and a new substation in Brookhaven, NY. Mr. Dubois manages the coordination of the overall on-shore scope including engineering, permitting, siting, project outreach, scheduling and cost control, procurement and construction.

Greenwich Substation and Line Project | Eversource Energy

Connecticut | 2017-present

Project Manager. Mr. Dubois serves as project manager on the Greenwich Susbtation and Line Project which includes the installation of a 2.3 mile, underground, double circuit 115-kV transmission line, a new 115-13.2-kV substation in Greenwich, CT and expansion of the existing Cos Cob Substation which includes the installation of two new 115-kV line terminals in addition to the relocation of the 1750-kV line, installation of two new breakers, and expansion of the ring bus to faciliate these modifications. Mr. Dubois manages the overall project including engineering, permitting, siting, project outreach, scheduling and cost control, procurement and construction.

Transmission Rights-of-Way Reliability Project | Eversource Energy

Connecticut | 2016-2017

Project Manager. Mr. Dubois served as project manager on a series of projects spanning the three state service territory of Connecticut, Massachusetts and New Hampshire. The schedule provides for a 5 year clearing cycle over which time all rights-of-way with additional uncleared widths will be reclaimed to the easement or fee owned limits or to some distance from the conductors to prevent tree contact from adjoining trees. His responsibilities included working closely with the Eversource Transmission Vegetation Management (TVM) group and their contractors. He coordinated with and managed

FRANCIS DUBOIS, PE

(continued)

services including project controls, procurement, rights-of-way limit of clearing flagging, environmental field resource delineation & permitting, project outreach and vegetation clearing management services.

Station 131 Mystic–East Eagle-Chelsea Reliability Project | Eversource Energy (formerly NSTAR)

Massachusetts | 2014-2016

Project Manager. Mr. Dubois served as project manager on the $110 million dollar Station 131 Mystic–East Eagle-Chelsea Reliability Project comprised of 4.7 miles of underground 115-kV XLPE transmission, 1 mile of underground 13.8-kV distribution and a new GIS substation. His responsibilities as project manager included the management of permitting, cost controls, schedule controls, engineering coordination, land surveying, field investigations and he assisted the client in the procurement of professional services, construction services and major equipment. Mr. Dubois served as an expert witness as part of MA DPU EFSB proceeding.

Station 99 Seafood Way Reliability Project | Eversource Energy (formerly NSTAR)

Massachusetts | 2014-2015

Project Manager. Mr. Dubois served as project manager on the $112 million dollar Station 99 Seafood Way Reliability project comprised of four new 115-kV underground HPFF pipe-type transmission cables, new 13.8-kV underground distribution and a new GIS substation located on a 15-foot high elevated platform. His responsibilities as project manager included the management of permitting, cost controls, schedule controls, engineering coordination, land surveying, field investigations and he assisted the client in the procurement of professional services, construction services and major equipment.

Auburn Transmission Project | NYSEG

New York | 2014-2014

Project Manager. Mr. Dubois served as project manager on the $43 million dollar Auburn Transmission Project (ATP) comprised of proposed new 15 miles of 115-kV transmission line and associated substation improvements. His responsibilities as project manager included the management of siting and permitting, cost controls, schedule controls, community relations, real estate land rights acquisition, land surveying, field investigations and procurement of professional services such as a detailed engineering design.

Columbia County Transmission Project | NYSEG

New York | 2014-2014

Project Manager. Mr. Dubois served as project manager on the $28 million dollar Columbia County Transmission Project (CCTP) comprised of proposed new 11 miles of 115 kV transmission line and associated substation improvements. His responsibilities as project manager included the management of siting and permitting, cost controls, schedule controls, community relations, real estate land rights acquisition, land surveying, field investigations and procurement of professional services such as a detailed engineering design.

Silver Creek Substation Rebuild | NYSEG

New York | 2014-2014

Project Manager. Mr. Dubois served as the project manager on the $11 million dollar Silver Creek substation rebuild project. His responsibilities as project manager included the management of siting and permitting, cost controls, schedule controls,

FRANCIS DUBOIS, PE

(continued)

community relations, real estate land rights acquisition, land surveying, field investigations and procurement of professional services such as a detailed engineering design.

New England East-West Solution (NEEWS) | Eversource Energy (formerly Northeast Utilities)

Massachusetts | Connecticut | 2013-2014

Project Manager. Mr. Dubois served as the project manager on the $718 million dollar Greater Springfield Reliability Project, one of the four projects that are comprised of NEEWS. The entire NEEWS project consisted of over 100 miles of 345-kV overhead transmission, over 45 miles of 115-kV overhead transmission, and approximately 17 substation upgrades throughout Connecticut and Western Massachusetts. Mr. Dubois' responsibilities as project manager included the management of detailed design, cost control, schedule control, community relations, field investigations, procurement, construction management and inspection and project closeout. The NEEWS project is a multibillion -dollar project with a construction window of approximately 2.5 years.

The Northern Pass Transmission Project | PSNH

New Hampshire | 2010-2013

Assistant Program Manager. Mr. Dubois served as an assistant program manager on the Northern Pass Project located in New Hampshire up to the Canadian border. The Northern Pass Project consists of an HVDC electric transmission line with a bidirectional 1,200 MW transfer-rating running from the international border between New Hampshire and Canada to Franklin, New Hampshire, where it would connect with a 345-kV alternating current (AC) line. He managed siting and permitting, community relations, real estate acquisition, and cost and schedule control activities.

The Maine Power Reliability Project | Central Maine Power

Maine | 2009-2010

Project Manager. Mr. Dubois served as a project manager on the $1.4 billion dollar Maine Power Reliability Project. This project is comprised of 350 miles of electrical transmission right-of-way and encompasses 4,000 abutting owner parcels. He was responsible for managing the real estate efforts of acquiring real estate land rights from 650 abutting owners and was responsible for managing the population of the real estate information database. Mr. Dubois coordinated with GIS specialists to represent up-to-date project information through OneTouchPM® geospatial mapping solution. His duties also included collaborating with engineering and environmental project managers to provide the best engineering, environmental and real estate design project alternatives.

EMGLO & CTC Renovation | Lockheed Martin Aeroparts

Pennsylvania | 2008-2009

Construction Project Manager. Mr. Dubois served as the construction project manager on this renovation project. He was responsible for the renovation of an existing warehouse into a light manufacturing facility. He was responsible for identifying local companies for several trades, vetting the firms based on capabilities and past experience, creating and distributing bid packages, selecting the most responsible contractor, obtaining local permits and managing the construction process.

Middletown-Norwalk Project | Eversource Energy (formerly Northeast Utilities)

Southwestern Connecticut | 2008-2009

Assistant Project Manager. Mr. Dubois was an assistant project manager on the 345-kV XLPE underground transmission portion of the Middletown to Norwalk Project. He assisted the project manager with scheduling of construction work and

FRANCIS DUBOIS, PE

(continued)

commissioning of a 24-mile long segment of underground 345 kV XLPE electrical dual circuit and managed real estate restoration efforts associated with the underground project.

Vanasse Hangen Brustlin (VHB)*

Middletown, Connecticut | 2006-2008

Site/Civil Engineering Manager. Mr. Dubois served as the site/civil engineering manager for CVS Pharmacy Connecticut build out. He was responsible for the suitability assessment of sites, conceptual site/civil design, permitting, engineering including site layout and stormwater design. Additional projects at VHB included site/civil design for a regional high school, hotel additions, large stream crossings, and a 700-room hotel conference center development. His duties included directing environmental, survey, traffic and transportation departments on project related tasks. He conducted presentations and permitted projects through zoning, wetland and architectural review boards, municipal staff and Department of Transportation (DOT), Department of Environmental Protection (DEP) and State Traffic Commission.

Dewberry*

New Haven, Connecticut | 1999-2006

Project Manager/Civil Engineer. Mr. Dubois served as a project manager and site/civil engineer for cellular telecommunication, land development, and transportation projects. He prepared land development conceptual, zoning and construction plans, engineering reports and regulatory permit applications. Mr. Dubois was responsible for engineering, project controls, client management, and coordination with other professionals including structural and mechanical engineers, architects, land surveyors and construction managers. Mr. Dubois performed site visits to assess existing conditions for project feasibility and field-verify construction to certify conformance to plans and specifications. Interacted with the Army Corps of Engineers, state DEP & DOT, and local municipalities throughout the permitting, design, and planning approval of projects.

**denotes experience prior to joining Burns & McDonnell*

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Michael Evans

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
MICHAEL EVANS
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Michael G. Evans.

Q. Please state the name of your employer and its business address.

A. I am employed by Orsted North America, Inc., which has a business address of 399 Boylston Street, 12th Floor, Boston, Massachusetts 02116.

Q. In what capacity are you employed?

A. I am the Permitting Manager for the Sunrise Wind Project. I oversee all federal and state permit applications and supporting assessments for this offshore wind and transmission project.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I received a Bachelor of Arts degree in Environmental Studies from Connecticut College in 2006. I received a Master of Science degree in Environmental Engineering Science from the University of Florida in 2010. I have also completed post-graduate coursework at the University of Massachusetts Amherst related to engineering of offshore wind energy development for non-engineers. I have over 14 years of experience overseeing marine and terrestrial environmental studies, including work at Save the Bay in Providence, RI (2006), Florida Department of Environmental Protection in Port St. Lucie, FL (2006–2011),

AECOM Technical Services, Inc. in Providence, RI (2012–2018), and at my current position at Orsted North America, Inc (2018–Present).

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. As the Permitting Manager for the Sunrise Wind Project, I oversee all federal and state permit applications and supporting assessments for this offshore wind and transmission project. I drafted and reviewed numerous sections, exhibits, and appendices that are included in the Application, managed the scope of multiple environmental consultants, and coordinated closely with colleagues at Orsted and Eversource Energy in the preparation of the Application.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 2 (Location of Facilities), Exhibit 3 (Alternatives), Exhibit 4 (Environmental Impact), Exhibit 8 (Other Pending Filings), Exhibit E-1 (Description of Proposed Transmission Line), and Exhibit E-3 (Underground Construction).

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Michael. G. Evans, MS

Senior Project Lead

Experience Summary

Mr. Evans has 14 years of technical experience in the environmental resources field with an emphasis on permitting, compliance, enforcement, impact assessment, and mitigation/restoration. He has experience with wetlands and water quality permitting, as well as offshore and coastal development permitting, including preparation and review of applications for Bureau of Ocean Energy Management, Federal Energy Regulatory Commission, U.S. Army Corps of Engineers, National Park Service, New York State Department of Environmental Conservation, New York State Department of State, Massachusetts Office of Coastal Zone Management, Massachusetts Department of Environmental Protection, Rhode Island Coastal Resources Management Council, Rhode Island Department of Environmental Management, Connecticut Department of Energy and Environmental Protection, Florida Department of Environmental Protection, Florida Fish & Wildlife Conservation Commission, South Florida Water Management District, and the National Pollution Discharge Elimination System.

Education

University of Florida **2010**
Master of Science, Environmental Engineering Science

Connecticut College **2006**
Bachelor of Arts, Environmental Studies

University of Massachusetts **2017**
Post-Graduate Coursework, Engineering of Offshore Wind Energy Development for Non-Engineers

Relevant Project Experience

Orsted North America, Inc. **January 2018 to Present**
Senior Project Lead, Lead the permitting effort for the development of the Sunrise Wind Offshore Wind Project, as well as support the permitting effort of the Bay State Wind Offshore Wind Farm Project, two utility scale offshore wind farms. Manage project consultants and ensure deliverables are completed on time and on budget. Produce and review permit application packages, including the Construction and Operation Plans submitted to BOEM in March 2019 (for the Bay State Wind Project) and in September 2020 (for the Sunrise Wind Project). Review survey plans for geophysical, geotechnical, benthic, water quality, and other survey investigations. Coordinate with local, state, federal, and tribal agencies and numerous stakeholders on Project planning and execution. Participate in public meetings, community consultations and stakeholder events to detail project milestones/metrics and secure feedback on Project development. Prepare and review bid documents for state offshore wind solicitations. Assist technical teams in cable routing and offshore facility siting.

AECOM Technical Services, Inc. **January 2012 to January 2018**
Scientist III, Provided technical support for projects in the Environmental Impact Assessment & Permitting Market Sector, including Federal, State and local permitting, wetland delineation, water and sediment sampling. Task Leader throughout permitting and construction a 13-mile natural gas pipeline in NY, MA, and CT, including application preparation; impact assessment; onsite meetings with agencies, clients, contractors, and stakeholders; threatened & endangered species surveys; environmental inspection. Task Leader for a proposed 420-mile natural gas pipeline in PA, NY, MA, NH, and CT, including report preparation and permitting cumulative

impact assessment; alternative analysis; reliability and safety review. Lead Environmental Inspector for 21+ miles of new 115kV transmission line in CT. Environmental Inspector for 25+ miles of new 345kV and 11kV transmission line in western MA. Technical permitting assistance for numerous other natural gas pipeline, LNG, and electric transmission line projects in the Northeast.

Florida Department of Environmental Protection **September 2006 to September 2011**
Environmental Specialist III, Managed projects in the Submerged Lands and Environmental Resources Program, including permit applications, complain investigations, and permit compliance for coastal, wetland, and stormwater projects. Conducted inspection to determine compliance with permit conditions and environmental regulations. Wrote and reviewed restoration and mitigation plans and monitoring reports. Coordinated with general public, property owners, consultants, engineers, municipalities, utilities, and other locate, state, and federal agencies. Performed fish population surveys with Florida Parks Service and coral reef bleaching assessments with FFWCC as part of the Florida Reef Resilience Program as member of the SE District SCUBA Dive Team.

Save the Bay **May 2016 to September 2016**
Research Assistant, Aided in the restoration of eelgrass, *Zostera marina*, through harvesting and transplanting techniques. Monitored water quality and survival of transplanted eelgrass in Narragansett Bay.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Grant Johnson

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
GRANT JOHNSON
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Grant Johnson.

Q. Please state the name of your employer and its business address.

A. I am employed by Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., which has a business address of 217 Montgomery Street, Suite 1100, Syracuse, New York 13202.

Q. In what capacity are you employed?

A. I am a Senior Project Manager in Historic Preservation within the Cultural Resources division.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I received a Bachelor of Arts degree in Anthropology from the Syracuse University in 2001. I received a Master of Arts degree in Historic Preservation Planning from Cornell University in 2010. I am currently employed as a Senior Project Manager in Historic Preservation at Environmental Design & Research, Landscape Architecture, Engineering, & Environmental Services, D.P.C. ("EDR"). I have held this position since 2019. Prior to that, I held several positions at EDR, including Cultural Resources Project Manager (2018), Senior

Cultural Resources Specialist (2016 to 2018), and Cultural Resources Analyst (2012 to 2016).

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I was responsible for the preparation of the Onshore Above-Ground Historic Properties Report. The purpose of this report was to evaluate the potential visual effects of the onshore converter substation on above-ground historic properties listed in, or potentially eligible for listing in, the State and/or National Register of Historic Places (S/NRHP) located within areas of potential onshore converter substation visibility.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-C (Onshore Above-ground Historic Properties Report).

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Grant S. Johnson

Senior Project Manager, Historic Preservation

education

Master of Arts, Historic Preservation Planning, Cornell University, 2010.

Bachelor of Arts, Anthropology, Syracuse University, 2001.

professional affiliations

President, Board of Directors, Preservation Association of Central New York.

Vice President, Board of Directors, Historic Preservation Planning Alumni of Cornell University.

President, Board of Directors, Westcott Neighborhood Association, Syracuse, NY

Onondaga Historical Association.

employment history

Senior Project Manager, Historic Preservation, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., 2019- present.

Cultural Resources Project Manager, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., Syracuse, NY, 2012-2019.

Independent Consultant, Organization of American Historians, and National Park Service Midwest Regional Office, 2011.

Grant Johnson is a Senior Historic Preservation Project Manager at EDR with more than 10 years of professional experience. He manages and serves as lead technical expert for historic-architectural resources surveys; NRHP eligibility determinations and nominations; Phase 1A/1B cultural resources surveys; and providing visual effects assessment relative to historic resources for permitting documents. Grant also has extensive experience and relationships consulting with State Historic Preservation Office (SHPO) staff and other regulatory agencies in New York, Maryland, Ohio, and Pennsylvania. He has managed the preparation of Historic Resources Effects Analysis reports for multiple offshore wind energy projects reviewed by BOEM.

project experience

South Fork Wind Farm, On-shore Transmission Line, Suffolk County, NY (January 2017 - current) – Assisted in preparation of Historic-Architectural Resources Survey as part of consultant team with AECOM and VHB in support of an Article VII application for a 138kV underground transmission line and new substation associated with a proposed 90-MW offshore wind energy project.

Revolution Wind Farm, Visual Impact Assessment, Offshore MA/RI (January 2019 - Current) - This project includes the on-going preparation of an historic resources visual effects analysis associated with an offshore wind farm located off the coasts of Massachusetts and Rhode Island. Task manager responsible for technical oversight of all research and consultation with relevant state and federal agencies, client and other sub consultant coordination, and preparation of the historic resources visual effects analysis report including maps and other graphics.

Skipjack Wind Farm, Visual Impact Assessment, Offshore DE (July 2017 - Current) - This project includes an historic resources visual effects analysis associated with an offshore wind farm located off the coast of Delaware and Maryland. Provided task management and technical oversight for all research, consultation with relevant state and federal agencies, client and other sub consultant coordination, and preparation of the historic resources visual effects analysis report including maps and other graphics.

Baron Winds Project, Steuben County, NY (May 2015 – Current) - Completed a Historic Architectural Resources Survey and Historic Resources Visual Effects Analysis in support of Article 10 Application to the New York State Board on Electrical Generating Siting and the Environment for a proposed (up to) 300 MW wind energy project with up to 80 wind turbines and consulted with New York State Historic Preservation Office (SHPO) staff in the development of cultural resources mitigation plans.

Cassadaga Wind Farm, Chautauqua County, NY (February 2015 – September 2019) - Conducted historic resources survey and engaged in State Historic Preservation Office (SHPO) consultation in support of Article 10 Application to the New York State Board on Electrical Generating Siting and the Environment for a proposed 58 wind turbine, 126 MW wind energy facility; consulted with New York State Historic Preservation Office (SHPO) staff in the outreach and development of plan for mitigation of visual impacts to historic resources. Conducted outreach to stakeholders in support of identifying and developing potential cultural resources mitigation projects as requested by SHPO and required by the Section 106 process.

Galloo Island Wind Project, Jefferson County, NY (September 2016 - August 2018) - Performed an historic resources visual effects analysis and prepared subsequent report for a proposed (up to) 109 MW wind energy facility located on Galloo Island in Lake Ontario and consulted with New York State Historic Preservation Office (SHPO) staff in the development of work plan for historic resources surveys.

Jericho Rise Wind Farm, Franklin County, NY (June 2015 – July 2016) - Conducted historic resources survey and visual effects analysis and engaged in SHPO consultation in support of SEQRA review and U.S. Army Corps of Engineers and New York State Department of Environmental Conservation (NYSDEC) wetland permitting for a proposed 37 wind turbine, 78 MW wind energy facility.

Grant S. Johnson

Senior Project Manager, Historic Preservation

Arkwright Summit Wind Farm, Chautauqua County, NY (April 2015 – August 2017) - Conducted historic resources assessment and visual effects analysis to support environmental permitting under New York State Environmental Quality Review Act (SEQRA) for a proposed 36-turbine, 78-megawatt (MW) wind energy facility and associated 3-mile generator lead.

Crown City Wind Project, Cortland County, NY (June 2012 – September 2012) - Conducted historic context research and assisted in preparation of a Phase 1A cultural resources survey and visual effects analysis as part of SEQRA review of a proposed 7-turbine, approximately 12.6 MW wind energy project.

Great Bay Wind Energy Center, Somerset County, MD (January 2013 – September 2014) - Conducted historic context research, visual fieldwork and architectural survey fieldwork, and prepared an Historic Resources Assessment as part of the Maryland Historical Trust review of a proposed 30-turbine, approximately 99 MW wind energy project.

Copenhagen Wind Farm, Lewis County, NY (July 2012 – January 2014) - Conducted historic context research, visual fieldwork and architectural survey fieldwork, and assisted in preparation of a Phase 1 cultural resources survey as part of State Environmental Quality Review Act (SEQRA) review of a proposed 49-turbine, approximately 80 MW wind energy project.

Black Oak Wind Farm, Town of Enfield, Tompkins County, NY (August 2012 – October 2012) - Conducted historic context research and assisted in preparation of a Phase 1A cultural resources survey and visual effects analysis as part of SEQRA review of a proposed 7-turbine, approximately 12.6 MW wind energy project.

Stiles Brook Wind Project, Towns of Grafton & Windham, Windham County, VT (December 2014 – January 2015) - Conducted visual fieldwork in support of visual simulations for a proposed 32-turbine wind project.

W/H 1/2 & G Line North Transmission Lines, Central Hudson Gas & Electric, Ulster & Dutchess Counties, NY (May 2014 – September 2014) - Engaged in visual fieldwork and assisted in preparation of Part 102 reports for an 11-mile 69kV electrical transmission line rebuild project in Ulster County, New York (WH-1/2 Line) and an 8.5-mile 69kV electrical transmission line rebuild project in Dutchess County, New York (G Line North) to be submitted to the Public Service Commission (PSC).

Aquidneck Island Reliability Project, Town of Middletown & City of Newport, Newport County, RI (May 2014 – February 2015) - Conducted visual fieldwork for proposed transmission line and substation improvements; assisted in preparation of Visual Impact Assessment for transmission line as well as substation removals.

Ticonderoga-Whitehall Transmission Line, National Grid, Essex & Warren Counties, NY (August 2013 - September 2013) - Conducted visual fieldwork for proposed structure upgrades to the Ticonderoga-Whitehall #3 and Ticonderoga-Republic #2 lines. Photographed existing lines at road crossings as well as locations of poles to be replaced in accordance with Adirondack Park Agency guidance.

Valley Reliability Project, National Grid & Public Service of New Hampshire Merrimack (October 2014 – December 2015) - Engaged in visual fieldwork in support of visual simulations and a visual impact assessment for a proposed 345kV electrical transmission line extending from Londonderry, New Hampshire to Tewksbury, Massachusetts.

A & C Transmission Lines, Central Hudson Gas & Electric, Towns of Pleasant Valley, LaGrange, Wappinger, & East Fishkill, Dutchess County, NY (November 2012 – July 2013) - Conducted historic context research and assisted in preparation of a Phase 1 cultural resources survey in support of Public Service Commission (PSC) review under Article VII of upgrades to an 11-mile 115kV transmission line.

Van Dyke Road Substation, National Grid, Town of Bethlehem, Albany County, NY (October 2013 – November 2013) - Conducted historic background research, visual fieldwork, and assisted in preparation of a Phase 1 cultural resources survey in support of NYSOPRHP project review of a proposed 4.3-acre substation.

Great Bay Solar I, Somerset County, MD (March 2015 – September 2015) - Prepared historic resources assessment in support of Maryland Public Service Commission review for a Certificate of Public Convenience and Necessity (CPCN), for a proposed 100 MW solar energy project located on 800-acres.

New York State Office of Parks, Recreation & Historic Preservation (NYSOPRHP) Consultation, Various Counties, New York State (September 2014 – present) - Prepared and submitted over 150 submittals for NYSOPRHP/SHPO consultation through the Cultural Resource Information System (CRIS) website, including preparation of project narratives, maps, photographs and supporting historical documentation as needed for projects located in over 25 counties in New York State.

Michigan Maritime Heritage Special Resource Study, Upper and Lower Peninsulas of Michigan (June 2010 – November 2010) - *Prior to EDR,* Co-designed survey form and engaged in two field surveys examining over 250 resources along the coasts of the Upper and Lower Peninsulas of Michigan for integrity and significance to maritime heritage. Worked with NPS staff as well as Michigan state historic preservation officers in a collaborative context to further the goals of the study to organize and encourage collaboration of agencies and institutions interested in the promotion of maritime heritage.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Daniel Mennitt

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
DANIEL MENNITT
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Daniel J. Mennitt.

Q. Please state the name of your employer and its business address.

A. I am employed by Exponent Engineering PC. My business address is 1331 17th Street, Suite 515, Denver, Colorado 80202.

Q. In what capacity are you employed?

A. I am a Senior Associate in the Mechanical Engineering Practice.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. My educational background includes a B.S. in Mechanical Engineering (*magna cum laude*) and Ph.D. in mechanical engineering (*magna cum laude*) from Virginia Polytechnic Institute and State University. After graduation, I held a Research Scientist position in the Department of Electrical and Computer Engineering at Colorado State University for approximately 10 years. During this time, I was also employed as a contractor to the National Park Service and worked in partnership with federal agencies to assess environmental noise and the consequences of noise exposure to humans and ecological systems. As a Senior Associate in the Mechanical Engineering Practice, my responsibilities include reviewing, analyzing, and conducting studies related to environmental

sound, as well as noise and vibration control. I also publish and review original research on acoustics in peer-reviewed journals. I am a member of the Acoustical Society of America and the Institute of Noise Control Engineering, and I am a certified Occupational Hearing Conservationist.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I was responsible for measurements and assessment of the existing acoustical conditions, calculating the sound pressure levels associated with the construction and operation of the onshore components of the proposed Project, and evaluating compliance with applicable criteria as specified by the Environmental Protection Agency, New York State Department of Environmental Conservation, Suffolk County, and the Town of Brookhaven regulations.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-I (Onshore Acoustic Assessment)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Exponent®
Engineering & Scientific Consulting

Daniel J. Mennitt, Ph.D.
Senior Associate | Mechanical Engineering
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Professional Profile

Dr. Mennitt specializes in acoustics and has expertise in the characterization, design, and modeling of acoustical environments and devices. He has over 15 years of experience in acoustics, environmental noise, and noise control and is a certified Occupational Hearing Conservationist. He has worked extensively with federal agencies to assess environmental noise and the consequences of noise exposure to humans and ecological systems. Dr. Mennitt also has considerable experience in signal processing and has developed algorithms for applications such as detection, localization, filtering, feature extraction, and optimization. He has applied his expertise to the analysis of both free field and diffracting microphone arrays in terrestrial and underwater environments. Dr. Mennitt's research background also involves predictive modeling and the statistical analysis of large datasets.

Prior to joining Exponent, Dr. Mennitt worked in partnership with Colorado State University and the National Park Service's Natural Sounds and Night Skies Division to manage acoustical environments. His research involved the spatiotemporal patterns of environmental sound on landscape scales, impacts of noise exposure, acoustical transducers, bioacoustics, and predictive modeling. Dr. Mennitt has designed devices for calibration and monitoring sound in extremely quiet environments with empirical, analytical and numerical methods. Measurements in quiet environments are especially prone to contamination and his research utilized signal processing and machine learning techniques for noise reduction and robust data acquisition. He has also directed large environmental noise studies in urban areas.

Dr. Mennitt has a strong background in scientific programming and experience with statistical learning, data mining, and time and frequency domain simulations of acoustic propagation. He led a multidisciplinary team to pioneer a framework for geospatial sound modeling that allows for comprehensive mapping of environmental sound levels on national scales. He has worked with academia, government, and industry to translate these estimates of noise exposure to implications for land management, ecological, epidemiological, military, and commercial applications. Related research in underwater acoustics demonstrated the utility of passive acoustical monitoring and environmental data to predict trends in marine biodiversity. While at Colorado State University, Dr. Mennitt also lectured on acoustics, noise, and signal processing.

Dr. Mennitt's background is in mechanical engineering. He performed his doctoral work at Virginia Tech's Vibration and Acoustics Laboratory, investigating localization and tracking of acoustic sources in free-field and cluttered environments. During this research, he developed robust statistical methods for classification of acoustical signals and fusion of information from distributed sensor networks. He has also created tools for beamforming, adaptive filtering, and speech applications with diffracting microphone arrays. While at the Vibration and Acoustics Laboratory, he assisted with laboratory measurements and testing with anechoic and reverberation rooms, intensity probes, impedance tubes, modal impact hammers, accelerometers, and shakers. Additional graduate work included studies in virtual acoustic

prototyping, architectural acoustics, and audio engineering. His training and expertise in audio engineering helps Dr. Mennitt conduct educated and critical observations to address acoustical issues.

Academic Credentials & Professional Honors

Ph.D., Mechanical Engineering, Virginia Polytechnic Institute and State University, *magna cum laude* , 2008

B.S., Mechanical Engineering, Virginia Polytechnic Institute and State University, *magna cum laude* , 2004

The Robert Bradford Newman Medal for Merit in Architectural Acoustics, 2005

Licenses and Certifications

Occupational Hearing Conservationist (OHC), Council for Accreditation in Occupational Hearing Conservation, 503540

Academic Appointments

Research Scientist III, Department of Electrical and Computer Engineering, Colorado State University, 2018-2019

Research Scientist II, Department of Electrical and Computer Engineering, Colorado State University, 2015-2018

Research Scientist I, Department of Electrical and Computer Engineering, Colorado State University, 2010-2015

Graduate Research Assistant, Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, 2004-2008

Professional Affiliations

Acoustical Society of America

Institute of Noise Control Engineering

Publications

D. J. Mennitt, “An adaptive coupler for the calibration of the arbitrarily shaped microphones,” Applied Acoustics 154 (2019):114-120.

D. J. Mennitt, K. Fristrup, and B. Notaros, “Characterization of gain and directivity of exponential horn receivers,” The Journal of the Acoustical Society of America, 142 (2017):3257-3266.

C. D. Francis, D. Taff, P. Newman, C. White, C. A. Monz, M. Levenhagen, A. R. Petrelli, L. C. Abbott, J. Newton, S. Burson, C. B. Cooper, Kurt M. Fristrup, C. McClure, D. J. Mennitt, M. Giamellaro, J. R. Barber, “Acoustic Environments Matter: Synergistic benefits to humans and ecological communities,” Journal of Environmental Management, 203 (2017):245-254.

J. A. Casey, R. Morello-Frosch, D. J. Mennitt, K. M. Fristrup, E. L. Ogburn, and P. James, “Inequity in noise pollution in the United States,” Environmental Health Perspectives, 77017 (2017):1-10.

R. T. Buxton, M. F. McKenna, D. J. Mennitt, K. M. Fristrup, K. Crooks, L. Angeloni, and G. Wittemyer, “Noise pollution is pervasive in US protected areas.” Science 356, no. 6337 (2017):531-533.

D. J. Mennitt and K. Fristrup, "Influential factors and spatiotemporal patterns of environmental sound levels in the contiguous United States," Noise Control Engineering Journal, 64 (2016):342-353.

D. J. Mennitt, K. Fristrup, and K. Sherrill, "A geospatial model of ambient sound pressure levels in the contiguous United States," The Journal of the Acoustical Society of America 135 (2014):2746-2764.

D. J. Mennitt, K.M. Fristrup, "Obtaining calibrated sound pressure levels from consumer digital audio recorders," Applied Acoustics 73 (2012):1138-1145.

K. M. Fristrup, and D. J. Mennitt. "Bioacoustical monitoring in terrestrial environments." Acoustics Today 8:16-24 (2012).

D. J. Mennitt, and M. Johnson, "Multiple-array passive acoustic source localization in urban environments," The Journal of the Acoustical Society of America, 127.5 (2010): 2932-2942.

M. Ermann, M. R. F. Kidner, and D. J. Mennitt, "Mapping the sound field of a 400 seat theater," Building Acoustics 13.3 (2006):199-210.

Conference Proceedings

D. J. Mennitt, M. F. McKenna, and K. M. Fristrup, "Continental perspectives of noise exposure and its effects," INTER-NOISE and NOISE-CON Congress and Conference Proceedings, 255 (2017):1168-1172.

D. J. Mennitt and K. Fristrup, "Influential factors and spatiotemporal patterns of environmental sound levels," INTER-NOISE and NOISE-CON Congress and Conference Proceedings, 250 (2015):2029-2040.

D. J. Mennitt, K. Fristrup, K. Sherrill, and L. Nelson, "Mapping sound pressure levels on continental scales using a geospatial sound model," INTER-NOISE and NOISE-CON Congress and Conference Proceedings, 1 (2013):1-11.

D. J. Mennitt, P. Gillett, J. Carneal and M. Johnson, "Tracking Noise Sources Using Multiple Mobile Microphone Arrays," Thirteenth International Congress on Sound and Vibration, Vienna, Austria (2006):1-8.

Technical reports

D. J. Mennitt and B. J. Ikelheimer, "Geospatial sound modeling for military and community noise metrics," Prepared for the United States Army (2017).

Presentations

D.J. Mennitt, D. Joyce, and K. Fristrup, "Benefits and challenges of using consumer audio equipment for unattended acoustical monitoring," The Journal of the Acoustical Society of America, 144, 1828 (2018).

J. A. Casey, A. Shev, D. Paksarian, K. R. Merikangas, D. J. Mennitt, and K. E. Rudolph, "Association between exposure to noise and sleep and mental health outcomes in a nationally-representative sample of U.S. adolescents," 2018 Annual Conference of the International Society for Environmental Epidemiology (2018).

K. Fristrup, M.F. McKenna, and D.J. Mennitt, "Forecasting increases in recreational value that would result from restoration of natural soundscapes in National Parks," The Journal of the Acoustical Society of America, 143, 1806 (2018).

M. F. McKenna, D. J. Mennitt, M. Thompson, J. Stanley, S. Van Parijs, K. M. Fristrup, and L. Hatch, "Including acoustical features in marine ecological prediction," NOAA-Navy Workshop: Soundscape Metrics to Support Marine Protected Area Management, Woods Hole Oceanographic Institution, MA (2018).

D. J. Mennitt, "Classification of wind induced pseudo noise using low resolution features," National Park Service, Natural Resource Stewardship and Science, Fort Collins, CO (2017).

D. J. Mennitt, Megan F. McKenna, and Kurt M. Fristrup, "Continental perspectives of noise exposure and its effects," INTER-NOISE and NOISE-CON Congress and Conference Proceedings, 255 (2017):1168-1172.

D. J. Mennitt and K. Fristrup, "Gain and directivity of exponential horn receivers," The Journal of the Acoustical Society of America 140, 3140 (2016).

D.J. Mennitt and K. Fristrup, "Anomaly detection and other practical considerations for estimating acoustical metrics from time series data," The Journal of the Acoustical Society of America, 140, 3424 (2016).

D. J. Mennitt and K. M. Fristrup, "A geospatial approach to mapping environmental sound levels across the United States," American Society for Photogrammetry and Remote Sensing, Geobytes (2016).

J. A. Casey, R. Morello-Frosch, D. J. Mennitt, K. M. Fristrup, and P. James, "The distribution of noise pollution along racial and socioeconomic lines in the United States," 28th Annual Conference of the International Society of Environmental Epidemiology, Rome, Italy (2016).

P. James, R. Banay, D. J. Mennitt, K. Fristrup, J. Africa, J. Hart, F. Laden, "Noise and Cardiovascular Disease in a Nationwide Cohort Study," 28th Annual Conference of the International Society of Environmental Epidemiology, Rome, Italy (2016).

R. T. Buxton, M. McKenna, E. Brown, D. J. Mennitt, K. Fristrup, K. Crooks, L. Angeloni, G. Wittemyer, "Noise Exposure in U. S. Protected Areas," American Association for the Advancement of Science, Washington DC (2016).

D. J. Mennitt, L. Hatch, K. M. Fristrup, M. Thompson, D. Cholewiak, M. F. McKenna, P. Auster and S. Van Parijs, "A geospatial approach to exploring the soundscape of Stellwagen Bank National Marine Sanctuary," Oceanoise 2015, Vilanova i la GeltrÚ, Spain (2015).

D. J. Mennitt, E. Brown, and K.M. Fristrup, "Assessing the condition of acoustical resources across the National Park Service Units," 2015 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites, Oakland, CA (2015).

M. F. McKenna, K. M. Fristrup, and D. J. Mennitt, "Predicting historic and current sound levels from point measurements: a geospatial model," Science for Parks, Parks for Science: The Next Century, Berkeley, CA (2015).

K. Fristrup, D. Joyce, E. Lynch, M. Mckenna, D. J. Mennitt, "Monitoring and modeling sound levels at landscape scales in U. S. National Parks," Ecology and acoustics: emergent properties from community to landscape, Paris, France (2014).

D. Risch, P. Auster, D. Cholewiak, K. Fristrup, L. Hatch, M. McKenna, D. Mennitt, M. Thompson, and S. Van Parijs, "Monitoring bio-acoustic activity & geospatial models of ambient sound: Applications in a marine sanctuary," Ecology and acoustics: emergent properties from community to landscape, Paris, France (2014).

C. Walker, S. Buxner, D. J. Mennitt, C. Cooper, S. O'Connor, and S. M. Pompea, "Using NGSS to Shape Research Projects with Citizen-Science Data," Astronomical Society of the Pacific Annual Meeting, Burlingame, California (2014).

D. J. Mennitt, K. Fristrup, and K. Sherrill, "A geospatial model of ambient sound pressure levels in the continental United States," The Journal of the Acoustical Society of America 132, 1926 (2012).

D. J. Mennitt, "Spatial variation of natural ambient sound pressure levels in Rocky Mountain National Park." The Journal of the Acoustical Society of America 129, 2617 (2011).M. Ermann, J. Carneal, D. Mennitt, C. Jackson, B. Karmarkar, M. Helveston, and P. Clay, "Sound transmission loss of nontraditional building materials and redundancies," The Journal of the Acoustical Society of America 122(5) (2007).

D. J. Mennitt, M. Johnson, and J. Carneal, "Coarse classification of acoustic signals using temporal and spectral characteristics," Journal of the Acoustical Society of America 121(5):3046 (2007).

J. Carneal, M. Johnson, D. J. Mennitt, and P. Gillett, "Localization and tracking noise sources with autonomous vehicles: from node processing to central command fusion and tracking," Acoustical Society of America's North Carolina Chapter, Raleigh, NC (2006).

D. J. Mennitt, "Numerical accuracy of virtual acoustic prototyping: determination of the minimum size of the evaluation sphere to achieve accurate local simulation," Acoustical Society of America's North Carolina Chapter, Raleigh, NC (2006).

D. J. Mennitt, J. Redenshek, A. Tawney "Acoustical mapping of the lyric theater," Acoustical Society of America's North Carolina Chapter, Blacksburg, VA (2005).

Peer Reviewer

Noise Control Engineering Journal

Journal of the Acoustical Society of America

Environment International Journal

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Anna Murphy

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
ANNA MURPHY
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Anna Murphy.

Q. Please state the name of your employer and its business address.

A. I am employed by INSPIRE Environmental, which has a business address of 513 Broadway, Suite 314, Newport, Rhode Island 02840.

Q. In what capacity are you employed?

A. I am a Senior Scientist.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I earned my PhD in Marine Science from the Virginia Institute of Marine Science at the College of William & Mary in 2015. I hold a BS in Biology from Fairfield University, Fairfield CT (2007). I have five years of experience in environmental consulting, with a focus on aquatic environments. This includes three years prior to graduate school when I worked as a member of the field team at Battelle. In my current role at INSPIRE, I am involved in data generation, data analysis, synthesis, and visualization, and report writing. Prior to INSPIRE, I spent four years as a postdoctoral researcher at Northeastern University where I contributed to research investigating the importance of microbial communities in cycling nutrients and carbon in coastal environments.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I wrote the Benthic Resources Characterization Report within New York State waters, which reports the results of a site-specific benthic survey using sediment profile and plan view imaging. I reviewed the benthic section of the Article VII application.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-G (Benthic Resources Characterization Report – New York State Waters)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

513 Broadway, Suite 314 | Newport, RI 02840 | (401) 608-2738
annie@INSPIREenvironmental.com

ANNA MURPHY | Senior Scientist

Education
Ph.D. Marine Science, College of William & Mary, Virginia Institute of Marine Science, 2016
B.S. Biology, Fairfield University, 2007

Areas of Specialization
Coastal Ecology
Benthic Biogeochemistry
Microbial Ecology and Bioinformatics
Aquaculture

Professional Memberships
Coastal and Estuarine Research Federation (CERF)
Association for the Sciences of Limnology and Oceanography (ASLO)
National Shellfisheries Association (NSA)

Employment History
2019-present – Senior Scientist, INSPIRE Environmental, LLC, Newport, RI
2018-2019 – Project Scientist, INSPIRE Environmental, LLC, Newport, RI
2016-2019 – Postdoctoral Researcher, Marine Science Center, Northeastern University, Nahant, MA
2010-2016 – Virginia Sea Grant Graduate Research Fellow, College of William & Mary
2007-2010 – Research Technician, Battelle Memorial Institute, Duxbury, MA
2005-2010 – Research Staff, Martha's Vineyard Shellfish Group, Vineyard Haven, MA

EXPERIENCE SUMMARY

Dr. Annie Murphy is a marine scientist with expertise in benthic biogeochemistry, microbial ecology, aquaculture research, and marine environmental change. Her expertise lies at the interface between benthic community ecology and biogeochemistry with a specific interest in the response of aquatic ecosystems to anthropogenic disturbances. She has investigated the ecological effects of shellfish cultivation in coastal waters from the Chesapeake Bay, VA to the Sacca di Goro, Italy, the influence of nutrient enrichment on microbial communities in New England salt marshes and shifts in salt marsh community dynamics along an urbanization gradient in the greater Boston area. More recently she has been involved in projects assessing the benthic environments on the continental shelf within offshore wind energy leased areas.

PROFESSIONAL EXPERIENCE

Benthic Habitat Assessment for Offshore Wind Development
Dr. Murphy is involved in data generation, analyses, interpretation, and reporting for several offshore wind projects. She is experienced in analyzing sediment profile images to assess the benthic environment within the context of offshore wind development. With these analyses she utilizes the national habitat classification standard, the Coastal and Marine Ecological Classification Standard (CMECS), recommended by BOEM for benthic habitat assessments. Specific projects include Ørsted's planned South Fork, Skipjack, Revolution, Ocean Wind, and Sunrise Wind Farms.

Microbial Community Analyses to Investigate the Response of Coastal Systems to Perturbations
As a postdoctoral scientist, Dr. Murphy investigated the microbial community structure, composition, and function of coastal benthic habitats, including salt marsh restoration. She is experienced in prepping DNA and RNA libraries for next generation high throughput sequencing. She is well-versed in a variety of bioinformatics pipelines to process, analyze, and interpret these big datasets. Within the context of salt marsh restoration, projects aimed to compare microbial community shifts post-restoration and to more pristine sites, including locations on Cape Cod and Boston, MA. Other projects include investigating the response of microbial communities to large-scale and prolonged nutrient enrichment at the Plum Island Long Term Ecological Research Site in Massachusetts. She also used stable isotope probing of microbial RNA to investigate the carbon sources in salt marsh microbial food webs. She supported research investigating the controls on blue carbon sequestration in salt marsh peat, including the use of anaerobic flow-through bioreactors to tease apart mechanisms controlling the microbial decomposition of complex organic matter substrates.

Assessing Shifts in Benthic Biogeochemical Cycling in Response to Large Scale Aquaculture Operations
Dr. Murphy has extensive experience measuring rates of benthic biogeochemical processes including sediment oxygen demand, remineralization rates, denitrification, and dissimilatory nitrate reduction to ammonium (DNRA) at a variety of coastal environments. She led research investigating the interactions of commercial scale clam and oyster aquaculture operations with the coastal environment with a focus on carbon and nitrogen biogeochemical cycling. Using isotope tracer approaches, including isotope pairing technique, Dr. Murphy determined how rates of nitrogen removal and nitrogen recycling pathways are affected by clam cultivation in the shallow waters of Chesapeake Bay and within the Sacca di Goro, Italy.

PEER-REVIEWED PUBLICATIONS

J.L. Bowen, A.E. Giblin, **A.E. Murphy,** A. Bulseco, L. Deegan, D. Johnson, J. Nelson, T. Mozdzer, H. Sullivan. (accepted). Not all nitrogen is created equal: Differential effects of nitrate versus ammonium enrichment in coastal wetlands. *BioScience*

Murphy, A.E., A. Bulseco-McKim, R. Ackerman, and J.L. Bowen. (2020). Sulfide addition favors respiratory ammonification (DNRA) over denitrification and alters the active microbial community in salt marsh sediments. *Environmental Microbiology*

A. Bulseco-McKim, J. Vineis, **A.E. Murphy**, A.C. Spivak, A.E. Giblin, J. Tucker, and J.L. Bowen. (2019). Metagenomics coupled with biogeochemical rates measurements provide evidence that nitrate addition stimulates respiration in salt marsh sediments. *Limnology and Oceanography*

Murphy, A.E., R. Kolkmeyer, B. Song, I.C. Anderson, and J.L. Bowen. (2019). The bioreactivity and microbiome of biodeposits from filter feeding bivalves. *Microbial Ecology*

Bulseco-McKim, A., A.E. Giblin, J. Tucker, **A.E. Murphy**, K. Hiller, and J.L. Bowen. (2019). Nitrate addition stimulates microbial decomposition of organic matter in salt marsh sediments. *Global Change Biology*

Murphy, A.E., D. Nizzoli, M. Bartoli, A.R. Smyth, G. Castaldelli, I.C. Anderson. 2018. Variation in benthic metabolism and nitrogen cycling across clam aquaculture sites. *Marine Pollution Bulletin* 127: 524-535. DOI 10.1016/j.marpolbul.2017.12.003

Smyth A.R., **A.E. Murphy,** I.C. Anderson, B. Song. 2017. Differential effects of bivalves on sediment nitrogen cycling in a shallow coastal bay. *Estuaries and Coasts.* DOI 10.10007/s12237-017-0344-9

Murphy, A.E., I.C. Anderson, A.R. Smyth, M.W. Luckenbach, B. Song. 2016. Dissimilatory nitrate reduction to ammonium (DNRA) exceeds denitrification in hard clam cultivation sediments. *Limnology and Oceanography* 61: 1589-1604. DOI 10.1002/lno.10305

Murphy, A.E., K.A. Emery, I.C. Anderson, M.L. Pace, M.J. Brush, J.E. Rheuban. 2016. Quantifying the effects of commercial clam aquaculture on carbon and nitrogen cycling: An integrated ecosystem approach. *Estuaries and Coasts* 39: 1746. DOI 10.1007/s12237-016-0106-0

Murphy, A.E., I.C. Anderson, and M.W. Luckenbach. 2015. Enhanced nutrient regeneration at commercial hard clam (*Mercenaria mercenaria*) beds and the role of macroalgae. *Marine Ecology Progress Series* 530: 135-151. DOI 10.3354/meps11301

D.J. Brousseau, **A.E. Murphy**, N.P. Enriquez, K. Gibbons. 2008. Foraging by two estuarine fishes, *Fundulus heteroclitus* and *Fundulus majalis*, on Juvenile Asian Shore Crabs (*Hemigrapsus sanguineus)* in Western Long Island Sound. *Estuaries and Coasts* 31: 144-151. DOI 10.1007/s12237-007-9006-7

Invited Seminars

Scripps Institution of Oceanography, University of San Diego. La Jolla, CA. Ecology Seminar Series. From molluscs to marshes: Effects of microbial competition on nitrogen cycling in coastal systems. Fall 2018.

Northeastern University, Nahant, MA. Department of Marine and Environmental Sciences Seminar Series. From molluscs to marshes: how microbial competition affects nitrogen cycling in coastal systems. Fall 2017.

Fairfield University, Fairfield, CT. Biology Department Lecture Series. Mud, Molluscs, and Microbes…oh my! Effects of clam aquaculture on nitrogen dynamics in shallow coastal ecosystems. Spring 2016.

University of Parma, Parma, Italy. Impacts of *Mercenaria mercenaria* aquaculture on sediment biogeochemistry in Chesapeake Bay, VA. Fall 2012.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of John Neill

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
JOHN NEILL
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is John Neill.

Q. Please state the name of your employer and its business address.

A. I am employed by AKRF, Inc., which has a business address of at 440 Park Avenue South, New York, New York 10016.

Q. In what capacity are you employed?

A. I am a Vice President and director of AKRF's Economic and Real Estate Advisory Services practice.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have undergraduate degrees in Economics and Public Policy Studies from Duke University, a Master of Business Administration from the Yale School of Management, and a Master of Environmental Studies from the Yale School of the Environment. I have worked at AKRF in the fields of economics and environmental planning for 22 years and have served as the head AKRF's economics department since 2007.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I provided direction and advisory support to AKRF staff for the analysis and preparation of reporting associated with Exhibit 6 (Economic Impact) and Appendix 6-A (Economic Modeling Report).

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 6 (Economic Impact) and Appendix 6-A (Economic Modeling Report)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

JOHN NEILL

SOCIOECONOMICS / ENVIRONMENTAL JUSTICE

John Neill is the director of the firm's Economic and Real Estate Advisory Services practice and has been an Economist with AKRF for 20 years. Mr. Neill emphasizes a multi-disciplinary approach to analyses, stressing the need to inform work products with a range of considerations including demographics, land uses, neighborhood character, and market trends.

Mr. Neill performs market and feasibility studies and economic and fiscal impact analyses, and provides redevelopment and financing strategy to public and private clients. Mr. Neill also serves as a project manager for major Environmental Impact Statements (EISs), such as the New York University (NYU) 2031 Manhattan Core Plan, and is the technical lead on EIS socioeconomic analyses. In addition, Mr. Neill has a particular expertise in developing public survey and outreach strategy. He designs merchant and consumer survey instruments, coordinates outreach efforts, and facilitates public discussions for development projects, policy making, and design development. He has worked extensively with community boards and other stakeholder groups, and recognizes the importance of understanding the unique characteristics, challenges, and opportunities presented by a neighborhood.

BACKGROUND

Education

B.A., Economics and Public Policy Studies cum laude, Duke University, 1993

M.B.A., Yale School of Management, 2000

M.E.S., Yale School of Forestry and Environmental Studies, 2000

Professional Memberships

Urban Land Institute (ULI)

International Council of Shopping Centers (ICSC)

Years of Experience

Year started in company: 2000

Year started in industry: 1993

RELEVANT EXPERIENCE

Confidential Client – 316(b) Compliance Support

Mr. Neill is providing technical support for AKRF's oversight of detailed 316(b) cost and benefit assessments generated by AKRF's sub-consultant. He works to ensure that the analyses follow all applicable regulatory requirements, provides quality assurance/quality control, and is providing strategy support during the peer review process.

Suffolk County Master Plan, Suffolk County, NY

AKRF was retained by the Suffolk County Department of Planning and Economic Development to complete the Suffolk County Comprehensive Master Plan–2035, which examines a broad range of issues facing the County now and into the future. Mr. Neill was a project advisor for assessments related to housing and economic development strategy.

Nassau Coliseum Redevelopment Economic Impact Analysis, Nassau County, NY

AKRF provided economic and fiscal impact analyses in support of Forest City Ratner Companies' (FCRC's) successful bid to redevelop Nassau Memorial Coliseum in Nassau County, New York. Mr. Neill managed AKRF's analysis and presented the findings at FCRC's interview with Nassau County.

Downtown Yonkers Redevelopment Review, Yonkers, NY

On behalf of the City of Yonkers City Council, AKRF reviewed and refined the EIS for the $1.6-billion mixed-use downtown redevelopment plan proposed by the development team of Stuever Fidelco Cappelli (SFC). The development plan included nearly 1,400 housing units, 1.2 million square feet of commercial uses, nearly 5,000 parking spaces and a minor league ballpark. Mr. Neill prepared guidance documents for Yonkers City Council to facilitate their review of the project, and provided expert testimony at City Council hearings.

Economic and Fiscal Impact Assessment, Quincy, MA

Mr. Neill served as a Project Manager for AKRF's work in analyzing the economic and fiscal benefits associated with a public-private partnership in the redevelopment of Quincy Center in downtown Quincy, MA. Mr. Neill managed the work of several assessments: an econometric evaluation of the benefits from the construction and operation of the project; a tax increment assessment of future municipal revenues; an assessment of revenues and costs associated with the public investment in the project; and a case study of how such downtown projects effect the overall economic base of the larger municipality.

Cost of Services Study, Beacon, NY

The City of Beacon retained AKRF to estimate the economic and fiscal impacts of six development projects that collectively would introduce to the city nearly 1,400 dwelling units, over 130,000 square feet of commercial space, a 166-room hotel and conference center, and over 3,000 parking spaces. AKRF estimated the economic and fiscal benefits of the project, estimated the project-generated populations (including school-aged children), and projected the fiscal costs and revenues to the City of Beacon and the Beacon City School District. Mr. Neill was Principal-in-Charge of the study, and formulated a methodology to provide department-level fiscal impact projections that applied cost factors dependent upon the unique characteristics of each development project. Mr. Neill also presented the findings at stakeholder sessions and a Beacon City Council hearing.

Brooklyn Queens Expressway (BQE), Value Capture Analysis, Brooklyn, NY

For the New York City Department of Transportation (NYCDOT), AKRF quantified the value capture potential of new development and incremental value related to the removal of the BQE, an elevated urban highway. The analysis focused on three major value generation aspects: a) sales revenues from outright sales of properties currently occupies by the infrastructure; b) incremental property value increase of parcels adjacent to the BQE due to increased quality of life and connectivity; and c) overall economic development benefits and increases in business activities and jobs. AKRF also identified mechanisms applied nationally and internationally, such as private-public partnerships and tax increment financing, to monetize future cash flow streams. Mr. Neill managed the risk assessment for the project.

Sunrise Wind LLC

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Direct Testimony of Daniel Nein

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
DANIEL NEIN
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Daniel G. Nein.

Q. Please state the name of your employer and its business address.

A. I am employed by Stantec Consulting Services Inc., which has a business address of 30 Park Drive, Topsham, Maine 04086.

Q. In what capacity are you employed?

A. I am a Senior Associate in the Environmental Services division.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. My career includes more than 20 years of professional experience, employed by Stantec Consulting Services Inc. (Stantec) for over 17 of those years during two separate periods: 2001–2004 and 2006–present. In 2001, I began as an environmental technician/scientist performing wetland, ecological, and wildlife assessments for compliance with resource regulations. During my second period of employment, I continued in this capacity and took on additional roles as a project manager and supervisor. In 2018, my role became a senior associate and in 2020 I was appointed an account manager for a New England-based utility company.

From 2004 to 2006, I was employed by the Commonwealth of Massachusetts's Division of Fisheries and Wildlife, serving as an Endangered Species Regulatory Review Biologist for the Natural Heritage and Endangered Species Program.

In 2000, I graduated from the University of Maine (Orono) with a Bachelor of Science in Wildlife Ecology. Since 2009 I have been recognized as a Certified Wildlife Biologist® by The Wildlife Society.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. Since early 2020, I have served as one of Stantec's subject matter experts. My specific focus is terrestrial ecological resources associated with the proposed onshore facilities. I provided technical guidance, supervision and oversight of Stantec's field-based assessments to characterize onshore ecological resources including wetlands, natural communities, significant fish and wildlife habitats, invasive plants, and rare species habitat, which in part, support project planning, siting/routing, and design. My role also included oversight, input, and direct supervision during the development the Wetland and Ecological Resources Report as part of the Article VII application.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-E (Onshore Ecological Assessment and Field Survey Report)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Daniel Nein CWB

Senior Associate, Certified Wildlife Biologist
20 years of experience · Topsham, Maine

As Senior Associate and Certified Wildlife Biologist, Dan is responsible for the design and implementation of natural resource assessments; wildlife and habitat studies; vernal pool and wetland surveys; construction compliance observation, project management, and regulatory compliance support throughout a project's life cycle. Dan assists with meeting project design goals that avoid, minimize, and mitigate impacts in compliance with resource regulations. He has also provides project management and field support during emergency spill responses, including natural resource characterization and operational planning that avoids and minimizes natural resource impacts during cleanup.

Before Stantec, Dan was an Endangered Species Review Biologist at the Massachusetts Natural Heritage and Endangered Species Program and conducted regulatory review of activities for compliance with rare species performance standards under the Massachusetts Endangered Species Act (MESA) and Wetlands Protection Act (WPA); and the Massachusetts Environmental Policy Act (MEPA). Prior to this, he assisted with a Blanding's turtle radio telemetry study; Adirondack Mountains forest biodiversity study; and Maine coastal seabird restoration.

EDUCATION

Bachelor of Science, Wildlife Ecology (Concentration in Conservation Biology), University of Maine, Orono, Maine, 2000

Tropical Ecology Field Course in Belize, University of Maine, Maine, 1999

Tropical Ecology Field Course in Honduras, University of Maine, Maine, 1998

CERTIFICATIONS & TRAINING

Adult CPR and AED, American Red Cross, Topsham, Maine, United States, 2020

8-Hour HAZWOPER Refresher, OSHA, Topsham, Maine, United States, 2020

Certified Wildlife Biologist #31666, The Wildlife Society, Bethesda, Maryland, 2009

10-Hour Construction Safety & Health Certification, OSHA, Topsham, Maine, United States, 2009

40-Hour HAZWOPER Certification, OSHA, Topsham, Maine, United States, 2002

MEMBERSHIPS

Member, The Wildlife Society

Member, Vernal Pool Association

Member, Northeast Partners in Amphibian and Reptile Conservation

Member, Bat Conservation International

AWARDS

2000 Outstanding Senior Award - University of Maine

2000 Wildlife Leadership Award - Rocky Mountain Elk Foundation

PROJECT EXPERIENCE

DAM REMOVAL

Kate Furbish Preserve Dam Removal and Restoration | Brunswick, Maine | Project Manager

Collaborated with Maine Coast Heritage Trust and managed natural resource characterization and engineering restoration design, and preparation of state and federal permit applications. Dam removal completed in 2016.

Hamant Brook Dams Removal, Wood Turtle Habitat Management Plan and Compliance Monitoring | Sturbridge, Massachusetts | Technical Lead

Conducted a wood turtle habitat assessment during project design to inform development of a Wood Turtle Habitat Management Plan for the removal of three dams and coordinated NHESP approval to comply with MESA. Responsible for implementing the plan including contractor training, pre-construction turtle searches/relocation, and initial construction observation.

Penobscot River Dam Removals | Penobscot County, Maine | Technical Lead

Conducted shoreline natural resource assessment for potential removal of two dams on the Penobscot River and implementation of alternative fish passage scenarios at a third dam on a tributary entering the Penobscot River. Tasks included wetland reconnaissance and mapping, rare species habitat assessments, invasive/exotic plant management recommendations, and identification of shoreline erosion. Rare species assessments included extra-striped snaketail, Orono sedge, Barrow's goldeneye, wood turtle, and bald eagle.

Sackett Brook Dam Removal, Wood Turtle Habitat Management Plan and Compliance Monitoring | Pittsfield, Massachusetts | Technical Lead

Developed a Wood Turtle Habitat Protection Plan for a dam removal project and coordinated NHESP approval to comply with MESA. Responsible for implementing the plan including contractor training, pre-construction turtle searches/relocation, and construction observation to evaluate compliance during construction.

Rehabilitation of Upper Mystic Lake Dam | Medford and Arlington, Massachusetts | Project Scientist

Conducted a wildlife habitat evaluation of the of Upper Mystic Lake Dam project site per MassDEP Wildlife Habitat Protection Guidance. Evaluated potential project impact to identified on-site wildlife habitat interests protected under the MWPA to assist DCR project planning.

RENEWABLE ENERGY

Industrial Wind Project, Wetland and Vernal Pool Surveys | Maine | Project Scientist

Assisted with wetland delineations and vernal pool surveys at an approximately 58,000 acre site of a proposed wind energy facility in Aroostook County, Maine. Assisted with determination of wetland boundaries using the technical criteria described in the U.S. Army Corps of Engineers wetland delineation manual and identified streams and Wetlands of Special Significance based on the criteria in the ME Department of Environmental Protection Natural Resources Protection Act.

Solar Project, Eastern Box Turtle Habitat Assessment | Halifax, Massachusetts | Technical Lead

Conducted a habitat assessment for the Eastern box turtle per NHESP habitat assessment guidance at a 20-acre site proposed for a 2.5 MW facility. Conducted on-site agency consultation with the NHESP to develop design alternatives and project conditions to avoid a “take” under MESA and developed Operations and Maintenance criteria to avoid and minimize direct physical harm and habitat impacts.

Natural Resource Construction Observation and Compliance Services, EDF Renewable Energy, Solar Facility | Lancaster, Massachusetts | Technical Lead

Supported Stantec’s Owners Representation and Independent Engineering (IE) services for an approximately 6 MW solar facility at a former. Prepared an IE environmental compliance report to identify potential compliance constraints with respect to threatened and endangered species, cultural and historical resources, wetlands, and land use/zoning. Participated in pre-construction meeting with the design team, contractors and agency representatives to discuss resource protection measures in compliance with the WPA and Lancaster Wetlands Bylaw and performed construction observation during initial construction.

NextEra Energy Eight Point Wind Energy Center | Steuben County, New York | Project Manager

Managed a team to develop work plans through consultations with NYSDEC and USFWS and perform pre-construction bird and bat surveys to support development of an Article 10 application for proposed ~100 MW facility. The following surveys were completed: eagle/raptor, breeding bird, fall/spring migrants, and acoustic and mist-netting for listed bats. Stantec also prepared habitat fragmentation and cumulative effects analyses for the application.

Bull Hill Wind Project | Eastbrook, Maine | Technical Support

Developed and coordinated approval of bird and bat study plan with MDIFW and USFWS for pre-construction bird and bat surveys, including nocturnal marine radar, diurnal raptor and eagle, and acoustic bat surveys.

Holiday Hill Community Wind Project, Environmental Critical Issues Analysis | Massachusetts | Project Scientist

Conducted a reconnaissance field survey to evaluate potential wetland, wildlife, and rare, threatened, and endangered species at the proposed project, including a wildlife habitat assessment per MassDEP Wildlife Habitat Protection Guidance. Assisted summary report to assist project planning and permitting requirements.

Vermont Community Wind Farm | Rutland County, Vermont | Project Manager

Conducted ecological critical issues analysis to evaluate existing natural resources, particularly natural communities, wildlife, and rare, threatened, and endangered species. Developed and coordinated approval of a study plan for pre-construction spring and fall bird and bat surveys following guidance from VANR and USFWS for this proposed 80 MW project. Coordinated field staff during nocturnal radar, diurnal raptor and breeding bird, acoustic bat, and bat mist-net surveys. Participated in pre-permitting agency consultations to present survey results and evaluate potential project impacts to support project planning and preparation of permit applications.

Hounsfield Wind Project Pre-Construction Blanding’s Turtle Nesting and Aquatic Trapping Surveys | Galloo Island, New York | Project Scientist

Developed field survey methodology in accordance with NYSDEC guidance and conducted diurnal aquatic trapping and nocturnal terrestrial nesting surveys to assess the presence of and nesting activity of turtles on-island to support impact analysis of proposed wind energy project.

Hounsfield Wind Project Indiana Bat Habitat Assessment | Jefferson and Oswego Counties, New York | Technical Co-Lead

Assisted with a desktop landscape and ground-based habitat assessment to assess and characterize potential suitable roost habitat for Indiana bat within a proposed 42.5 mile transmission line to support project routing that avoided and minimized resource impacts.

Wind Power Projects Pre-construction Studies | Various Sites in New England and the East Coast | Project Scientist

Conducted ecological fatal flaw analyses to evaluate potential local and regional natural resources, particularly natural communities; wetlands; birds; bats; and rare, threatened, and endangered species. Conducted nocturnal marine radar surveys, diurnal breeding bird and raptor surveys and post-construction bird and bat mortality surveys.

OIL & GAS

Connecticut Expansion Natural Gas Pipeline, Environmental Construction Observation | Sandisfield, Massachusetts | Project Manager/Field Lead

On behalf of the Massachusetts Department of Conservation and Recreation (DCR), Stantec was contracted by Tennessee Gas Pipeline Company LLC, a subsidiary of Kinder Morgan, to perform construction observation as a third-party environmental monitor of compliance with environmental approvals and permits along approximately 2 miles of the project that occurs on land managed by DCR. Construction observation included evaluation and third-party reporting of project compliance with the following environmental approval and permits: Federal Energy and Regulatory Commission (FERC) Certificate, National Pollution Discharge Elimination System Construction General Permit, Clean Water Act Section 404 permit, 401 Water Quality Certification, Massachusetts Wetlands Protection Act Order of Conditions, and Massachusetts Environmental Policy Act Certificate.

TransCanada Prince Rupert Gas Transmission Project | Smithers, British Columbia | Project Scientist

Conducted baseline fisheries inventories and aquatic habitat assessments as part of a comprehensive Environmental Assessment evaluating potential effects of proposed routing of a 750km liquefied natural gas (LNG) pipeline originating at the Prince Rupert terminal facility. Responsibilities included compliance with TransCanada safe work practices to complete aquatic habitat assessments evaluating watercourse geomorphology, water quality, vegetation, and fish habitat suitability characterization, electrofishing surveys, and logistical coordination with First Nations representatives and helicopter pilots.

Mountaineer Xpress Gas Pipeline Rare Bat Surveys | Multiple Counties, West Virginia | Project Manager

Managed a team conducting rare bat presence/absence and habitat suitability surveys within portions of the 160-plus mile long project proposed in eleven counties by the Columbia Pipeline Group (CPG). Specifically, Stantec conducted acoustic bat monitoring and mist-netting surveys for state and federally-listed bat species including northern long-eared bat and Indiana bat; and conducted bat habitat suitability surveys to evaluate and characterize potential hibernacula and summer roost habitat using guidance developed by the USFWS and WVDNR. Data supported development of state and federal permit applications, including an application to the FERC for approval to construct the project.

TransCanada Energy Coastal Gaslink Pipeline Project | Kitimat, British Columbia, Canada | Co-Technical Lead

Served as technical lead for aquatic resources and managed a team of Stantec and environmental subcontractors for Section 8 of the proposed 416-mile long pipeline. Primary duties included direct supervision and oversight of staff evaluating riparian habitat prior to and monitoring fisheries resources during initial project construction. Also performed data quality control for team; and assisted with field assessment and construction observation.

WATER AND SEWER

Hannegan Brook Well, Eastern Box Turtle Protection Plan | Montague, Massachusetts | Project Scientist

Developed and coordinated approval of an Eastern Box Turtle Protection Plan with the NHESP in compliance with MESA for upgrades to the town's well. Responsible for implementing the plan including pre-construction turtle searches/relocation and construction observation, during initial site preparation.

Emera Bridgeport Energy Facility 316(b) Clean Water Act Peer Review | Bridgeport, Connecticut | Project Manager

Project manager of a multidisciplinary team conducting a peer review of engineering, economic, and biological requirements submitted to CT DEEP in compliance with section 316(b) of the Clean Water Act. Stantec's efforts focused on review and recommendations related to processes, operation, and design alternatives to minimize entrainment impacts during key migratory and spawning periods of certain fish species at this operational combined cycle facility.

Green Lodge Sewer Replacement, Blanding's Turtle Habitat Assessment and Protection Plan | Canton, Massachusetts | Technical Lead

Conducted a habitat assessment for Blanding's Turtle within the project site per NHESP habitat assessment guidance for Green Lodge Sewer Replacement project. Developed and implemented a Blanding's Turtle Protection Plan to support MESA compliance. Plan included contractor training, pre-construction turtle searches/relocation, multi-year construction observation wildlife barrier monitoring.

Country Road Well, Blanding's Turtle Protection Plan and Construction Monitoring | Westford, Massachusetts | Project Manager and Technical Lead

Developed and implemented a Blanding's Turtle Protection Plan with the NHESP in compliance with MESA for the construction of a municipal water pump station. The Plan included pre-construction turtle searches/relocation and construction observation.

Well #6, Eastern Box Turtle Protection Plan and Construction Monitoring | Brewster, Massachusetts | Project Manager and Technical Lead

Developed and implemented an Eastern Box Turtle Protection in compliance with MESA for construction of a new municipal well. Plan included methodology for pre-construction turtle searches/relocation, construction observation, and wildlife barrier monitoring.

Wellfield 4A, Blanding's Turtle Habitat Assessment | Maynard, Massachusetts | Technical Lead

Conducted Blanding's turtle habitat assessment of new proposed town wellfield for new groundwater source adjacent to the Assabet River National Wildlife Refuge. Supported NHESP consultations as part of multidisciplinary team that developed an adaptative approach for conditional no take approval under MESA.

Damon Wells, Eastern Box Turtle Protection Plan | Duxbury, Massachusetts | Technical Lead

Developed and implemented an Eastern Box Turtle Protection in compliance with MESA for construction of a municipal water pump station. Plan included methodology for pre-construction turtle searches/relocation, construction observation, and wildlife barrier monitoring.

ENVIRONMENTAL ASSESSMENTS – ELECTRICAL TRANSMISSION

HEEC Cable Removal Project | Boston Harbor, Massachusetts | Project Manager

Managing multi-disciplinary team providing permitting support for removal an existing ~8,000-foot long subsurface electric cable from the Reserved and Federal Navigation Channels that followed installation of a new cable powering Deer Island Sewage Treatment Plant. Team also performed marine sediment sampling and laboratory analysis to obtain a Suitability Determination from the USACE and USEPA. Permit applications included a NOI to the Boston Conservation Commission, Section 401/WQC and Chapter 91 to MassDEP Notice of Project Change to MEPA, and amended Section 404/Individual Permit to USACE, including Coastal Zone Management Consistency Review and Section 7 for listed species.

Eversource Line 84 Maintenance | Wareham, Massachusetts | Project Manager

Managed team that performed coastal and inland wetland resource delineation, mapping, and preparation of permit applications for maintenance of 12 structures. Applications submitted for Section 404/Individual Permit from USACE, Section 404/WQC and Chapter 91 Minor Modification from MassDEP, Federal Aviation Association review, and Project Notification Form to Mass Historical Commission.

Eversource Line 1962 Maintenance | Western Massachusetts | Technical Lead

Supported MESA permitting strategy, NHESP consultations, and design, including a site walk through with Eversource to avoid, minimize, and mitigate for multiple MESA-listed reptiles, including state-listed venomous snakes.

Central Maine Power Electrical Substation and Transmission Line Upgrades | Jay and Rumford, Maine | Project Manager

Managed field survey of wetland boundaries, potential streams, Significant Vernal Pools, and Wetlands of Special Significance under the jurisdiction of the Maine Department of Environmental Protection Natural Resource Protection Act; and preparation of local, state, and federal permit applications for 115 kV transmission line and substation upgrade.

TRANSPORTATION

MBTA Greenbush Commuter Rail Rehabilitation | Jacobs Civil, Inc. | Weymouth, Braintree, Hingham, Cohasset, and Scituate, MA, US | Project Manager

Conducted assessment and characterization of wetland resources, vernal pools, and state-listed rare wildlife and plant species and their habitat along an 18-mile former railroad right-of-way. Assisted with agency consultation and development of an application for a Conservation Management Permit in compliance with the MESA for a "take" of the spotted turtle, elderberry long-horned beetle, and swamp dock. Conducted assessment of an under rail prototype wildlife crossing structure designed for use by spotted turtles and other wildlife. Conducted and managed construction observation of natural resources before, during, and after construction, including water quality monitoring, amphibian egg mass, aquatic invertebrate and vegetative community surveys of over 40 vernal pools. Conducted spotted turtle radio telemetry study, including aquatic trapping, upland nesting surveys, and hatchling radio telemetry.

Replacement of Route 44 Bridge, Wood Turtle, Purple Martin, American Kestrel, and a Noctuid Moth Habitat Assessment | Pomfret, Connecticut | Project Manager and Technical Lead

Conducted a habitat assessment characterizing habitat conditions, including a survey to assess presence of wood turtles, for the proposed bridge replacement spanning Wappoquia Brook. Provided summary results and mitigation recommendations on behalf of the Connecticut Department of Transportation to CTDEEP.

Norwottuck Rail Trail Rehabilitation Project | Hadley, Northampton, and Amherst, Massachusetts | Technical Co-Lead

Conducted natural community, general wildlife, and rare species habitat assessments within the 11-mile rail trail corridor proposed by Massachusetts Department of Conservation and Recreation (DCR). Evaluated habitat conditions for 19 state-listed rare wildlife and plant species documented by the NHESP and provided impact minimization and design recommendations to assist DCR with MESA compliance.

Groveland Community Trail | Groveland, Massachusetts | Technical Lead

Assisted MassDOT with NHESP pre-filing consultations to design project to avoid, minimize, and mitigate impacts to wood turtle and Blanding's turtle. Submitted a MESA Conservation and Management Permit application for a "take" of wood turtle and Turtle Protection Plan for both species.

Bruce Freeman Rail Trail | Sudbury, Massachusetts | Technical Lead

Conducted wildlife habitat assessment per MassDEP Wildlife Habitat Protection Guidance and survey of approximately 20 vernal pools along former 4-mile railroad ROW. Vernal pool survey included NHESP confirmed observation of blue-spotted salamander egg masses and fairy shrimp.

REMEDIATION

Housatonic River Restoration Project, Restored Vernal Pool Biological Monitoring | Pittsfield, Massachusetts | Project Manager

Conducted multi-year vernal pool survey of a restored vernal pool to evaluate biological productivity, vernal pool restoration design, and eligibility for NHESP Vernal Pool Certification. Surveys assessed the presence of obligate vernal pool species, including fairy shrimp.

Eversource Coal Tar Remediation | Holyoke, Massachusetts | Technical Support

Assisted with NHESP consultations and development of a MESA Conservation and Management Permit Application for a "take" of yellow lampmussel, tidewater mucket; and shortnose and Atlantic sturgeon for the proposed removal of residual tar patches in the Connecticut River.

Housatonic River Restoration Project, Qualitative Analysis of Restoration Monitoring | Pittsfield, Massachusetts | Project Manager

Managed team of ecologists that performed a field-based qualitative analysis at multiple sites to evaluate relative success of restoration monitoring results following site remediation relative to mandated performance standards.

Holden Mine Remediation, Aquatic Surveys | Holden Village, Washington | Field Lead

On behalf of Rio Tinto, led a team of aquatic ecologists performing macro-invertebrate surveys in Railroad Creek as part of a long-term bio-monitoring program for the remediation of a former copper mine abandoned in the 1950s and located on Okanogan-Wenatchee National Forest and other private lands.

COMMUNITY DEVELOPMENT

University of Connecticut Composting Facility - Eastern Hognose Snake, Wood Turtle, American Kestrel, and Southern Bog Lemming Habitat Assessment | Mansfield, Connecticut | Project Manager and Technical Lead

Conducted a habitat assessment characterizing conditions at the project site for the state-listed species of concern documented nearby. Provided results and recommendations to the CTDEEP on behalf of the University of Connecticut, which led to selection of an alternate location.

U.S. Customs and Border Protection Rare, Threatened, and Endangered Species Survey | Maine | Project Scientist

Conducted surveys for subset of over 60 sites throughout the state of Maine to assess the presence of state and federal rare, threatened, or endangered wildlife species and their habitats. The work included species habitat assessments and evaluation of potential project impacts to listed species.

Ward Street Athletic Fields, Wildlife Habitat Evaluation | Hingham, Massachusetts | Project Manager

Conducted a wildlife habitat evaluation, per MassDEP Wildlife Habitat Protection Guidance, and vernal pool surveys for approximately 24 acres. Evaluated potential project impact to identified on-site wildlife habitat interests protected under the MWPA and town wetlands bylaw. Performed amphibian egg mass and aquatic invertebrate surveys and completed associated NHESP Vernal Pool Certification field form. Provided project design and mitigation recommendations during project planning. Attended Hingham Conservation Commission hearings, on behalf of the project, to present results.

Residential Subdivision, Rare Turtle Surveys | Wells, Maine | Project Scientist

Conducted visual and meander field surveys for spotted and Blanding's turtles at a proposed development site.

Timber Rattlesnake and Eastern Copperhead Protection Plan and Surveys | Confidential Sites, Massachusetts | Technical Lead

Developed rare snake protection and relocation plans in coordination with the NHESP to assist clients with MESA compliance Conducted pre-construction surveys of the project site with the goal of capturing and relocating state-listed rare snakes discovered inside construction zone.

Commercial Development, Ringed Boghaunter Habitat Assessment | North Smithfield, Rhode Island | Project Manager and Technical Lead

Conducted a third-party peer review and field assessment of habitat conditions at the site of a large proposed commercial project. As part of the analysis, supplemental impact analysis; and avoidance, minimization, and mitigation recommendations were provided to the client.

Residential Subdivision, Blanding's Turtle Survey | Lyman, Maine | Project Scientist

Conducted visual and meander surveys targeting the Blanding's turtle at a site in southwestern Maine. Supported report describing survey results, potential impacts, and mitigation recommendations for MDIFW review.

Town of Brunswick Wildlife Corridor Assessment and Winter Tracking Surveys | Brunswick, Maine | Project Scientist

Conducted winter tracking surveys and assisted in a study to identify potential local wildlife corridors and management recommendations to assist the town's land use planning.

Mixed Use Development, Spotted Turtle Habitat Assessment and Surveys | Marshfield, Massachusetts | Project Scientist

Conducted a habitat assessment for spotted turtles to support MESA permitting for a proposed large phased commercial and residential development to support MESA permitting. Assisted with the siting and design of wildlife crossing structure and exclusion barriers; and developed design recommendations to avoid, minimize, and mitigate impacts to state-listed rare species.

Fenn School, Umber Shadowdragon, Arrow Clubtail, and Blanding's Turtle Habitat Assessment, and Blanding's Turtle Nesting Surveys | Concord, Massachusetts | Project Manager and Technical Lead

Conducted habitat assessment for the Blanding's turtle and state-listed rare dragonflies per NHESP habitat guidance for proposed Fenn School campus renovations. Conducted nocturnal terrestrial turtle nesting surveys to evaluate nesting on-site. Prepared and submitted a MESA Project Review Checklist, including results of the surveys and mitigation recommendations.

The Lantana, Marbled Salamander Habitat Assessment and Surveys | Randolph, Massachusetts | Project Manager and Technical Lead

Conducted habitat assessment, aquatic larval/amphibian egg mass surveys, and drift fence/pit-fall trap surveys for marbled salamanders at the site of a proposed commercial project. Prepared NHESP Vernal Pool Certification form. Presented results and design recommendations during NHESP consultation.

Lowe's Retail Expansion Program, Listed Species Assessments | Northeast, United States | Technical Support

Conducted rare, threatened and endangered species habitat assessments at multiple locations in the northeast in support of Lowe's permit applications for proposed site build outs and pad ready developments.

Mixed Use Development, Diamondback Terrapin Habitat Assessment and Nesting Surveys | Southeastern Massachusetts | Project Manager and Technical Lead

Conducted a habitat assessment of the project site per NHESP guidance and designed and implemented field surveys at a former landfill proposed for mixed use development to evaluate mating and nesting of a newly discovered diamondback terrapin population. Supported MESA permitting compliance and developed responses to reviewer comments during MEPA review.

Gogebic Taconite Potential Mine Site, Aquatic Surveys | Hurley, Wisconsin | Project Scientist

Conducted aquatic resource surveys at over 50 streams on the approximately 22 square mile potential iron ore mine site near Hurley, Wisconsin. Conducted stream habitat assessments and; macroinvertebrate kicknet and trapping surveys per the study plan approved by the Wisconsin Department of Natural Resources.

Maine Army National Guard, Spotted and Wood Turtle Surveys, Various Sites | Maine | Project Manager

Developed and obtained MDIFW approval of spotted turtle and wood turtle work plans using guidance from respective species northeast working groups and managed the field team. Results of visual and trapping surveys were included in summary reports to support Maine Army National Guard's Integrated Natural Resource Plans at four training sites in southern and western Maine.

Confidential Land Management Project | New England | Project Manager

Served as project manager leading a team of resource and regulatory specialists that performed a desktop and field-based critical issues analysis for an approximately 600-acre parcel to inform project planning, design, and anticipated regulatory requirements.

New Hampshire Fish and Game, Blanding's Turtle Regional Rapid Habitat Assessment | New Hampshire | Project Manager and Technical Lead

Performed desktop landscape analysis; and ground-based habitat assessments and presence/absence surveys of Blanding's turtle in southern and central New Hampshire. Developed regional habitat conservation study plan in coordination with the New Hampshire Fish and Game Department to evaluate and characterize 15 regional sites each >1500 acres. Results provided a description and revised habitat mapping, new observations of Blanding's turtle populations, and conservation management recommendations.

EMERGENCY RESPONSE

Enbridge Emergency Spill Response | Fort McMurray area, Alberta | Co-Technical Lead

Served as Ecological/Aquatic Resources co-team lead during emergency spill response for a hydrocarbon spill at a pipeline. Assisted with development of plans and managed teams conducting wetland delineation, erosion and sediment control, aquatic species surveys, sediment sampling, and initial resource damage assessment. Coordinated with multi-discipline project team and client to move response to planned project phase.

Bakken Emergency Spill Response | McKenzie County, North Dakota | Technical Lead

Assisted with development of Sampling and Analysis Plan (SAP) to identify and characterize the area of the release. Managed ecological field staff and conducted initial site assessment to evaluate natural resources within the area of release.

Bakken Emergency Spill Response | Williams County, North Dakota | Co-Technical Lead

Served as the wildlife and Shoreline Cleanup Assessment Technology (SCAT) lead managing the Stantec team performing ecological surveys and characterizing the release to inform cleanup operations. Assisted with environmental observation of cleanup operations, development and implementation of wildlife deterrents, rare species assessments, and the development of associated response documents through the emergency phase.

Emergency Spill Response | Rio Blanco County, Colorado | Co-Technical Lead

Served as the wildlife and Shoreline Cleanup Assessment Technology (SCAT) lead managing the Stantec team performing ecological surveys and characterizing the release to inform cleanup operations. Assisted with environmental observation of cleanup operations, development and implementation of wildlife deterrents, rare species assessments, and the development of associated response documents through the emergency phase.

Enbridge Natural Resource Damage Assessment and Line 6B Spill Response | Michigan | Project Scientist

Conducted natural resource compliance observation during cleanup operations, including wildlife capture, cleaning, and relocation as part of the Natural Resource Damage Assessment (NRDA). Wildlife capture included riverine hand-netting and trapping surveys targeting Blanding's, common map, snapping, painted, musk, and spiny soft-shell turtles.

Enbridge Line 6B Dredge Permit Environmental Assessment (EA) | Michigan | Technical Lead

Assisted with the development an Environmental Assessment (EA) for dredge permit as part of ongoing 6B spill response. Evaluated the proposed action with regard to potential impacts to reptiles and amphibians and their habitat within the project area.

Natural Resource Advisory Role in Oil Spill Response | Large Interstate Oil Spill in Gulf of Mexico | Natural Resource Advisor Team Lead and Resource Advisor

Natural Resource Advisor (NRA) Team Lead for NRAs and Resource Advisor (READ) for National Park Service on Federal lands conducting environmental oversight of the oil spill cleanup activities in compliance with an emergency consultation under Section 7 of the Endangered Species Act. NRA Team lead assisted client, USCG, USFWS, NOAA, and state natural resource agencies with the development and implementation of Best Management Practices (BMPs). The objective of this work was to minimize secondary impacts of the cleanup activities on protected resources, including sea turtles, migratory and nesting shorebirds, beach mice, mangrove wetlands, estuaries, coastal wetlands, and dune systems. Responsible for conducting regular consultations with USFWS Section 7 liaisons and state environmental coordinators, and daily submittal of team reports documenting NRA activities for use in USFWS consultation process as part of the Natural Resources Damage Assessment (NRDA).

PUBLICATIONS

Pelletier S. K., L. Carlson, D. G. Nein, R. D. Roy. Railroad Crossing Structures for Spotted Turtles: Massachusetts Bay Transportation Authority–Greenbush Rail Line Wildlife Crossing Demonstration Project. *Poster presentation at the International Conference on Ecology and Transportation (ICOET), San Diego, California*, 2005.

Nein, D.G. Protecting State-listed Species in Massachusetts. *Co-presenter at the Massachusetts Association of Conservation Commissions (MACC) Annual Environmental Conference, Worcester, Massachusetts*, 2005.

L. Carlson, S.K. Pelletier, and D.G. Nein. How Does the Turtle Cross the Railroad? Monitoring Results for Railroad Crossing Structures for Spotted Turtles. *Poster presentation at the International Conference on Ecology & Transportation (ICOET), Seattle, Washington*, 2011.

Nein, D.G. Presentation: Exploring Vernal Pools. *Maine Audubon Family Nature Walk Series*, 2004.

DeGraaf, J.D. and D.G. Nein. Predation of Spotted Turtle (Clemmys guttata) by Green Frog (Rana clamitans). *Northeastern Naturalist, Issue 17/4*, 2010.

Pelletier, S.K., D.G. Nein, and R.D. Roy. Railroad Crossing Structures for Spotted Turtles. *International Society of Wetland Scientists 25th Anniversary Conference, Charting the Future: A Quarter Century of Lessons Learned; Seattle, Washington*, 2004.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Gordon Perkins

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
GORDON PERKINS
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Gordon W. Perkins.

Q. Please state the name of your employer and its business address.

A. I am employed by Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., which has a business address of 217 Montgomery Street, Suite 1100, Syracuse, New York 13202.

Q. In what capacity are you employed?

A. I am a Senior Project Manager and Director of Visualization Services.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I hold a Bachelor of Landscape Architecture, from the State University of New York College of Environmental Science and Forestry, 2001 and an Associate of Arts from Keystone College, La Plume, PA, 1998.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I serve as Project Manager for the visual resources portions of the Sunrise Wind Project and was directly involved in the preparation and oversight of the preparation of the Visual Resources Assessment for the above ground portions of

the Onshore Converter Station proposed to be located in the Town of Brookhaven.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-B (Onshore Visual Resources Assessment Report)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Gordon Perkins, GISP
Division Manager

Gordon Perkins is EDR's Visualization Division Manager with more than 20 years of professional experience. Gordon is one of the leading expert consultants in Visualization and Visual Impact Assessment (VIA) in the Northeast and is well known in the energy generation and transmission industry. Gordon has extensive expertise in digital graphics and uses 2-D and 3-D software applications to create visual simulations and effectively illustrate design concepts and project appearance.

As a Division Manager with EDR, Gordon's responsibilities include the ongoing evaluation and advancement of the technical methodologies used in EDR's visual impact assessments, including new techniques in data collection, processing and analysis, and 3-D modeling. Gordon is also responsible for assigning, scheduling, and coordinating assistance from an in-house multi-disciplined team of professionals. He remains hands-on throughout the project, overseeing and advising the EDR Team as needed, as well as providing oversight, guidance, and quality assurance.

education

Bachelor of Landscape Architecture, Ecology Emphasis, State University of New York College of Environmental Science and Forestry, 2001.

Associate of Arts, Keystone College, La Plume, PA, 1998.

registration / certifications

Certified Geographic Information Systems Professional (GISP)

Federal Aviation Association, Unmanned Aerial Vehicle (UAV) Pilot Certification for Commercial Flights

professional affiliations

Member, Alliance for Clean Energy New York

Member, American Wind Energy Association

employment history

Division Manager, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., Syracuse, NY, 2019-present.

Senior Project Manager, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., Syracuse, NY, 2016-2019.

Project Scientist- Visualization and GIS Specialist, ESS Group, Inc., East Providence, RI, 2011-2016.

Senior Visual Analyst- Project Manager, Saratoga Associates Landscape Architects, Architects, Engineers, and Planners, P.C., Syracuse, NY, 2008-2011.

Project Manager and Visualization Specialist, Environmental Design & Research, Syracuse, NY, 2001-2008.

project experience

Moses-Adirondack Smart Path Reliability Project, New York State – Lead technical visual specialist supervising the creation of 26 visual simulations for this 765 kilovolt (kV), 86-mile long transmission line in support of a VIA and NYS Article VII application prepared by WSP.

Clear River Energy Center & Burrillville Interconnection Project, Burrillville, RI - Prepared a VIA for a proposed 900-MW natural gas generating plant and interconnection transmission line. Visual impacts of the project were assessed by creating computer models of the proposed facilities and computer-assisted visual simulations of potential impacts as viewed from representative viewpoints. Provided expert witness testimony before the Rhode Island Energy Facilities Siting Board.

Southern Rhode Island Transmission Project, East Greenwich, RI - Completed photography and field verification for a 7.3-mile 115kV transmission line and associated substation. Created visual simulations representing realistic and accurate right-of-way clearing and transmission line upgrades. Provided expert witness testimony before the Rhode Island Energy Facilities Siting Board.

Flat Rock Transmission Line, Lewis County, NY - Preformed viewshed mapping, line of sight cross sections, and field verification of potential visibility for a 10-mile, 230 kV transmission line being reviewed under Article VII of the NYS Public Service Law. Also prepared eight photo simulations of the proposed project.

New York Regional Interconnect, New York State - Coordinated field operations to document potential visibility of a proposed high-voltage DC transmission line from over 1,000 visually sensitive resources located within a 190-mile long (570 square mile) study area. Team leader in the selection and production of visual simulation from over 75 viewpoints. Provided expert witness testimony before the NYS Public Service Commission.

Revolution Wind Farm, Visual Impact Assessment, Offshore MA/RI - Responsible for technical oversight of all visual impact studies including field photography and survey, visual simulations, and preparation of the Visual Impact Assessment (VIA) report for this 704 megawatt (MW) offshore wind farm located off the coasts of Massachusetts and Rhode Island.

South Fork Wind Farm, Visual Impact Assessment, Offshore MA/RI - Provided technical oversight for field photography and survey, curvature of the earth calculations, viewshed methodology, simulations, impact assessment, and report production for this 130MW offshore wind farm located approximately 19 miles off the coast of Block Island Rhode Island.. Also provided graphic support for public outreach and education efforts.

Skipjack Wind Farm, Visual Impact Assessment, Offshore DE - Providing technical oversight for field photography and survey, curvature of the earth calculations, viewshed methodology, simulations, impact assessment, and report production for this 120 MW offshore wind farm located off the coast of Delaware and Maryland . Also provided expert witness testimony before the Maryland Public Service Commission (PSC) and graphic support for public outreach and education efforts.

Icebreaker Wind Project, Erie County, Cleveland, OH - Obtained photographs, assisted with preparation of visual simulations, and oversaw production of VIA Report for a proposed 20MW offshore wind project in Lake Erie. This six-turbine demonstration project, located 10 miles offshore of Cleveland Ohio, is the first wind project approved for development in the Great Lakes.

NYSERDA Offshore Wind Master Plan – Completed a Visibility Threshold Study for the New York State Offshore Wind Masterplan to determine the potential visual impact threshold for the placement of offshore wind energy area nominations. The study included an analysis of past weather data to predict prevailing conditions and limits of visibility, preparation of representative visual simulations, and a compendium report.

Galloo Island Wind Project, Jefferson County, NY - Prepared VIA and provided technical support for a proposed 30-turbine wind energy facility located on an island in Lake Ontario.

Long Island Offshore Wind Park (LIOWP), Long Island, NY - Prepared visual simulations of the Long Island Offshore Wind Park (LIOWP) Project, a proposed 140-megawatt offshore wind power project. Provided daytime simulations of the project from multiple locations on the southern Long Island shoreline. Performed photographic and survey fieldwork and detailed computer modeling to develop realistic simulations of the proposed wind farm. Also participated in public outreach meetings and workshops concerning the project.

Cape Wind Offshore Wind Farm, Nantucket Sound, MA - Created survey-accurate visual simulations for America's first offshore wind proposal. Completed daytime and, first in the industry nighttime visual simulations, depicting a 420-MW wind farm located in Nantucket Sound. Provided fieldwork oversight and photography from critical points throughout Cape Cod and the Islands.

BOEM Offshore Visualizations for the MA/RI WEA - *Prior to EDR*, Created over 400 survey-accurate visual simulations depicting build-out of the BOEM wind energy areas in Massachusetts and Rhode Island. Used digital imaging techniques to illustrate potential views during four seasons and four times of day from each viewpoint. Contracted survey and meteorological experts to produce accurate visibility models.

Tobacco Valley Solar Farm , Simsbury, CT - Completed an abbreviated visual assessment for a 26-MW solar facility and created a mitigation plan which included vegetative screening, project setbacks from residential properties, and alternative fencing materials. Also testified before the Connecticut Siting Council and participated in settlement negotiations with the Town of Simsbury.

Canisteo Wind Farm, Steuben County, NY - Developed a VIA for a 122-turbine, 290-MW wind power project being reviewed under Article 10 of the NY Public Service Law. The VIA Report evaluated potential project visibility within the study area, identified key views, and assessed visual impacts associated with the proposed project. Also completed a Visual Impact Assessment for the associated transmission line in compliance with NY Article VII regulations.

Alle-Catt Wind Farm, Allegany, Cattaraugus, and Wyoming Counties, NY - Developed a VIA for a 117-turbine, 340-MW project being reviewed under Article 10 of the NY Public Service Law. The VIA Report evaluated potential project visibility within the study area, identified key views, and assessed visual impacts associated with the proposed project.

Hardscrabble Wind Power Project, Towns of Fairfield, Norway, & Little Falls in Herkimer County, NY - Developed viewshed maps and created visual simulations for the VIA for a 61-turbine, 74-MW wind power project. Assisted with preparation of the VIA Report, which evaluated potential project visibility within the study area, identified key views, and assessed visual impacts associated with the proposed project. Gordon also contributed to the Landscape Architecture Foundation, Landscape Performance Series study grant which reviewed the accuracy of the VIA process as compared to the operational facility.

Maple Ridge Wind Farm, Lewis County, NY - Assisted in the completion of a visual analysis for a 320-MW wind farm in upstate New York. Completed field verification (balloon study), visual simulations, viewshed analysis, and nighttime impact assessment.

Cohocton Wind Power Project, Town of Cohocton in Steuben County, NY - Prepared visual simulations for an 82-MW, 41-turbine wind power project. Assisted with preparation of the VIA Report, which evaluated potential project visibility within the study area, identified key views, and assessed visual impacts associated with the proposed project.

Marble River Wind Farm, Towns of Clinton & Ellenburg in Clinton County, NY - Created visual simulations for a 200-MW, 109-turbine wind power project. Assisted with preparation of the VIA Report which evaluated potential project visibility within the study area, identified key views, and assessed visual impacts associated with the proposed project.

Jamestown Board of Public Utilities Power Plant & Operations Center, Jamestown, NY - Prepared visual simulations for a 40-MW clean-coal power-generating plant and operations center. Visual impacts of the project were assessed by creating computer models and visual simulations of the proposed facilities as viewed from representative viewpoints. Assisted with preparation of the VIA Report, which evaluated project visibility and visual impact on sensitive receptors and identified mitigation options, which included recommendations regarding design and siting, the color and texture of built materials, and lighting.

Empire Newsprint Recycling & Power Plant, Rensselaer County, NY - Created an architecturally detailed 3-D model and photo simulations of a proposed power plant (including cooling tower and stack plumes) and an associated 345 kV transmission line. Also assisted with fieldwork involving photo documentation of existing views. Simulations were part of a VIA for the proposed project, prepared in support of the project's Article VII application.

New York State Statewide Wireless Network - Developed visual simulations for a Generic Visual Impact Assessment (GVIA) for the siting of wireless communications towers throughout New York State. Responsible fort defining landscape similarity zones and viewer groups, identifying sensitive resources/receptors, supervising the development of visual simulations, and preparation of the GVIA report.

Tompkins County Public Safety Communications System, Tompkins County, NY - Developed viewshed maps and visual simulations for a VIA addressing the siting of nine new towers proposed throughout the county for wireless public safety communications.

Kaal Rock Connector, City of Poughkeepsie, NY - Prepared a Visual Assessment for three design alternatives associated with a multiuse trail connection along the shoreline of the Hudson River. Completed simulations of three concept designs and developed a rating system to determine the design with the greatest visual appeal. Completed an abbreviated visual assessment report to assist regulators in decision-making.

Hudson River Proposed Anchorage Areas, NY - Prepared animated fly-through videos using drone footage and 3D overlays along the Hudson River from Yonkers to Poughkeepsie, New York to demonstrate the visual effects of a proposal by the United States Coast Guard to create several new anchorage areas for oil barges. This fly-through animation was used in a media campaign in opposition to the proposed anchorage areas.

Interstate 81 (I-81) Viaduct Project, Visual Impact Assessment, City of Syracuse, Onondaga County, NY - Prepared a VIA in accordance with the Federal Highway Administration (FHWA) Visual Impact Assessment protocol as part of the NEPA review of the proposed replacement of approximately 5 miles of elevated Interstate highways in the City of Syracuse, New York. Project involved the development of 52 simulations of proposed design alternatives from various locations throughout the city.

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Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Douglas Pippin

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
DOUGLAS PIPPIN
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Douglas James Pippin.

Q. Please state the name of your employer and its business address.

A. I am employed by Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., which has a business address of 274 North Goodman Street, Rochester, New York 14607.

Q. In what capacity are you employed?

A. I am an archaeology project manager in the Cultural Resources Division.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have a doctorate in anthropology from Syracuse University. I am also a Registered Professional Archaeologist (RPA) and meet the Secretary of the Interior's Guidelines for Professional Qualifications in Archaeology (per 36 CFR, Part 61). I was a professor of anthropology for the State University of New York (SUNY) for over 20 years. My specialty is the archaeology of eighteenth and nineteenth century historic sites in the northeast United States and Canada. For more than ten years, I also served as the director for a substantial Native American Graves Protection and Repatriation Act (NAGPRA) compliance effort

for SUNY. I have been with EDR as a project manager for nearly two years, working primarily on renewable energy projects.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I am the project manager overseeing the Phase I archaeological investigation of the onshore facilities for the Sunrise Wind project.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-D (Phase 1A Archaeological Resources Report)

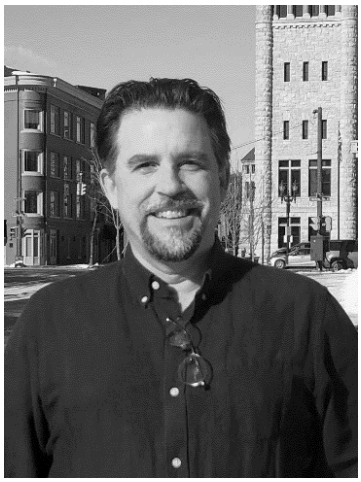
Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Douglas J. Pippin, PhD, RPA
Archaeology Project Manager



Douglas J. Pippin, PhD, RPA is an Archaeology Project Manager at EDR. Dr. Pippin has over 20 years of professional experience as an archaeologist and was previously an Assistant Professor in the Department of Anthropology at SUNY Oswego. On behalf of the college, he directed compliance efforts for the Native American Graves Protection and Repatriation Act (NAGPRA). In addition, he has published numerous peer-reviewed articles and makes regular presentations at academic and professional conferences. He has a bachelor's degree in photojournalism from the University of Maryland, and a master's and doctorate in anthropology from the Maxwell School at Syracuse University. He is a Registered Professional Archaeologist and meets the Qualifications for the Secretary of the Interior's Standards for Archaeology and Historic Preservation (per 36 CFR 61). In addition, he is President of the Lewis Henry Morgan Chapter of the New York State Archaeology Association, in Rochester. Doug's areas of expertise include historic-period archaeology, NAGPRA, State Historic Preservation Office and Tribal consultation, archaeological collections management, and Colonial-period military history in the northeastern United States and Canada.

As an Archaeology Project Manager, Doug directs cultural resources surveys and develops strategies for the identification, protection, and/or mitigation of archaeological and historic resources.

education

Doctorate, Anthropology, Maxwell School of Citizenship & Public Affairs, Syracuse University

Master of Arts, Anthropology, Maxwell School of Citizenship & Public Affairs Syracuse University

Bachelor of Science, Photojournalism, University of Maryland

registrations & professional affiliations

Registered Professional Archaeologist #17571

President, Lewis Henry Morgan Chapter (Rochester), New York State Archaeological Association

New York Archaeology Council

Society for Historical Archaeology

employment history

Archaeology Project Manager, Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., Syracuse, NY, 2018-present.

Assistant Professor of Anthropology and NAGPRA Coordinator, Department of Anthropology, SUNY Oswego, 2012-2018.

Visiting Assistant Professor of Anthropology and NAGPRA Coordinator, Department of Anthropology, SUNY Oswego, 2005-2012.

Anthropology Instructor, Department of Anthropology, SUNY Brockport, 2002-2008.

Assistant Editor, The Encyclopedia of New York State, New York State Museum & Syracuse University Press, 2002-2004.

project experience

Sunrise Wind, Onshore Transmission Line, Suffolk County, NY – Project Manager for a Phase I archaeological survey of the onshore interconnection cable route and substation for a proposed 880-MW offshore wind farm located off the coast of Southern New England. EDR's services were in support of a New York State Public Service Commission Article VII Application.

Morris Ridge Solar Energy Center, Livingston County, NY – Project Manager for a Phase I archaeological survey at a proposed 177-MW solar facility. Services provided in support of the New York State Department of Public Service Article 10 Application review.

South Fork Wind, Onshore Transmission Line, Suffolk County, NY – Project Manager for a Phase I archaeological survey of the onshore interconnection cable route for a proposed 132-MW offshore wind farm located off the coast of Southern New England. EDR's services were in support of a New York State Public Service Commission Article VII Application.

Flint Mine Solar, Greene County, NY – Project Manager for a Phase I archaeological survey at a proposed 100-MW solar facility. Services provided in support of the New York State Department of Public Service Article 10 Application review.

Heritage Wind Project, Orleans County, NY – Project Manager for a Phase I archaeological survey at a proposed 200-MW solar facility. Services provided in support of the New York State Department of Public Service Article 10 Application review.

Riverhead Solar 2, Suffolk County, NY – Project Manager for a Phase I archaeological survey at a proposed 36-MW solar facility. Co-author of final report, submitted to New York State Historic Preservation Office (SHPO). Services provided in support of the New York State Department of Public Service Article 10 Application review.

Alamo Solar, Preble County, OH – Project Manager for the Phase I archaeological survey and co-author of the archaeological research design, in consultation with the Ohio Historic Preservation Office (OHPO). Services provided in support of an Application to the Ohio Power Siting Board (OPSB) for the proposed 70-MW solar energy project sited on approximately 1,002-acres.

Angelina Solar, Preble County, OH – Project Manager for the Phase I archaeological survey and co-author of the archaeological research design, in consultation with OHPO. Services provided in support of an Application to the OPSB for the proposed 80-MW solar energy project sited on approximately 934-acres.

Willowbrook Solar Project, Brown and Highland Counties, OH – Conducted an onsite archaeological assessment and co-author of the archaeological research design, in consultation with OHPO. Services provided in support of an Application to the OPSB for the proposed 150-MW solar energy project.

Coxsackie Correctional Facility, Greene County, NY – Co-authored the Phase III archaeological survey report for a Pre-Contact Native American archaeological site identified and excavated pursuant to Section 14.09 of the New York State Historic Preservation Act and Section 106 of the National Historic Preservation Act. Directed laboratory analysis of approximately 7,000 artifacts.

Hillcrest Solar Project, Brown County, OH – Project Manager for the Phase I archaeological survey at a proposed 125-MW solar energy project sited on approximately 1,400-acres. Cultural resources survey conducted in consultation with the OHPO pursuant to conditions of Certificate approved by the OPSB.

Cassadaga Wind Project, Chautauqua County, NY – Co-authored a Phase II documentary research report for three historic-period sites identified during the previous Phase IB archaeological survey, related to layout changes to a proposed 126-MW wind farm. Services provided in support of the New York State Department of Public Service Article 10 Application review.

Johnson Hall State Historic Site, Fulton County, NY – Project Manager for Phase I archaeological survey at the eighteenth century colonial mansion of Sir William Johnson. Services were in support of building improvements for drainage around the foundation walls. Co-author of the final report submitted to SHPO.

Lake Road Improvement Project, Monroe County, NY – Project Manager for Phase II archaeological survey in support of a roadway improvement project. Responsible for overseeing the survey in a DOT right-of-way, developing a Phase II investigation strategy, and contributing to the final report for a pre-contact Native American site.

Timber Road IV, Paulding County, OH – Assisted in the revision of the Phase I archaeological survey report for the 100-MW wind farm in the Great black Swamp region.

Village of Mohawk Water Wells, Herkimer County, NY – Assisted in the report for the archaeological monitoring of excavation/construction of water wells within a 1.2-acre parcel being redeveloped with storm-resilient municipal and utility infrastructure. Monitoring was conducted as part of Section 106 of the National Historic Preservation Act consultation for the New York Governor's Office of Storm Recovery (GOSR) and Federal Emergency Management Agency (FEMA).

project experience prior to joining EDR

Native American Graves Protection and Repatriation Act Compliance Director, State University of New York (SUNY) at Oswego- Coordinated tribal and agency consultation along with federal regulatory compliance for the inventory of SUNY Oswego's archaeological collections. Managed a collection of over 150,000 artifacts from more than 125 archaeological sites. Prepared grant applications, managed grant funding, directed student laboratory assistants, and prepared comprehensive inventory of archaeological collections. Consulted with law enforcement agencies, the Oneida Indian Nation of New York, the Onondaga Nation, the Mohawk Nation at Akwesasne, the U.S. Department of the Army, the National Park Service, the New York State Museum and the New York State Historic Preservation Office to coordinate the reparation of sacred/ceremonial objects and human remains to Nations. 2005-2018.

Carleton Island, Cape Vincent, NY- Ph.D. Dissertation Research Project. Archaeological survey and excavation at the site of Fort Haldimand, a late-eighteenth century British military fortification located in the Thousand Islands. Excavations at both soldiers' and officers' barracks to better understand living conditions in the eighteenth century upper St. Lawrence Valley. 1998-2002, 2011–Present.

Tram Site, Livonia, NY- Supervised the public excavation conducted through the Lewis Henry Morgan Chapter, New York State Archaeological Association. Goals include mapping the extent of the Tram Site settlement area, outside of that protected by the Archaeological Conservancy. Survey and testing of approximately 5 acres. 2016-Present

Burning Springs Site, Bristol, NY- Supervised the public excavation conducted through the Lewis Henry Morgan Chapter, New York State Archaeological Association. A multi-component seventeenth century site visited by the explorer LaSalle while he was in the Seneca territory before moving westward. As a result, the site appears on some of the earliest maps of North America. Archaeological testing of approximately 6 acres to investigate any long-term use of the springs area by the Haudenosaunee, and early historic-period residents of the Bristol Valley. 2010-2013.

Warderwick Wells, Exuma Cay Land & Sea Park, Bahamas- Worked within the Exuma Cays Land and Sea Park to map and survey archaeological sites believed to be associated American Loyalist refugee settlements. Six activity areas mapped and recorded, including potential burial ground. Archival investigations completed at the Bahamas National Archives, Nassau and the National Archives, UK. 2010-2012.

John Brown Hall at the Harriet Tubman Home, Auburn, NY- Field Supervisor for the Syracuse University archaeological field school at the site of the home that Harriet Tubman built for elderly, former slaves. 1998.

Chittenango Landing Canal Boat Museum, Chittenango, NY- Field Supervisor for the Syracuse University archaeological field school at a nineteenth century worker's house at an Erie Canal dry dock complex. 1994.

publications and reports

"A very laborious task:" British colonial policy and Fort Haldimand on Carleton Island, New York (1778-1784). In *British Forts and Their Communities: Archaeological and Historical Perspectives,* Christopher R. DeCorse and Zachary James Beier, eds. Gainesville: University Press of Florida, 2018.

NAGPRA Consultation/Documentation Grant Final Project Report, Grant # 36—12—GP—583. Submitted to National NAGPRA, United States Department of the Interior on behalf of the Research Foundation for the State University of New York. 2016

NAGPRA Consultation/Documentation Grant Final Project Report, Grant # 36—11—GP—553. Submitted to National NAGPRA, United States Department of the Interior on behalf of the Research Foundation for the State University of New York. 2016

Summary of archaeological investigations at the Chittenango Landing Canal Boat Museum. In *Chittenango Landing Canal Boat Museum Cultural Landscape Report.* Patrick Heaton, ed. Prepared by EDR, Syracuse, NY, 2014.

NAGPRA Consultation/Documentation Grant Final Project Report, Grant # 36—08—GP—488. Submitted to National NAGPRA, United States Department of the Interior on behalf of the Research Foundation for the State University of New York. 2011

"Distressed for want of provision:" Supplying the British soldier on Carleton Island (1778-1784). In *Soldiers, Cities and Landscapes: Papers in honor of Charles L. Fisher.* Penelope Drooker and John Hart, eds. Albany: New York State Museum Bulletin 513, 2010.

For want of provisions: an archaeological and historical investigation of the British soldier at Fort Haldimand, 1778–84. Dissertation produced for Doctor of Philosophy degree in anthropology. Maxwell School of Citizenship and Public Affairs, Syracuse University. 2010.

The British soldier on Carleton Island: an archaeological perspective. *Historic Kingston 53 (1)*. 2005. century worker's house at an Erie Canal dry dock complex. 1994.

conference presentations

Reforming the Collection: Documentation, Fieldwork and the NAGPRA Process at SUNY Oswego. Poster presentation for the annual meeting of the Society for Historical Archaeology, New Orleans, 2018.

The British on Lake Ontario During the American Revolution: an Archaeological Perspective. Paper presented at the Fort Ontario Conference on Military History and Archaeology, Oswego, NY, 2017.

Archaeological Review of New York's British & American Revolutionary War Fortifications. Presentation at the second annual Conference on the American Revolution in the Mohawk Valley, Fort Plain, NY, 2016.

On the Border, in Between Two Wars: Carleton Island in Canadian and American Identity. Paper presented at the annual meeting of the Council for Northeast Historical Archaeology, Ottawa, Ontario, 2016

(*Aericka Pawlikowski and Kyle Honness, co-authors*) Class and Status in the British Army at Fort Haldimand, Carleton Island, New York. Poster presentation for the annual meeting of the Society for Historical Archaeology, Seattle, 2015.

The Officers' Barracks and Current Archaeological Investigations at Fort Haldimand, Carleton Island, New York. Poster presentation at the annual meeting of the Society for Historical Archaeology, Quebec City, Quebec, 2014

"It is promised to them:" Loyalist refugees' adaptation in the Exuma Cays, Bahamas (1784-1810). Paper presented at the annual meeting of the Society for Historical Archaeology, Leicester, UK, 2013.

"A very laborious task:" British colonial policy and the establishment of Fort Haldimand on Carleton Island (1778–1784). Paper presented at the annual meeting of the Society for American Archaeology, Honolulu, HI, 2013.

The SUNY Oswego NAGPRA Compliance Project. Progress report delivered to the NAGPRA Review Committee, National Museum of the American Indian, Washington, D.C., 2012.

grants and awards

Faculty Scholarly and Creative Activity Grant. Awarded by SUNY Oswego to support archival research in London, 2016-17.

President's Award for Excellence in Academic Advisement. State University of New York, College at Oswego, 2012.

NAGPRA Consultation and Documentation Grant. Project director & co-recipient with Paul Tomascak and Kathleen Blake. Awarded $49,500 from the National Park Service for the acquisition of a portable, x-ray fluorescence analyzer for the NAGPRA archaeology lab, The Research Foundation for the State University of New York, SUNY Oswego, 2012.

NAGPRA Consultation and Documentation Grant. Project director. Awarded $90,000 from the National Park Service to support collections management at SUNY Oswego, The Research Foundation for the State University of New York, 2011.

NAGPRA Consultation and Documentation Grant. Project director. Awarded $75,000 from the National Park Service to support collections management at SUNY Oswego, 2008.

Award for Meritorious Service. Given by the New York State Archaeological Association for service to the Lewis Henry Morgan Chapter, Rochester, 2006.

public archaeology and invited presentations

Panel Discussant, Oswego in the French and Indian War and the War of 1812. Plenary session. The Fort Ontario Conference on Military History and Archaeology, Oswego, NY, 2017.

Plates, Buttons and Bowls: The Domestic Life of the British Soldier on Carleton Island 1778–1784. Invited presentation at the Cape Vincent Historical Weekend Celebration, Cape Vincent, NY, 2016.

TILT Trek. On-site archaeological presentation, activities and tour of Fort Haldimand, Carleton Island, NY. Organized by the Thousand Islands Land Trust, Clayton, NY, 2015.

Archaeological Investigation of the Royal Highland Emigrants on Carleton Island, 1778–1784. Invited presentation at the International Archaeology Day Symposium, Fort Stanwix National Monument, Rome, NY, 2014.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Joy Prescott

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
JOY PRESCOTT
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Joy Y. Prescott

Q. Please state the name of your employer and its business address.

A. I am employed by Stantec Consulting Services Inc., which has a business address of 30 Park Drive, Topsham, Maine 04086.

Q. In what capacity are you employed?

A. I am a Senior Associate and project manager within Stantec's offshore wind program.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have an undergraduate degree in Economics from Smith College and a Master of Arts in Planning and Ecological Design from the Conway School. I have worked at Stantec for 15 years, providing regulatory and permitting services for renewable energy clients.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I provided direction and support for the preparation of multiple exhibits within the Application and coordinated with colleagues at AKRF, Orsted, and Eversource Energy during the preparation of the Application.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 4 (Environmental Impact), Appendix 4-A (NYS Coastal Zone Consistency Review), and Exhibit 8 (Other Pending Filings)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

Joy Prescott

Senior Associate

Joy has over 20 years of experience, including environmental planning and management of state and federal permitting, as well as strategic analysis and support for development of renewable energy project. She has managed all aspects of large-scale projects, with specific expertise in environmental permitting for offshore and onshore wind farms. She understands both the technical challenges and regulatory requirements that shape the landscape of a project and works collaboratively with clients to evaluate and address critical permitting issues. Her practice focuses on the development of programmatic and comprehensive approaches to project documentation, including requirements for BOEM Site Assessment Plans and Construction and Operations Plans, USACE permits, as well as NEPA Environmental Impact Statements.

Joy has considerable permitting experience with preparation of application exhibits, public hearings, and stakeholder engagement. She has managed staffing, implementation, and reporting for more than 60 field studies over the past several years. Her information management and reporting skills include project planning and tracking, budget development and tracking, database system management, data compilation and analysis, technical presentation development, and multimedia document production. As a skilled communicator, she provides direction to her teams about client goals and project scope while also focusing on schedule, budget, and quality for project deliverables. She has engaged the appropriate experts on topics from civil design to recreation to wildlife—and all things in between—and led agency and community negotiations to resolve issues along the way to project approval.

EDUCATION

MA, Planning and Design, Conway School, Conway, Massachusetts, 2003
BA, Economics, Smith College, Northampton, Massachusetts, 1996

PROJECT EXPERIENCE

Project Management, Offshore Wind

Sunrise Wind Farm, New York

Directed field and permitting activities related to onshore and nearshore project development. Provided strategic guidance and quality review for COP and the New York Article VII Application.

South Fork Wind Farm, Rhode Island/New York

Provided program management during the federal and state permitting review process. As part of a multi-disciplinary team, also supported the preparation of technical studies and sections of a COP for submittal to BOEM, as well as supporting federal and state permit application. Joy provided overall quality review of the COP and the New York Article VII Application. Joy also prepared the project's federal permit applications pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the CWA, for submittal to the USACE.

Skipjack Wind Farm, Delaware

Stantec led the environmental analysis and permitting activities for Skipjack, including development of a SAP and COP. Joy provided strategic guidance and quality review.

Block Island Wind Farm, Rhode Island

Project Manager for environmental monitoring during construction and operations, including coordination with agencies and reporting. Ongoing field surveys include bat acoustic surveys, ship-based avian surveys, as well as collision monitoring.

Cape Wind EIS, Massachusetts

Coordinated preparation and review sections of the Draft and Final EIS and BA for the project as well as responding to comments regarding issues raised by public and government entities. Also conducted extensive literature reviews, analysis of applicant field survey data concerning avian and bat species distribution and behavior, and informal and formal consultations with USFWS staff and MMS.

US DOE, Atlantic Coast Regional Acoustic Bat Study

Managed multi-year offshore (2012-2015) bat survey along shores of northern and mid-Atlantic coastal states on behalf of DOE. The project enhanced understanding of temporal and regional activities of bats in coastal and offshore areas and is critical to future siting, permitting, mitigation, and operational efforts.

Joy Y. Prescott

Senior Advisor

US BOEM, Information Synthesis of Bat Interactions with Offshore Wind Facilities

Managed multi-year research study for BOEM. Tasks included 1) a literature review; 2) a compilation of offshore and terrestrial acoustic studies; and 3) a statistical comparison. The published study results support balanced decision processes in the development of renewable energy in the federal waters of the Outer Continental Shelf

Project Management and Permitting

Number Nine Wind Project, Aroostook County, Maine

Project Manager for site investigation and permitting for a 119 turbine, 250 MW project in northern Maine. Project included natural resource surveys on 8,000 acre turbine area and 50-mile generator lead line, as well as state and federal permitting. Permitting efforts included drafting and submitting state, federal, and local permit applications, including 1 round of project revisions, as well as addressing regulatory questions regarding these applications. Joy coordinated weekly status calls during project development, and coordinated with the client, engineer, and other members of the project team.

Bowers Wind Project, Washington County, Maine

Project Manager for all siting and natural resource permitting for wind project, including 2 project redesigns. Permitting efforts included drafting and submitting state, federal, and local permit applications and addressing all regulatory questions regarding these applications. Joy coordinated project involvement in 6 public meetings and 2 public hearings for the project; provided strategic regulatory advice to the client; oversaw the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications; and managed a budget in excess of $1.2 million.

Coye Hill Wind Project, Connecticut

Project Manager responsible natural resource surveys and preliminary permit planning for wind project. Joy coordinated stakeholder outreach and discussions with interested NGO; provided strategic regulatory advice to the client; and oversaw the natural resource surveys necessary.

Rollins Wind Project, Maine

Assistant Project Manager and Regulatory Specialist responsible for drafting and submitting Maine Department of Environmental Protection, Maine Department of Transportation, U.S. Army Corps of Engineers, and local permit applications. Led responses to USFWS questions and concerns, regarding impacts to eagles. The results of these discussions in turn influenced the siting and permitting efforts of future wind projects. Permits for the Rollins Wind Project were obtained in 2009, and the project was operational in 2011.

Bingham Wind Project, Maine

Permitting specialist for local, state and federal permitting of this 62 turbine, 206MW project, Maine's largest wind project at the time (2015). Permitting efforts included drafting and submitting state, federal, and local permit applications and addressing all regulatory questions regarding these applications. The project received all approvals, approvals were sustained on appeal, and it began operation in 2016.

Oakfield Wind Project, Maine

Assistant Project Manager and Regulatory Specialist responsible for drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications. Coordinated 2 public meetings to address comments and questions from local citizens; provided field coordination for the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications. The project became fully operational in 2015.

Confidential Wind Projects, New Hampshire, Vermont, New York, Pennsylvania, Ohio, West Virginia

Managed pre-construction fieldwork surveys and impact assessments at multiple sites in the Mid-Atlantic, New England and the Midwest. The assessments include habitat analyses, fatal flaw analyses, migration surveys using marine radar, acoustic bat surveys, breeding bird surveys and raptor surveys. Ms. Prescott has effectively served as liaison between clients and regulatory agencies to ensure that studies and monitoring plans are in accordance with federal and state guidelines.

Moresville Wind Project, Delaware County, New York

Coordinated and prepared comment responses to Draft Environmental Impact Statement.

** denotes projects completed with other firms*

Joy Y. Prescott

Senior Advisor

Sheffield Wind Project, Vermont

Managed pre-construction fieldwork and reporting for proposed wind energy project. Coordinated documentation and responses for Section 248 Discovery, Testimony and Rebuttal.

Ball Hill Wind Project, New York

Project Manager responsible for bat acoustic and nocturnal radar surveys and associated reporting.

Brandon Wind Project, New York

Project Manager responsible for bat acoustic surveys and associated reporting.

Centerville Wind Project, New York

Project Manager responsible for bat acoustic surveys and associated reporting.

Chateaugay Wind Project, New York

Project Manager responsible for bat acoustic and nocturnal radar surveys and associated reporting.

Steuben Wind Project, New York

Project Manager responsible for bat acoustic surveys and associated reporting.

Portland Montreal Pipeline, Maine, New Hampshire, Vermont, Quebec

Managed environmental review, including permitting evaluation, vernal pool surveys, and wetland delineations at locations along the crude oil pipeline corridor. Coordinated with client and geotechnical engineering teams to identify permitting approach for different locations.

** denotes projects completed with other firms*

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Demetrios Sakellaris

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
DEMETRIOS SAKELLARIS
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Demetrios Sakellaris.

Q. Please state the name of your employer and its business address.

A. I am employed by Eversource Energy, which has a business address of 247 Station Drive, Westwood, Massachusetts 02090.

Q. In what capacity are you employed?

A. I am the manager of the Capital Projects Engineering group.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have completed my undergraduate degree in Electrical Engineering at Northeastern University, a Master's in Power Systems Engineering from Worcester Polytechnic Institute, a Master's in Business Administration from Northeastern University, and my Professional Engineering license in the commonwealth of Massachusetts. I have been working at Eversource since 2010 in various capacities with a primary focus on transmission line design.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I have assisted in compiling technical support focusing on the onshore elements of the Project.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 5 (Design Drawings), Exhibit E-3 (Underground Construction), and Exhibit E-4 (Engineering Justification)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

DEMETRIOS SAKELLARIS (PE)

52 Whittier Rd., Milton, MA 02186 • demetrios.sakellaris@gmail.com • 617.365.1087

Experience

Eversource Energy (formerly Northeast Utilities), Westwood, MA

Transmission Capital Projects, Manager December 2019 – Present

• Manage technical elements of large capital projects, including offshore wind projects in the northeast

• Coordination with multiple entities, including domestic and international teams for progression of detailed design

Transmission Engineering and Project Estimating, Lead Engineer April 2016 – December 2019

• Complete detailed review of all transmission related projects (substation and transmission line)

• Optimize projects by promoting standardized engineering designs across service territory (MA, CT & NH)

• Identify and implement more efficient design and construction methods to reduce cycle time

• Provide leadership and guidance to all project teams for execution of the optimized project

• Represent the Company at Department of Public Utilities (DPU) / Energy Facility Siting Board (EFSB) hearings, open houses and at meetings with local political authorities / officials

Underground Transmission Line Engineering, Supervisor January 2014 – April 2016

• Perform line design work ranging from calculating / sizing underground conductors (USAmp) to compiling ductbank layout and installation specifications (XLPE and HPFF systems)

• Completed preliminary engineering design and supporting cost estimates for all underground projects related to the Greater Boston suite of projects that were successfully chosen by the ISO-NE during the Company's first major competitive bid (total suite exceeds $550M)

• Completed bulk distribution substation assessment and analysis for entire Western MA system (28 substations), assessed load profile for each substation to determine transformer replacement necessity, recommendations made to revise transformer rating philosophy, detailed strategy provided to execute 10 year program for complete upgrade of 15 substations

• Completed storm hardening assessment for Greater Boston substation system (transmission and distribution), assessed flooding risks associated with 100 and 500 year storm levels, provided recommendations for increased short term and long term system resiliency to extreme weather events (ranging from storm surge substation barriers and selective elevation of substation equipment to revised distribution switching protocols to minimize customer outages)

Transmission Line Engineering, Supervisor April 2010 – January 2014

• Performed overhead line design work ranging from modeling structures in PLS-Pole and developing detailed plan and profile designs in PLS-CADD for line replacement / upgrade projects to compiling installation specifications

• Designed standardized 115kV steel structures (deadends and angles from 5° to 30°) for use on entire MA system, decreased design cycle and construction installation time, bulk cost savings realized due to standardized manufacturing

• Created multiyear programs for all transmission line work ranging from new counterpoise installations in areas of poor historical lightning performance, complete line rebuilds bringing

DEMETRIOS SAKELLARIS (PE)

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clearances to ground up to current industry standards, promoting a redundant pump plant at all remote line terminals to select underground HPFF reconductoring efforts (program life-cycles ranged from 5 to 10 years)

• Initiated effort to complete detailed diagnostics on failed equipment (specifically terminations and underground conductor) to identify root cause and determine if other areas of the system were at similar risk; thereby assisting in the justification for proactive replacement

Education

Worcester Polytechnical Institute, Worcester, MA June 2014
Master of Science in Power Systems Engineering
Northeastern University, Boston, MA May 2014
Master of Business Administration
Northeastern University, Boston, MA May 2010
Bachelor of Science in Electrical Engineering

Professional Certifications

Professional Engineer (PE), Commonwealth of Massachusetts April 2016

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Matthew Shultz

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Case: 20-T-_____

DIRECT TESTIMONY OF
MATTHEW SHULTZ
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Matthew F. Shultz.

Q. Please state the name of your employer and its business address.

A. I am employed by Woods Hole Group, which has a business address of 107 Waterhouse Rd, Bourne, Massachusetts 02532.

Q. In what capacity are you employed?

A. I am a Senior Coastal Engineer and the Coastal Engineering and Modeling Team Leader within our Environment and Climate Business Unit.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I have been working as a coastal engineer for over 15 years. I received my Bachelor of Science Degree in Civil Engineering from Tufts University in 1996 and subsequently a Master of Science Degree in Ocean Engineering from the University of Rhode Island in 2005. I currently am licensed as a Professional Engineer in MA, CT, DE, and LA.

My area of expertise is in the modeling of coastal and estuarine hydrodynamics, waves, and sediment transport processes. My work experience has included regional coastal modeling studies, conducting alternative analyses for flood risk reduction, as well as environmental modeling studies focused on ecological

restoration and water quality. Some specific related projects include the modeling of hydrodynamics and constituent transport for the restoration of Stony Brook in Brewster, MA, conducting a review of sediment transport and water quality modeling to support permitting of dredging activities within the Thames River, CT, and the hydrodynamic characterization and sediment transport evaluation at the former Callahan Mine property in Brooksville, ME, an EPA superfund site.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. I am the Technical Lead for the hydrodynamics and sediment transport modeling conducted to evaluate sediment disturbances associated with the Project.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Appendix 4-H (Hydrodynamic and Sediment Transport Modeling Report – New York State Waters)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

WOODS HOLE GROUP FOR EARTH, FROM SPACE
A CLS COMPANY

WOODSHOLEGROUP.COM

Matthew F. Shultz, M.S., B.S., P.E.

Coastal Engineering & Modeling Team Leader / Senior Coastal Engineer

EXPERTISE

Modeling of coastal and estuarine hydrodynamics, waves, and sediment transport processes and in the evaluation of structural and non-structural shoreline protection alternatives. Project management of large-scale coastal modeling studies, the development of models for assessment of coastal hazards and adaptation measures, as well as large-scale marsh restoration and the assessment of hydraulic structures. Extensive experience in programming languages and in developing software to present, analyze, and solve engineering and scientific problems. Experience in areas of marine structure design, waterfront construction, and construction project management.

QUALIFICATION SUMMARY

- More than fifteen years of diverse professional experience in the fields of coastal, civil and software engineering
- Experienced with modeling coastal hydrodynamics, sediment and particulate transport, coastal wave dynamics, and tidal hydraulics
- Strong programming skills and knowledgeable in software design and advanced concepts
- Numerical model experience with XBeach, SRH-2D, CMS, MIKE21, EFDC, DELFT3D, HEC-RAS, ADCIRC, SWAN, RMA, STWAVE, SBEACH, CSHORE GENESIS, DYNLET, CORMIX, and ACES
- Programming experience with MATLAB, FORTRAN, C++, JAVA, VBScript, JavaScript, HTML, XML, XSL
- Database experience: Oracle, SQL Server, SQL Anywhere, MS Access

WORK EXPERIENCE

2016-present	Senior Coastal Engineer, Woods Hole Group
2010-2016	Senior Coastal Engineer/PM, Dewberry
2005-2010	Coastal Engineer, Woods Hole Group
2004	Graduate Assistant, University of Rhode Island
1998-2004	Senior Consultant, WinMill Software
1997-1998	Field Engineer, Modern Continental Construction

Education

2005 – M.S.
Ocean Engineering
University of R.I.
1996 – B.S.
Civil Engineering
Tufts University

Licenses and Registrations

- P.E., Professional Engineer, Connecticut License PEN.0030884
- P.E., Professional Engineer, Louisiana License PE.0036650
- P.E., Professional Engineer, Massachusetts License 47832
- P.E., Professional Engineer, Delaware License 21748

Professional Affiliations

- Member, American Shore & Beach Preservation Association (ASBPA)
- Member, Coasts, Oceans, Ports, and Rivers Institute (COPRI)
- Member, American Society of Civil Engineers (ASCE)

Publications & Presentations

15

Matthew F. Shultz, P.E.
Senior Coastal Engineer
mshultz@woodsholegroup.com
(508) 495-6259

KEY PROJECTS

Penobscot Bay Working Waterfront Resiliency Analysis – Lead Coastal Engineer
The Maine Department of Marine Resources, Maine Coastal Program was seeking to provide resiliency and vulnerability analyses and recommendations for adaptation measures for ten distinct working waterfront sites (WWS) in Penobscot Bay, Maine. Led the vulnerability analyses using critical elevations of infrastructure (for over-land and for over-water assets) derived from site and facility baseline characterizations conducted at each WWS. Regional and site-specific water surface elevation exposure profiles were then developed for each WWS to summarize the range of chronic (tidal) inundation and acute (storm surge) inundation occurring presently and reasonably expected to occur over the planning period due to sea level rise. For sites subject to wave exposure site-specific wave modeling was conducted for existing and future sea levels to better quantify wave hazards and potential increases in wave heights. Detailed vulnerability matrices were developed inform the planning and prioritization approach of adaptation needs for each WWS.

Environmental Review & Coastal Permitting for General Dynamics, Electric Boat Corporation, Senior Coastal Engineer
Performed independent technical review of 3-D hydrodynamics, sediment transport, and water quality modeling to support the permitting of dredging activities associated with the improvements to the South Yard facility within the Thames River in Groton, CT. Modeling was conducted using Delft3D to assess the impacts of a new sinking basin that requires dredging 984,000 cubic yards of material for construction of a new class of submarine, the Columbia class, for the US Navy. The modeling was focused on potential sediment suspension and impacts associated with the dredging as well as circulation and water quality within the new deepened basin. The work complemented environmental assessments required for the Connecticut DEEP, US Army Corps of Engineers, and Federal Consistency permits.

Argilla Road Resilience and Adaptation Design, Ipswich, MA. – Lead Coastal Engineer
The Town of Ipswich, in partnership with The Trustees of Reservations are conducting a climate adaptation project targeting Argilla Road, a key point of access for over 350,000 visitors to The Crane Estate. The Town and Trustees have identified building resilience in Argilla Road as the most important climate adaptation project within the community due to the project's vulnerability, emergency access needs, local and regional value, and visibility. Design considerations will include elevating the road surface, re-sizing a culvert to allow greater tidal flow between Castle Neck Creek and an upstream salt marsh and stabilizing the road banks using green infrastructure techniques in a designated area of critical environmental concern. The evaluation and adaptation design are targeted towards building resilience for extreme tidal and storm conditions with projected increases in sea level over the expected design life.

Mt Hope Park Master Plan, Portsmouth, RI. – Lead Coastal Engineer
In support of the development of a Master Plan for restoring the waterfront park, conducted a shoreline stabilization suitability analysis and developed conceptual designs for mix of green and gray stabilization measures at the site including a living shoreline, recreational beach, concrete seawall, and wave attenuator.

Matthew F. Shultz, P.E.
Senior Coastal Engineer
mshultz@woodsholegroup.com
(508) 495-6259

KEY PROJECTS (CONTINUED)

Eagle Neck Creek Salt Marsh Restoration, Truro, MA – Project Manager
Eagle Neck Creek, an approximately 15-acre marsh, is tidally restricted by undersized and failing culverts at Old County Road. MA Division of Ecological Restoration and the Town of Truro were interested in conducting a targeted assessment to identify an appropriately-sized culvert crossing for the replacement of the failing structures. The project involved reviewing prior studies and recommendations, a multi-phase modeling approach that involved 1-D and 2-D components to adequately characterize the hydraulics of the system, and an assessment of alternatives to restore salt marsh and promote better drainage of the marsh system. Alternatives included culvert replacement, lowering of a breach opening in the former railroad berm, and targeted dredging of the marsh channels. The validated model was used to simulate and evaluate each of the proposed alternatives under typical tides and coastal storm events together with a selected sea level scenario. This resulted in the selection of a preferred alternative that can advance to the engineering design and full-permitting phase.

Seacoast Reliability Project, Durham, NH. – Modeling Subject Matter Expert
Provided expert testimony on behalf of the Town of Durham on evaluation and analysis of the Seacoast Reliability Project (SRP), proposed by the Public Service Company of New Hampshire d/b/a Eversource and submitted for approval to the New Hampshire Site Evaluation Committee (SEC). The evaluation focused on the hydrodynamic and sediment transport modeling conducted to assess impacts related to the proposed burial of transmission cables in Little Bay, NH. The evaluation related to concerns with the methods applied and underlying assumptions used to assess the sediment dispersion/deposition and associated impacts that would occur with the proposed cable burial activities, specifically with the use of a jet plow and hand jetting.

Coastal Processes Evaluation for Plum Island, Newburyport, MA. – Lead Coastal Engineer
In support of a NFWF Grant for Community Risk Reduction through Comprehensive Coastal Resiliency Enhancement for Great Marsh Upper North Shore, MA, Woods Hole Group conducted a coastal processes analysis to assist with the understanding of existing conditions and causes for shoreline retreat and erosion along Plum Island. Wave and sediment transport models were developed to characterize sediment transport trends in average annual and extreme storm wave conditions. The coastal study will give further insight into erosion hotspots that have historically occurred along the barrier island, the influence of jetty structures/nearshore features near the inlet to the Merrimack River, and potential mitigation solutions.

Chapoquoit Beach Restoration, Falmouth, MA - Senior Coastal Engineer
Planning and design project to restore critically eroded Chapoquoit Beach using sand dredged from the Cape Cod Canal by the US Army Corps of Engineers. Updated coastal processes analysis for the West Falmouth shoreline in Buzzards Bay to develop a sediment budget in support of the beach restoration study. Sediment transport analysis assisted in determining rate of infilling occurring at the inlet to West Falmouth Harbor and maintenance dredging requirements. Work was conducted under funding from the office of Massachusetts Coastal Zone Management's (CZM) Coastal Community Resilience Grant Program.

KEY PROJECTS (CONTINUED)

Design and Permitting of Nearshore Borrow Site and Sand Bypass System at Scusset Beach, Sandwich, MA. – Senior Coastal Engineer
Conducted an analysis of coastal processes to characterize existing wave environment and sediment transport trends at Scusset Beach State Reservation. Wave and sediment transport models were then used to evaluate different sand source alternatives including offshore/nearshore borrow sites along with beach profile adjustment and mining of sand dunes. An alternatives analysis was conducted to refine the borrow site location and dimensions, and to also gauge potential impacts of sand bypassing on adjacent infrastructure and natural resources. Engineering design and permit level plans of the recommended alternative were developed to support the Town of Sandwich in the permit process for sand placement at Town Neck Beach. Work was conducted with funding from the office of Massachusetts Coastal Zone Management's (CZM) Coastal Community Resilience Grant Program.

Hudson River Project: Resist, Delay, Store, Discharge NEPA EIS, Hudson County, NJ. -Lead Coastal Engineer
Feasibility Study and EIS for a $230-million comprehensive urban water strategy conceived to protect the Hoboken waterfront, as well as parts of Weehawken and Jersey City. Known as Resist, Delay, Store, Discharge, the project incorporates hard and nature-based infrastructure measures to address surge protection, coastal defense, and systemic drainage issues. Responsible for developing a MIKE21 coastal hydrodynamic model that was integrated with a MIKE URBAN stormwater model using MIKE FLOOD. Work also involved preliminary design of flood protection concepts through wave runup and overtopping analysis, overland wave modeling using a 1-D wave transformation model, computing dynamic wave loading and forces, and evaluating landward hazards to developments and built infrastructure.

Oakwood Beach Flood Attenuation Feasibility Study, Staten Island, NY - Lead Coastal Engineer
Integrated water resources study evaluating the feasibility of coastal storm damage reduction, storm water drainage and BMPs with added nature-based-infrastructure to increase ecological restoration opportunities for a community impacted by Hurricane Sandy. Responsible for the development and evaluation of alternatives to USACE's proposed revetment including the assessment of design waves and water levels to be used in wave runup and overtopping assessments. Conducted technical oversight and QAQC for 2-D hydrodynamic model used to evaluate newly proposed channels and revetment alignment combined with flow-control structures under tidal and extreme storm conditions. Working with regional offices consulted with NY DEC, USACE, The Nature Conservancy, NYC and other stakeholders to help ensure combined needs were properly assessed and incorporated into the project.

Coastal A Zone Maps, Massachusetts - Senior Coastal Engineer
Served as technical advisor and provided quality assurance and control for the development of new Coastal A Zone Maps for the Commonwealth of Massachusetts. Developed the technical review process and administered quality reviews for new and revised mapping of the Limit of Moderate Wave Action (LiMWA) to advise community officials of hazards due to waves and where Massachusetts State Building Code requirements and other regulations would apply. Coastal A Zone maps were developed for over 1,100 miles in eight coastal counties in Massachusetts keeping with the new FEMA guidance for delineating wave hazards.

KEY PROJECTS (CONTINUED)

FEMA Risk MAP Production & Technical Services (PTS), Federal Emergency Management Agency, Nationwide - Senior Coastal Engineer and Project Manager
Led several countywide coastal updates in FEMA Regions II and III. Projects included task management of terrain processing, field reconnaissance, coastal hydrodynamics and wave modeling, erosion analyses, hazard risk assessment, mitigation, outreach, and floodplain mapping. Provided technical oversight for storm surge modeling and coastal hazard assessments. Also provided direction and input on coastal appeal resolution, as well as the development of new coastal guidelines and procedures for FEMA's coastal flood studies.

Levee Analysis and Mapping Pilot Studies, FEMA Region VI – Lead Coastal Engineer
Served as lead engineer and subject matter expert for new Levee Analysis and Mapping Procedures being implemented by FEMA HQ and Region VI for assessing non-accredited levees. Led working group in the development of new procedures for non-accredited levees subject to coastal flooding. Work involved developing consensus among multiple agencies including representative FEMA regions and the USACE. Conducted pilot studies in LA (Plaquemines and Lafourche Parishes) and TX (Freeport Levee System) to apply and evaluate new methodologies in assessing coastal risk in areas protected by non-accredited levees. Work involved levee breach assessments and the integration of 1-D to 2-D coastal hydraulic models to define the hazards within the polder.

Coastal Hazard Assessment for Lake Erie, FEMA Region V – Senior Coastal Engineer
Provided technical oversight and input on the 2-D coupled surge and wave model setup including the historical storm characterization, mesh development, and model validation. Assisted in the development of a Coastal Modeling and Analysis framework for the implementation of new methodologies and guidelines for the assessment of coastal hazards in the Great Lakes. Integrated modules to assess response-based (multi-event) erosion and wave runup using CSHORE-1D model and extreme statistical distributions. Using joint probability distributions, evaluated five combinations of waves and water levels for the assessment of hazards at the 1% and 0.2% annual return frequencies

NY-NJ Storm Surge Study, FEMA Region II - Senior Coastal Engineer
Served as lead engineer for storm surge model development tasks including ADCIRC and SWAN mesh development, model validation, and the QAQC of over 175 storm surge model simulations. Validation was conducted through hindcasts of both tropical and extratropical storms and the verification of simulated maximum surge and wave conditions. Storms were developed using the Joint Probability Method-Optimum Sampling and modeling was conducted on a high-performance computing environment. Provided technical oversight and review of computed storm surge return frequencies developed for coastal hazard assessments.

Big Bend FL Storm Surge Study, FEMA Region IV - Senior Coastal Engineer
Storm surge study encompassing Taylor, Dixie, and Levy Counties in Florida. Provided technical oversight and input for storm selection, the statistical methods (JPM) developed for study area, and model validation. Conducted detailed reviews of the seamless bathymetry/terrain surface developed for mesh generation and of the ADCIRC and SWAN modeling meshes to ensure features were adequately represented.

KEY PROJECTS (CONTINUED)

Climate Change Adaptation Strategies for Coastal Community, East Boston, MA – Coastal Engineer
Managed development of coastal engineering alternatives to protect coastal community against varying levels of projected sea level rise combined with extreme coastal storm events. Investigated retrofitting techniques, including floodproofing and other adaptation strategies, for an urban community to address impacts of climate change. Drafted design concepts and estimated projected costs for alternatives to assist in a scenario-based risk assessment. Participated in outreach activities to inform community of potential impacts, coastal engineering alternatives, and other community-specific adaptation strategies

Numerical Modeling of Hydrodynamics and Constituent Transport for Stony Brook Wetlands Restoration Feasibility Study, Brewster, MA – Coastal Engineer
The project consisted of implementation of a field data collection program, development and calibration of a two-dimensional numerical circulation model using the Environmental Fluid Dynamics Code (EFDC), and the application of the calibrated model to conduct an alternatives analysis aimed at restoring tidal flow to the Stony Brook estuarine system. The hydrodynamics and salinity model was utilized to simulate existing conditions, as well as alternatives involving the replacement of two culvert structures which convey tidal flow under the Route 6A roadway to the upstream/landward portion of the marsh. The potential benefit and impacts of each proposed restoration alternative were evaluated including upland flooding, sediment transport/scour of the channel bed or adjacent roadway, effects on drainage/infrastructure, and any effects on migratory anadromous fish. The alternatives were simulated under typical tidal, low-flow, and storm conditions to fully assess their performance and to make a recommendation on how to best achieve restoration with minimal impacts.

Coastal Structure Design for Fisheries and Marina Facilities, KSA - Lead Coastal Engineer
Evaluation and design of revetment and composite breakwater structures for fishing port developments in the Eastern Province. Conducted nearshore wave transformation modeling using STWAVE to arrive at design wave conditions. Computed wave runup, overtopping, and transmission for design scenarios and determined static and dynamic loading for composite rubble-mound/vertical wall structure.

Flood Plain Analysis for Cameron Parish, LA – Coastal Engineer
Reviewed Flood Insurance Rate Maps (FIRMs) and Base Flood Elevations (BFEs) established by the Federal Emergency Management Agency (FEMA) for coastal parish. Gathered LIDAR topographic data for the parish communities and performed comparison with elevation data used within the two-dimensional model to establish the flood zone boundaries. Developed wind field for Hurricane Ike using data from various sources for input into an ADCIRC model. Performed hindcast of Hurricane Ike using a two-dimensional ADCIRC model in order to compare simulated storm surge levels with data recorded locally within the parish, during the storm.

KEY PROJECTS (CONTINUED)

Numerical Modeling of Hydrodynamics for Proposed Arabian Canal, Dubai, UAE, Limitless – Coastal Engineer
In order to evaluate the conceptual design of a proposed canal in Dubai, two separate hydrodynamic models (1-D and 2-D) were developed. The models were used for a preliminary analysis of the flushing characteristics of the proposed 75-kilometer canal which would be connected to the Arabian Gulf. A one-dimensional analytical model and a two-dimensional numerical model of the canal were developed. The analytical model provided preliminary results that were used to determine whether certain design concepts warranted more detailed analysis, and to guide the development of the numerical model. Sensitivity analyses were then conducted to assist in developing components of the canal design, including the locations, size, and operation of tide gates, channel dimensions, and potential marina developments. The components of the canal design were varied within the models, water flushing/refreshment periods were computed, and areas having potential water quality issues were identified. Recommendations were made in order to achieve the water quality objectives while also preserving the design objectives for the development.

Evaluation of Shoreline Protection at Beach Facility, Bristol, RI. - Lead Coastal Engineer
Responsible for conducting field investigation of existing shoreline protection measures at neighborhood association beach facility in order to propose alternatives for remediating erosion incurred at the site. Analyzed average annual and extreme storm conditions in conducting desktop study to evaluate alternatives to replace or repair the existing degraded seawall structure at the beach facility. Evaluation of alternatives included an assessment of overall effectiveness, structural lifetime, construction feasibility, as well as estimates of permitting, engineering, and construction costs. Developed recommendations for the neighborhood association to effectively control erosion at the site, to retain the upland facility, and to provide safe access to the recreational resource.

Hydrodynamic Characterization and Sediment Transport Evaluation at the Former Callahan Mine Property, Brooksville, ME – Coastal Engineer
The Goose Pond estuary is a site of environmental concern and is classified as a Superfund site on the National Priorities List by the Environmental Protection Agency (EPA). The site is the former location of a zinc/copper open-pit mine where mining operations were conducted adjacent to and beneath the tidal estuary. Supported the Maine Department of Transportation (DOT) for an evaluation of contaminant transport and fate at the former Callahan Mine site connected to the Penobscot River in Brooksville, ME. Characterized the hydrodynamics and transport processes within the flooded former mine property influenced by the tides of Penobscot Bay. The project consists of a field data collection program, and the development of a three-dimensional hydrodynamic and sediment transport model to evaluate overall circulation patterns and transport within Goose Pond. Processed measured water level, salinity, and current speed/direction data to characterize baseline conditions at the site and to calibrate the model. Applied numerical model to simulate significant precipitation and storm surge events to assess the potential for sediment mobility under extreme conditions.

KEY PROJECTS (CONTINUED)

Evaluation of Shoreline Restoration at Nantasket Beach, Hull, MA. – Coastal Engineer
Responsible for developing wave and sediment transport models to simulate existing conditions and conduct an alternative analysis in support of a comprehensive coastal processes study to address ongoing coastal erosion at Nantasket Beach. Quantified site-specific wave conditions using measured wind and wave data, and the STWAVE numerical wave transformation model. Simulated transport processes along the barrier beach using a state-of-the-art sediment transport model to evaluate the performance of the existing seawall, as well as structural and non-structural shore protection measures under various environmental conditions. Assessed the performance and lifetime of the selected shore protection measures to provide guidance on potential long-term solutions for the area.

Numerical Modeling of Reverse Osmosis Water Treatment Facility Discharge Dilution, Melbourne, FL, Reiss Environmental – Coastal Engineer
Developed a three-dimensional model of the Eau Gallie River using the Environmental Fluid Dynamics Code (EFDC) to simulate the hydrodynamics and particulate transport within the estuarine system. The modeling effort was for the continued evaluation of the City of Melbourne's reverse osmosis concentrate discharge into the Eau Gallie River. Application of EFDC model involved the development of a curvilinear-orthogonal grid defining the geometry of the system, as well as defining conditions at both upstream and downstream boundaries of the Eau Gallie River, the atmospheric conditions, and the concentrate discharge into the model domain. Existing conditions were simulated and the model was calibrated and verified using collected field data. The model was then applied to simulate DEP specified design flow conditions (7Q10) to characterize the concentrate dilution and the extent of mixing zones for the parameters of interest.

Hydraulic Modeling and Scour Assessment for WM. T Morrissey Boulevard Bridge at Pattens Cove, Dorchester, MA – Project Manager/Coastal Engineer
The potential for scour was assessed for the Morrissey Boulevard Bridge crossing at Pattens Cove for both 100-year and 500-year storms. The DYNLET1 numerical model was employed to evaluate the hydraulic characteristics of the tidal waterway. The model was driven and calibrated using field data collected at the site. The tidal current velocities and water elevations obtained from the storm simulations were used to compute the maximum scour potential for the open-bottom box culvert. The scour analysis, performed following FHWA and USACE methodologies, assisted in determining the single-digit code under Item 113 of the *FHWA Recording and Coding Guide for Structure Inventory and Appraisal of the Nation's Bridges* for the Morrissey Boulevard/Pattens Cove bridge crossing. Recommendations of scour countermeasures were made for the site to offer protection from future extreme storm events.

KEY PROJECTS (CONTINUED)

Flood Plain Analysis for Federal Emergency Management Agency (FEMA) Letter of Map Revision (LOMR), Falmouth, MA – Project Manager/Coastal Engineer
Conducted flood plain analysis to support a FEMA LOMR application to revise the base flood elevations and flood zone map for coastal properties fronting Vineyard Sound in Falmouth, MA. The 100-year return period wave height and storm surge levels were established and wave transformation and wave runup modeling were completed utilizing the FEMA Coastal Hazard Analysis Modeling Program (CHAMP) and US Army Corps of Engineers methodologies. The potential for erosion was estimated and flood zone delineations were made based on the model results.

Mixing Zone Evaluation in Lake Michigan, Indiana Dept. of Environmental Management - Coastal Engineer
Conducted study to support the review of a permit renewal application for a discharge into Lake Michigan. The study included a literature review on Lake Michigan currents to help characterize receiving waters in the vicinity of the discharge. Observations of currents in Lake Michigan were also made over a 45-day period using two Acoustic Doppler Current Profiler (ADCP) systems in order to better determine the discharge site-specific ambient conditions. The current data were processed and an attempt was made to correlate the currents with wind observations obtained from nearby locations in order to model long-term conditions. This data was then analyzed to define the appropriate ambient water input conditions to use in modeling the discharge's dilution and mixing zone.

Numerical modeling of a ship-to-shore causeway in waves, N. Kingstown, MA, University of Rhode Island/Vibtech Inc. - Coastal Engineer
Developed numerical model to analyze the motion of an articulated ship-to-shore causeway system in nearshore areas. The vertical motions of the floating structure were evaluated for sea state 3 conditions. The model was developed using potential flow theory to solve the equations of motion. The work involved conducting a wave simulation from a wave spectrum to construct the time history of the structure's response. Results from the model were compared with those obtained from experimental data. A study was then completed to analyze the sensitivity of the system's dynamics to the variation of critical parameters.

Material testing and transport for casting basin at Fort Point Channel, Boston, MA, Modern Continental Construction - Engineer
Managed the environmental testing, transport, and disposal of over 500,000 cubic yards of dredge and excavate material taken from and around Fort Point Channel. Portions of the channel were dredged for the construction of a series of cofferdam cells used to close off a casting basin (dry dock) at the waterfront. Material was also excavated to form the casting basin used to construct concrete tunnel sections. The material was transported to a temporary storage location for sorting and testing. Material was then transported to various locations throughout the Northeast following DEP regulations.

KEY PROJECTS (CONTINUED)

Construction management at Fort Point Channel Crossing, Boston, MA, Modern Continental Construction - Engineer
Oversaw areas of construction related to the fabrication of concrete tunnel tube sections for the Fort Point Channel Crossing Central Artery/Tunnel project. Managed implementation of a multi-media groundwater filter system. Monitored and managed operation of technical systems, including groundwater control, construction noise control, and geotechnical instrumentation. Also worked with subcontractors in obtaining project approval and in reviewing and procuring necessary submittals.

PUBLICATIONS & PRESENTATIONS

Shultz, M.F., K. Bosma, A. Shaw, A. Herrin, 2019. "Wave Overtopping – A Key Piece in Predicting Coastal Flood Hazards", Association of State Floodplain Managers Annual National Conference, May 19-23, Cleveland, OH.

Shultz, M.F. 2019. "Numerical Modeling in Coastal Planning and Design - Applications and Case Studies", Environmental Business Council Ocean and Coastal Resources Program, January 30, 2019, Woburn, MA.

Shultz, M.F., L. Xu, R. Hamilton, P. Phippen, 2018. "Modeling to Inform Climate-Smart Habitat Restoration", American Shore & Beach Preservation Association National Conference, October 31-November 2, Galveston, TX.

Shultz, M.F. 2017. "Coastal Processes Along Plum Island", Storm Surge - Merrimack Valley Adaptation Workgroup Meeting, May 24, Newburyport, MA.

Shultz, M.F., L. Xu, R. Parab. and S. McCormick. 2015. "Incorporating a Blend of Solutions for Flood Mitigation in Hurricane Sandy Recovery", Coastal Structures and Solutions to Coastal Disasters Joint Conference, September 9-11, Boston, MA.

Shultz, M.F. and T. Graupensperger. 2014. "Conceptual Nature-Based and Gray Infrastructure for Flood Resiliency at Oakwood Beach, NY After Hurricane Sandy" Restore America's Estuaries 7th National Summit on Coastal and Estuarine Restoration, November 1-6, National Harbor, MD.

Shultz, M.F. 2014. "Hurricane Isabel – A Look Back and to the Future." American Shore & Beach Preservation Association National Conference, October 15-17, Virginia Beach, VA.

Shultz, M.F. 2013. "Post-Hurricane Sandy Advisory Base Flood Elevations" 2013 NJ Society of Professional Land Surveyors General Membership Meeting, January 8, Toms River, NJ.

Shultz, M.F. 2012. "FEMA Region III Coastal Hazard Analyses and FIRM Updates" 2012 MD Association of Floodplain and Stormwater Managers Annual Conference, October 25, Linthicum Heights, MD.

Shultz, M.F, 2012. "Coastal Hazard Analyses within Delaware Bay and River" Delaware River Basin Commission Flood Advisory Committee September 2012 Meeting, Trenton, NJ.

PUBLICATIONS & PRESENTATIONS (CONTINUED)

Shultz, M.F., A. Farhadzadeh, and V. D. Nimmala. 2011. "Inundation due to Levee Wave Overtopping - An Integrated Modeling approach ." 2011American Shore & Beach Preservation Association Fall Conference, October 19-21, New Orleans, LA.

Douglas, E., P. Kirshen, C. Watson, J. Wiggin, M. Shultz, and M. Paolisso. 2010. "Coastal Flooding and Environmental Justice: Identifying Vulnerable Communities and Feasible Adaptation Strategies for the Boston Metro Area." 2010 EWRI Congress, May 16-20, Providence, RI.

Hamilton, B. and M.F. Shultz. 2010. "Salt Marsh and Anadromous Fish Run Restoration at Stony Brook, Brewster, MA." Restore America's Estuaries Annual Conference, November 13-17, Galveston, TX.

Shultz, M.F. and K.F. Bosma. 2007. "3-D Hydrodynamic and Water Quality Modeling to Assess the Impacts of a Reverse Osmosis Water Treatment Discharge." 2007 American Shore & Beach Preservation Association Fall Conference, October 21-24, Galveston, TX.

Shultz, M.F. 2005. "Simulation of a Ship-to-Shore Causeway System in Waves." Master's Thesis, University of Rhode Island, Kingston, RI.

Sunrise Wind LLC

Application of Sunrise Wind LLC for a Certificate of Environmental Compatibility and Public Need for the Construction of Up to 6.2 Miles (320 kilovolt [kV]) of Direct Current (DC) Submarine Export Cable from the New York State Territorial Waters Boundary to the Smith Point County Park on Fire Island in the Town of Brookhaven in Suffolk County and Up to 17.5 Miles (320 kV) of Onshore Transmission Cable from the Landfall at Fire Island to an New Onshore Converter Station in the Town of Brookhaven and Up to 1 Mile (138 kV) of Alternating Current (AC) Onshore Interconnection Cable Connecting to the Existing Holbrook Substation in the Town of Brookhaven in Suffolk County

Direct Testimony of Elizabeth Weatherby

December 9, 2020

Submitted to:
New York State Public Service Commission
Case 20-T-____

Submitted by:
Harris Beach PLLC

BEFORE THE
NEW YORK STATE
PUBLIC SERVICE COMMISSION

APPLICATION OF SUNRISE WIND LLC FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION OF UP TO 6.2 MILES (320 KILOVOLT [KV]) OF DIRECT CURRENT (DC) SUBMARINE EXPORT CABLE FROM THE NEW YORK STATE TERRITORIAL WATERS BOUNDARY TO THE SMITH POINT COUNTY PARK ON FIRE ISLAND IN THE TOWN OF BROOKHAVEN IN SUFFOLK COUNTY AND UP TO 17.5 MILES (320 KV) OF ONSHORE TRANSMISSION CABLE FROM THE LANDFALL AT FIRE ISLAND TO AN NEW ONSHORE CONVERTER STATION IN THE TOWN OF BROOKHAVEN AND UP TO 1 MILE (138 KV) OF ALTERNATING CURRENT (AC) ONSHORE INTERCONNECTION CABLE CONNECTING TO THE EXISTING HOLBROOK SUBSTATION IN THE TOWN OF BROOKHAVEN IN SUFFOLK COUNTY

Case: 20-T-_____

DIRECT TESTIMONY OF
ELIZABETH WEATHERBY
ON BEHALF OF
SUNRISE WIND LLC

Q. Please state your full name.

A. My name is Elizabeth Weatherby.

Q. Please state the name of your employer and its business address.

A. I am employed by AKRF, Inc., which has a business address of 440 Park Ave. South, New York, New York 10016.

Q. In what capacity are you employed?

A. I am a Technical Director.

Q. Have you enclosed a copy of your resume or CV to your testimony?

A. Yes.

Q. Please summarize your educational background and work experience.

A. I received a Master of Arts in Conservation Biology from Columbia University in 2006, and a Bachelor of Science in Biology: Marine and Freshwater from the University of New Hampshire in 2004.

I have 14 years of professional experience in environmental assessment and permitting coordination for electric transmission and power generation projects. I have served as both project manager and as an assistant project manager for projects regulated under Article VII and Article 10 of the New York Public Service Law as well as under New York's State Environmental Quality Review Act and I have prepared numerous permit submittals to other state and local agencies.

Q. Please describe your role with respect to the preparation of Sunrise Wind's Article VII application that is the subject of this proceeding (the "Application").

A. AKRF was retained by Sunrise Wind as a subconsultant to Stantec to assist in the development and preparation of the Article VII Application for the Project.

Q. What portion(s) of the Application are you sponsoring or co-sponsoring?

A. Exhibit 2 (Location of Facilities), Exhibit 3 (Alternatives), Exhibit 4 (Environmental Impact), Exhibit 7 (Local Ordinances), Exhibit 8 (Other Pending Filings), Exhibit E-5 (Effect on Communications), Exhibit E-6 (Effect on Transportation), Appendix 1-B (Agency Outreach and Correspondence), Appendix 4-F (Preliminary Invasive Species Plan), and Appendix 7-A (Town and County Ordinances)

Q. Were the materials referenced above prepared by you or under your direct supervision and control?

A. Yes.

Q. Does this conclude your testimony?

A. Yes.

ELIZABETH J. WEATHERBY

TECHNICAL DIRECTOR

Ms. Weatherby is a Technical Director with fourteen years of professional experience providing environmental permitting and consulting services, supporting a variety of clients in the renewable energy, electric transmission and power generation industries. She specializes in providing comprehensive and detailed consulting services for projects in various states including New York, New Jersey, Pennsylvania, Maryland and Connecticut. Ms. Weatherby has served as both project manager and as an assistant project manager for projects regulated under Article VII, Article X and Article 10 of the New York Public Service Law (PSL) as well as the New York State Environmental Review Quality Act (SEQRA), and has worked on projects reviewed under the National Environmental Policy Act (NEPA). In addition, Ms. Weatherby has guided clients through the regulatory review processes and successfully obtained permits and authorizations from agencies including, but not limited to, New York State Department of Conservation (NYSDEC); New Jersey Department of Environmental Protection (NJDEP); Pennsylvania Department of Environmental Protection (PaDEP); U.S. Army Corps of Engineers (USACE); Federal Aviation Administration (FAA) and various local government agencies. Ms. Weatherby's experience encompasses the following areas: biology, general and marine/freshwater; multi-media environmental permitting; regulatory review/fatal flaw analysis; environmental impact studies/assessments; and wetland delineation.

BACKGROUND

Education

M.A., Conservation Biology, Columbia University, 2006

B.S., Biology; Marine and Freshwater, University of New Hampshire, 2004

Licenses & Certifications

Rutgers University Wetland Delineator Program, 2008

Years of Experience

Year started in company: 2018

Year started in industry: 2007

RELEVANT EXPERIENCE

NextEra Energy Transmission New York, Inc., Case 13-T-0455 - Article VII Permitting and Environmental Studies for new 345 kV Transmission Line – Upstate and Southeast, New York

While at another firm, Ms. Weatherby served as Project Manager for a confidential client on its bid to the AC Transmission Upgrade Proceeding as part of the New York Governor's Energy Highway initiative. The firm was retained to prepare a modified Article VII Application pursuant to Article VII of the PSL. The project consisted of the construction of new, 345 kV transmission lines within existing utility right-of-way in Upstate New York for a total of approximately 152 miles. The firm provided environmental consulting services to the client on the project including initial route evaluations and assessments and initial agency consultations. Ms. Weatherby led the preparation of the Part A Article VII Application (the Article VII process was bi-furcated for this proceeding), which was submitted in October 2013 and resubmitted in January 2015 with additional information filed in March 2015. In December 2015, the NYSPSC recommended two of the client's routes to continue into the NYISO selection bid for further evaluation; however the projects were not selected.

Dunkirk Gas Corporation, Case 14-T-0360 - Article VII Permitting Services for New Natural Gas Pipeline Project – Chautauqua County, New York

While at another firm, Ms. Weatherby served as Assistant Project Manager for a new, large diameter natural pipeline proposed to be constructed by NRG. Until the project permitting work efforts were placed on hold in January 2015, Ms. Weatherby coordinated the project's permitting efforts under Article VII of the PSL as well as other required environmental permits from the USACE, the New York State Department of State (NYSDOS) and NYSDEC. The firm's work efforts included the performance of wetland delineations; assistance in the siting of the pipeline; and the preparation of the Article VII Application and other required environmental permits. Ms. Weatherby led the Article VII transmission siting process which included the preparation of the project's Environmental Management and Construction Plan (EM&CP).

Confidential Client, Article VII Permitting Services for New Natural Gas Pipeline Project – Kings County, New York (Assistant Project Manager: 2016-2017)

While at another firm, Ms. Weatherby served as Assistant Project Manager for a new, 2.4-mile natural gas pipeline proposed to be constructed by a confidential client. Until the client put the project on hold in October 2017, the proposed pipeline was undergoing permitting under the consolidated Article VII transmission siting process as well as other environmental permitting from the USACE and NYSDEC. Ms. Weatherby oversaw the performance of wetland delineations; reviewed the siting of the pipeline; and led the preparation of the Article VII application and other required environmental permits.

Consolidated Edison Company of New York, Inc, Case 06-T-0710 - 345 kV M29 Transmission Line Project – Yonkers, New York and New York City, New York

While at another firm, Ms. Weatherby served as Assistant Project Manager and then Project Manager for the preparation of an EM&CP in accordance with the NYSPSC for a new 9.5-mile underground transmission line between the Sprain Brook Substation in Yonkers, Westchester County, and the new Academy Substation in Manhattan. The project, which included a major crossing of the Harlem River via a new tunnel, involves coordination with the NYS Department of Transportation (NYSDOT), the City of Yonkers, and New York City officials. The Article VII Application was filed in September 2006, and the EM&CP was provided to the DPS staff in June 2007. The Article VII Certification was issued August 2007 and the EM&CP was approved in March 2008. The project completed construction in 2009.

Nexans Norway AS, Case 01-T-1679 - Long Island Replacement Cable Project – Northport, New York and Norwalk, Connecticut

While at another firm, Ms. Weatherby assisted in the preparation of the EM&CP in accordance with the NYSPSC requirements, and the Development and Management Plan (D&M Plan) in accordance with the Connecticut Siting Council requirements, for the removal of seven fluid-filled 138 kV cables and the installation of three new solid dielectric cables between Norwalk, Connecticut and Northport, Long Island. The firm's scope of work also included the removal and disposal of the dielectric fluid from the existing cable system and environmental inspection services during cable removal and installation. Ms. Weatherby led the preparation of the EM&CP and D&M Plans for the firm. The EM&CP was provided to the DPS Staff in July 2007. The Article VII Certificate was issued August 2007 and the EM&CP was approved in December 2007. The project began fluid removal in September 2007, and the seven cables were removed in the winter of 2008. Final burial of the three new cables was completed in September 2008.