

## SECTION 4 TECHNICAL ABILITY

The team assembled for the Project brings local experience and capability in the renewable energy market together to support Project development. The Project team is highly qualified with extensive experience in developing, permitting, constructing, managing, and operating numerous utility-scale wind power projects in the northeastern United States (U.S.) and across the country.

The Applicant (Western Maine Renewables, LLC) is a partnership between Patriot (Patriot Renewables, LLC) and Cianbro (Cianbro Development Corporation), formed in 2012 to acquire and pursue redevelopment of the former USAF Radar Station.

Patriot is a renewable energy development company affiliated with Jay Cashman, Inc. (Cashman). Cashman is a well-established, heavy civil and marine construction contractor with significant operations in Massachusetts and construction experience throughout the U.S. Cashman is a privately-held firm with annual revenues of approximately \$150 million.

Since 2008, the Cashman companies have worked to establish a position in the wind energy industry by gaining experience in the development, construction, and operation of wind projects. Patriot has successfully developed and permitted the Spruce Mountain Wind project in Woodstock, Maine; the Saddleback Ridge Wind project in Carthage, Maine; and the Canton Mountain Wind project in Canton, Maine. Patriot's affiliate, Eco Industries, LLC, has overseen construction for these projects, as well as the 4.5 MW Beaver Ridge Wind project in Freedom, Maine, and a single-turbine project at the Massachusetts Maritime Academy in Bourne, Massachusetts. With the exception of the single-turbine project, Patriot manages operations of all of these projects. Recently, Patriot has begun pursuing solar energy projects, including development, construction and operation of the 1.2 MW DC landfill solar project in Stoughton, Massachusetts. Patriot has over 140 MW of wind energy in operation or development in New England. Information about these projects can be found at [www.patriotrenewables.com](http://www.patriotrenewables.com).

Cianbro has completed the construction of numerous renewable energy projects in the northeastern U.S. Cianbro also has a national reputation for successfully completing complex projects safely in environmentally sensitive areas. Cianbro's wind energy project experience includes the Fox Island, George Mountain, Jiminy Peak, Spruce Mountain, Groton, Passadumkeag, Pisgah, and Big Level Wind projects. Cianbro also developed, built and operates Maine's first utility-scale solar project. Cianbro is part of The Cianbro Companies that has revenues in excess of \$1 billion per year.

The local Project development team includes Tetra Tech, Inc. (Tetra Tech) (natural resource assessments, wildlife, permitting, historic archaeological resources, and shadow flicker assessment), Engineering & Management Services, Inc. (civil engineering and stormwater analysis), RLC Engineering, Inc. (electrical engineering), Public Archaeology Laboratory, Inc. (historic architecture survey); TJD&A Landscape Architects and Planners (TJD&A) (visual impact analysis), Market Decisions, LLC (intercept surveys); Broadwater Environmental, LLC (soil surveys); Resource Systems Group, Inc. (sound assessment); and Verrill Dana (legal counsel).

An organizational chart is provided in Figure 4-1. Resumes detailing the experience and qualifications of key team members are presented in Exhibit 4-1 (Resumes).

### Figures

- Figure 4-1 Project Organizational Chart

### Exhibits

- Exhibit 4-1 Resumes

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Western Maine Renewable Energy Project  
MDEP Site Location of Development/NRPA Combined Application

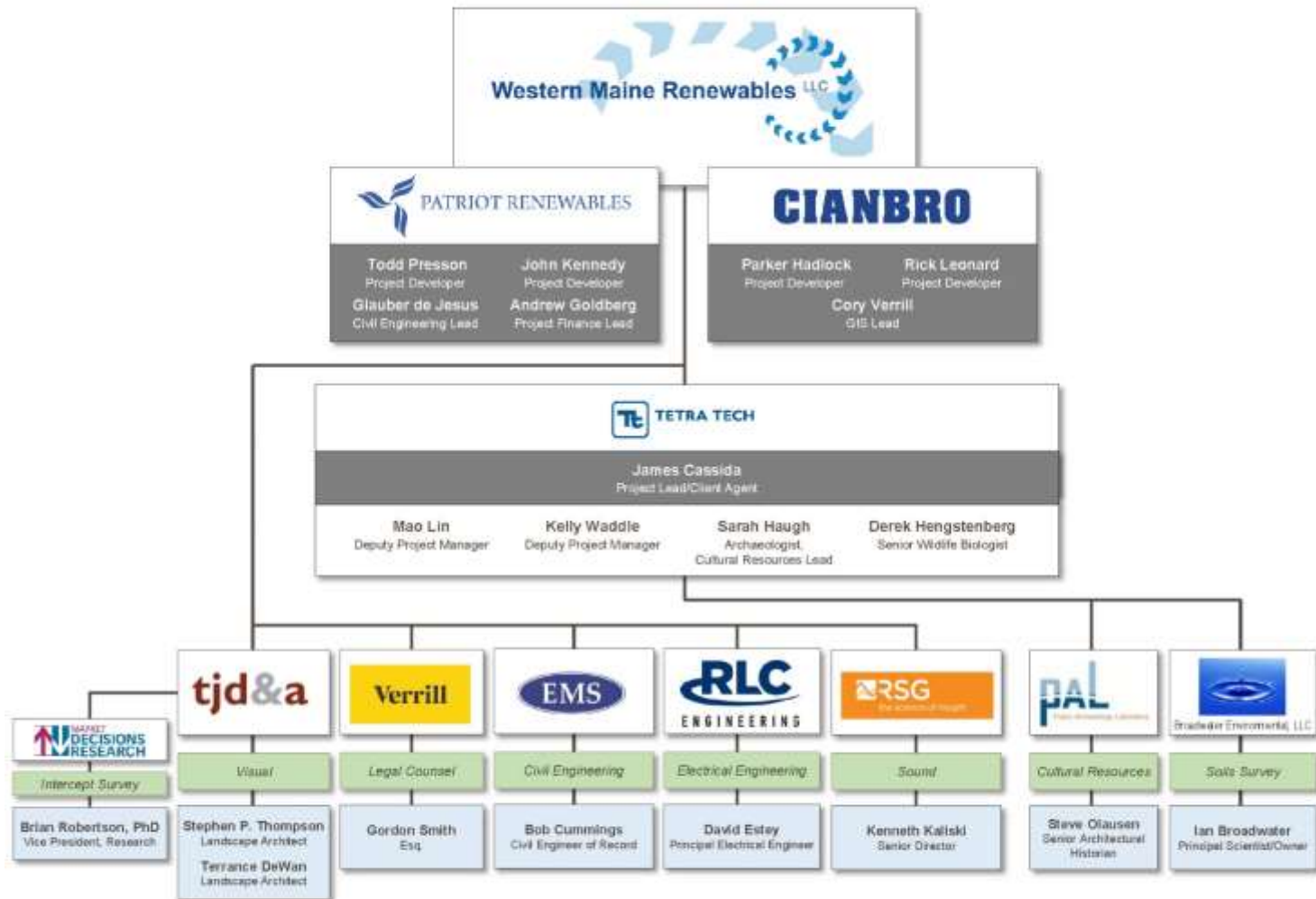


Figure 4-1 Project Organizational Chart.

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EXHIBIT 4-1      RESUMES

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## **TODD PRESSON** **Chief Operating Officer**

### **PROFESSIONAL EXPERIENCE**

#### **Chief Operating Officer, Patriot Renewables, LLC, 2006 – Present**

- Team leader for development of commercial-scale wind energy projects in New England, including site prospecting, landowner negotiations, public outreach, permitting, interconnection, power purchase agreements, construction, and operations.
- Oversee operations and maintenance activities for five operating wind power sites totaling 90 MWs.
- Additional wind and solar sites under development.
- More information at: <http://www.patriotrenewables.com>

#### **Director, Eolectric, Inc., 2003 – 2014**

- Member of Board of Directors for this privately held wind power development and consulting company located in Brossard (Quebec) Canada. Eolectric grew from its roots as a wind measurement and consulting company to a development company responsible for initiating over 500 MWs of projects now in operation, including the 101.5 MW Vents du Kempt project on the Gaspé Peninsula in Quebec. More information at: <http://www.eolectric.com/en>

#### **Developer, Ameresco, 2004 – 2006**

- Developer for this leading energy services company headquartered in Framingham, MA.
- Evaluated opportunities for small wind projects at numerous locations in the U.S.
- Sited and secured grant award for 600 kW turbine in Illinois, which led to successful project completion in 2007.
- Negotiated landowner lease options, secured preliminary wind study, wrote and submitted proposal to provide a turnkey 18.9 MW wind project to a Midwest utility.
- Conducted market assessment, mapping work, site selection, landowner negotiations and preliminary discussions with local authorities for a large wind project in the northeast.

#### **Developer, enXco, 2001 – 2004**

- Developer for this Palm Springs-based wind energy development and operations company.
- Managed overall development activities for a \$40 million Hoosac wind project in western Massachusetts, including relations with landowners, town officials, media and permitting agencies. Led public meetings and hearings resulting in permitting of wind measurement towers and wind turbines on private and public land in two towns. Formed and led a team of professionals providing engineering, environmental, permitting, power sales, interconnection and public outreach activities in support of overall project development.

#### **Vice President and Investment Manager, KMS/Mountain Energy, Inc., 1997 – 2001**

- Directed key due diligence, asset optimization, and general management activities for independent power investments in eastern North America, including fuel procurement strategies, operating margin analysis, contract negotiation, and new project development.
- Researched new technology applications in the emerging distributed generation market, including micro-power and renewable energy. Developed a refined project acquisition and development market strategy, and co-authored company business plan.

- Worked-out and facilitated the sale of \$10 MM energy conservation investment in New Jersey.
- Managed due diligence, negotiation, deal structuring, closing and oversight of a \$2 MM venture capital investment in a Massachusetts industrial wastewater treatment company. Active board member during critical growth period leading to a ten-fold improvement in revenue.

## **EDUCATION / CERTIFICATIONS**

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### **Rensselaer Polytechnic Institute (RPI), Troy, NY**

MBA, Management & Technology, 1997

### **University of Vermont, Burlington, VT**

Graduate courses in Statistics, 1992-1995

B.S., Mechanical Engineering, 1986

### **Tau Beta Pi National Engineering Honor Society**

### **Member, American Society of Mechanical Engineers**

### **Licensed Professional Engineer**

# JOHN M. KENNEDY, CFA, ESQ.

549 South Street- Quincy, MA 02169

[jkennedy@jaycashman.com](mailto:jkennedy@jaycashman.com)

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## PROFESSIONAL EXPERIENCE

### **Patriot Renewables, LLC**

**Boston, MA**

*Project Developer*

*2/18 to present*

- Support development activities of utility-scale wind, solar, and energy storage projects
- Responsible for understanding local and state legislation, regulations, and policies
- Experienced with technical components of energy development including project siting, site design, interconnection feasibility analysis, and securing offtake through PPAs

### **Mint Energy**

**Boston, MA**

*Director of Pricing and Risk Management / Counsel*

*4/13 to 1/18*

- Solely responsible for all customer pricing, scheduling, trading and risk management
- Created retail electric price models for ISO-NE and PJM, including PA, MD, IL and OH
- Executed strategic power, FTR and option trades

### **Transfuels LLC/BLU LNG**

**Boston, MA**

*LNG Strategy and Supply Manager, East Coast*

*10/12 to 10/13*

- Led the development of new LNG fueling stations in the Eastern United States
- Originated, negotiated and executed spot and long-term LNG purchase contracts
- Analyzed multiple liquefaction facility project investment opportunities worth up to \$100 million

### **EnerNOC, Inc.**

**Boston, MA**

*Senior Account Manager*

*3/10 to 9/12*

- Managed all aspects of retail energy supply procurement for large customers
- Negotiated supply contracts for electricity, gas, oil, diesel and propane

### **First Wind**

**Boston, MA**

*Risk Manager*

*5/09 to 3/10*

- Managed loan compliance process as the principal contact for all lenders
- Evaluated creditworthiness of counterparties and suppliers

### **Constellation NewEnergy, Inc. / AES NewEnergy, Inc.**

**Boston, MA**

*Multiple Positions*

*7/98 to 10/08*

*Director, Customer Strategy*

*4/06 to 10/08*

- Developed and implemented a customized model to calculate optimal hedging strategy
- Negotiated long term supply contract terms

*Senior Analyst – Risk & Credit*

*3/03 to 4/06*

- Analyzed all solar and wind origination deals for pricing, risk, credit and contract negotiation
- Created project pro-forma financials and modeled cash flow



*Term Trader / Short Term Trader / Scheduler*

*7/98 to 2/03*

- Earned successive promotions from scheduler to short term trader to term trader/portfolio manager over a short time period
- Led a team of junior traders who were responsible for short term activity

**Vitol Gas & Electric**

**Boston, MA**

*Real Time Electricity Trader / Scheduler*

*8/97 to 7/98*

- Cold called utilities across the country to determine locational arbitrage opportunities
- Executed real time trades and scheduled the power flow, often across multiple utilities

**Scudder, Stevens & Clark**

**Boston, MA**

*Bond Trader / Jr. Analyst / Trust Accountant / Customer Service Rep.* *7/91 to 8/97*

- Promoted from customer service phone representative to a short term bond trader
- Managed multiple short term portfolios totaling \$650MM in assets

**EDUCATION**

**Bar Certification**

*Massachusetts State Bar, 2010 to present*

**Association for Investment Management and Research**

*CFA designation (Chartered Financial Analyst, charter #33854)*

**New England School of Law**

**Boston, MA**

*Juris Doctor*

**Boston College, Carroll School of Management**

**Chestnut Hill, MA**

*Master of Science in Finance (MSF)*

**Providence College**

**Providence, RI**

*Bachelor of Science in Business Administration*



**GLAUBER DEJESUS**  
**Pre-Construction Engineer/Civil Engineer**

**PROFESSIONAL EXPERIENCE**

**Pre-Construction Engineer/Civil Engineer, Jay Cashman, Inc., LLC, 2011-2018; 2019 – Present**

- Determined the feasibility of various sites for the development of wind energy projects.
- Successfully managed the permitting process of various projects in a timely manner.
- Responsible for the overall design process which minimized environmental impact and maximized the potential of each site.
- Assisted in identifying new wind and solar opportunities by exploring technical and financial feasibility.
- Oversaw windfarm construction ensuring design and specifications were followed.
- Assisted in the bidding and preconstruction of various dredging and heavy civil projects.

**Civil Engineer, Prime Engineering, 2018-2019**

- Responsible for the site design of residential, commercial and institutional projects.
- Represented project to stakeholders (regulatory groups, landowners, officials, etc.) to drive project execution.

**Civil Engineer, Saski Associates, 2004 – 2011**

- Prepared various cost estimates to serve as the base for the owner during the bid process.
- Integral part of the design team from beginning of site due diligence process, through the approvals and permitting, final design, and construction phase.
- Implemented new software to reduce production time and increase efficiency.

**EDUCATION**

**M.S. in Construction Management, May 2016**

**B.S. in Civil Engineering Technology, August 2004**

**A.S. in Architectural Engineering, August 2001**

**RELEVANT PROJECT EXPERIENCE**

**Project:** Canton Mountain Wind  
**Position:** Civil Engineer  
**Responsibilities:** Civil Design, Permitting, Constructability Review  
**Highlights:** Canton Mountain Wind has eight 2.85-megawatt GE turbines with 103 meter rotors mounted on 85 meter towers, for a total nameplate capacity of 22.8 megawatts. The turbines were erected on rock anchor foundations secured to bedrock. The generated power travels through an underground ridgeline collector system, then overhead to the expanded substation built for the Saddleback Project. The project generates ~61.8 million kilowatt hours of clean, renewable energy each year; that's enough to power over 9,400 homes and reduce the amount of CO2 emissions by the equivalent of 2.4 million gallons of gasoline each year.

**Project:** Saddleback Ridge Wind  
**Position:** Civil Engineer  
**Responsibilities:** Civil Design, Permitting, Constructability Review  
**Highlights:** The Saddleback Ridge Wind Project is a 34.2-megawatt (MW), 12-turbine wind project located in Carthage, Maine. GE's 2.85- MW turbines use state-of-the-art technology that maximizes efficiency and produces more electricity with fewer towers. The wind turbines generate nearly 105 million kilowatt-hours (kWh) of clean, renewable electricity each year. That is enough to power about 17,500 homes (based on 500 kWh per home per month), and reduces the amount of CO2 emissions by the equivalent of ~5.4 million gallons of gasoline consumed.

**Project: Spruce Mountain Wind**

Position: Civil Engineer

Responsibilities: Civil Design, Permitting, Constructability Review

Highlights: Spruce Mountain Wind is a 10-turbine, 20-megawatt (MW) project that became operational in December 2011. Ten 24'-diameter x 6'-deep turbine foundations included 18 3"-diameter/42'-length rock anchors/foundation; 144 turbine anchor bolts/foundation; and 100 cubic yards of concrete/foundation. The electrical/collector system installation included 4.1 miles of overhead 34.5-kv transmission line, 13,500 feet of 34.5-kv underground line, and 7,500 feet of single-phase overhead line to feed the project's O&M building.



## **ANDREW GOLDBERG** **Chief Financial Officer**

### **PROFESSIONAL EXPERIENCE**

#### **Chief Financial Officer, Patriot Renewables, LLC, 2009 – Present**

- Accountable for the day to day financial operations of a renewable energy company with a pipeline of approximately 125MW or \$300M of wind transactions
- Responsible for transaction structure, tax benefits, sourcing financing, and procuring and negotiating power purchase agreements
- Developed and implemented financial analysis tools used to evaluate current and prospective transactions
- Negotiate turbine supply and third party agreements

#### **Principal - Finance, Boston Financial (formerly MMA Financial & Lend Lease), 2008 – 2009**

- Involved in the day to day financial operations of a real estate investment firm with more than \$10 billion in assets under management throughout 120 funds consisting of 1,500 properties
- Developed and implemented financial planning and analysis models used to evaluate the financial performance of the company's business lines
- Provide strategic consulting services to Fund Management, Asset Management, and Fund Accounting groups
- Developed and implemented process redesign initiatives that increased transparency, cohesiveness, and reduced redundant tasks throughout each division
- Support senior management in the analysis, diligence and execution of acquisitions and third party contracts including preparation of quarterly reports to the Board of Directors
- Creation and implementation of corporate Accounting and Treasury functions
- Promoted five times during my ten year tenure with the firm

#### **Principal - Acquisitions, Boston Financial (formerly MMA Financial & Lend Lease), 2001 – 2008**

- Accountable for tasks relating to origination and execution of low-income housing complexes including: deal structuring & negotiation, investor communications, financial modeling, due diligence and investment committee presentation and approval process
- Acquired over 70 properties with total development costs exceeding \$1 billion
- Generated over \$25 million in transaction fees for the firm
- Integrated our debt and equity platforms to increase cross-selling, productivity, and profitability
- Developed a sophisticated transaction pricing model and committee package for the organization that has been used for over 200 transactions representing \$25 billion in development costs
- Reviewed individual equity investments for the Acquisitions group prior to fund closings
- Trained and mentored approximately 25 professionals
- Financially engineered investment transactions to maximize investor return while satisfying client requirements in a competitive market



**Associate – Asset Management, Boston Financial (formerly MMA Financial & Lend Lease), 1999 – 2001**

- Managed a portfolio of low-income housing complexes (apx. 5,000 units)
- Reviewed and analyzed property financial statements, quarterly, for all assets in my portfolio
- Prepared reports to investors detailing fund performance each quarter

**Mutual Fund Accountant, Scudder Kemper Investments, 1998 – 1999**

- Responsible for the transaction accounting, daily reconciliation and periodic financial reporting of four municipal bond mutual funds.

**EDUCATION / CERTIFICATIONS**

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**Bentley University, Waltham, MA**

B.S., Finance & Economics, 1998

## W. Parker Hadlock

*General Manager – Cianbro Development Corporation*

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Parker has 35 years of construction and EPC experience in the Industrial, Marine, Heavy Civil & Power Markets, and has managed many of Cianbro’s largest and most complex projects. Parker was a critical member of the Cianbro teams responsible for the successful entry into the Offshore, Module, and Renewable Energy Markets. At the request of former Maine Governor John E. Baldacci, Parker was asked to participate on the Ocean Energy Task Force. This Task Force was created to review alternative energy development options for the State of Maine. Parker’s strong convictions for carbon-free energy sources are what make him a fundamental part of this task force.

### EDUCATION

B.S. Mechanical Engineering  
University of Maine  
Orono, ME

### PROFESSIONAL AFFILIATIONS

American Wind Energy Association  
RENEW Northeast  
Maine Renewable Energy Association  
Associated General Contractors

### CORE RESPONSIBILITIES

- Responsible for Cianbro’s Development Projects where Cianbro develops, engineers, permits, constructs, owns and operates a facility that leverages Cianbro’s many core competencies. Cianbro’s development project goals are to provide a steady revenue stream over many years to compliment our construction operations.
- Responsible for Cianbro’s “New Market” business development that takes Cianbro’s core competencies and applies them to a developing market that is not in the existing book of business for our existing market sector business units.

### Pittsfield Solar | Pittsfield Solar, LLC

**Pittsfield, ME | \$ \***

Cianbro constructed a 10 MW AC solar array, including the installation of 40,200 modules at 340 W and 345 W. Generated energy is being delivered via a 2.7-mile transmission line to a Central Maine Power substation.

### AquaVentus | University of Maine

**Orono, ME | \$ 1 Million**

Cianbro worked with the Advanced Structures and Composites Center at the University of Maine to develop the first grid-connected floating offshore wind turbine. The turbine, named VolturnUS 1:8, was the first offshore wind turbine to be deployed off the coast of the United States/Maine and the first concrete floating wind turbine in the world.

### Pisgah Mountain Wind | Pisgah Mountain, LLC

**Clifton, ME | \$ \***

Cianbro was the EPC contractor for the Pisgah Mountain Wind Energy project. The engineering, procurement, and construction scope of work consisted of the site development, including access roads and turbine sites, coordination of the transportation of the turbines from the port to the site, erection of five 1.8 MW Vestas V90 wind turbines, underground collection, overhead collection, and a complete collection substation.

### Module Yard Development | Motiva Enterprises, LLC

**Brewer, ME | \$ 147 Million**

Cianbro assembled 51 modules at its deep-water facility along the Penobscot River. Completed modules were barged to Port Arthur as part of the construction of the 325,000 barrel-per-day capacity expansion project.

### Amethyst Semi-Submersible Drilling Rigs | Petrodrill

**Brewer, ME | \$ 172 Million**

Cianbro completed the construction of two, 12,000-ton, offshore, semi-submersible, oil drilling vessels.

\* Withheld Upon Owner Request

## Rick C. Leonard

### *Director of Finance*

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As Director of Finance & Assistant Treasurer, Rick is responsible for overseeing all financial management of all Cianbro companies, including the areas of financial reporting, accounting, tax, and treasury. Rick participates in all aspects of financial management, focusing on opportunities to develop and acquire businesses, improve profitability, reduce overhead, enhance financial statement presentation and manage liquidity and investments. Rick also acts as the liaison with the companies' banking and financing providers.

#### **EDUCATION**

B.S. Business Administration  
Accounting & Finance  
University of Maine  
Orono, ME

#### **CERTIFICATIONS**

Certified Public Accountant (CPA)

#### **CORE RESPONSIBILITIES**

- Overseeing all financial management of all of The Cianbro Companies
- Financial reporting, accounting, tax & treasury
- Business acquisition, profitability & investments
- Liaison between The Cianbro Companies and banking / financial providers

In addition to Rick's financial experience with Cianbro, he has worked in all disciplines of administration and maintenance of financial assets for over 30 years, including:

#### **Interim CFO, Manager of Financial Services, Director of Risk Management, Assistant Corporate Secretary – Cianbro Corporation**

- Responsible for budgets, administration of general ledger, and preparation of corporate financial statements
- Analyzed lease versus purchase, stock acquisition, and other financing decisions, through direct collaboration
- Responsible for overall management of the corporate insurance programs, including evaluation, and procurement of project-specific coverage
- Responsible for the financial management of the Maine self-insured worker's compensation program

#### **EXPERIENCE PRIOR TO CIANBRO**

##### **Auditor-In-Charge – KPMG Peat Marwick; Portland, ME**

- Responsible for assisting with development of the audit plan, controlling audit costs, and supervising staff
- Reviewed financials statements, drafted reports, and provided beneficial services to clients in the banking, manufacturing, and construction industries

\* Withheld Upon Owner Request

## Cory W. Verrill

### Project Engineer

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Cory has over 30 years of drafting, survey, and mapping experience on a variety of projects. Other responsibilities have included site mapping and planning; utility, local, state, and federal permitting; creating monthly reports of construction progress, budget performance and quality management. Cory has also coordinated submissions, tracking, and archiving construction documents. He has experience performing survey layout on a variety of projects ranging from site grading to bridge girder layout. As a field engineer, Cory was responsible for establishing survey control, collecting existing site conditions, performing quantity take-offs, requisitioning material, planning sequences, coordinating layout and fit up concurrent with concrete placement and steel erection, and acquiring as-built survey data. Cory's CAD experience was utilized to integrate data from consultants and data collected on-site to develop control, take-offs, and layout with Carlson Survey software and AutoCAD. Currently, Cory's CAD and survey experience is used to aid the creation and acquisition of geographic data that Cianbro is accumulating in its database.

#### EDUCATION

B.S. Civil Engineering Technology  
University of Maine  
Orono, ME

Architectural Drafting  
Portland Arts & Technology  
Portland, ME

#### CORE RESPONSIBILITIES

- Overseeing project development and permitting

#### Pittsfield Solar | Pittsfield Solar, LLC

Pittsfield, ME | \$ \*

Cianbro constructed a 10 MW AC solar array, including the installation of 40,200 modules at 340 W and 345 W. Generated energy is being delivered via a 2.7-mile transmission line to a Central Maine Power substation.

#### AquaVentus | University of Maine

Orono, ME | \$ 1 Million

Cianbro worked with the Advanced Structures and Composites Center at the University of Maine to develop the first grid-connected floating offshore wind turbine. The turbine, named VoltturnUS 1:8, was the first offshore wind turbine to be deployed off the coast of the United States/Maine and the first concrete floating wind turbine in the world.

#### Pisgah Mountain Wind | Pisgah Mountain, LLC

Clifton, ME | \$ \*

Cianbro was the EPC contractor for the Pisgah Mountain Wind Energy project. The engineering, procurement, and construction scope of work consisted of the site development, including access roads and turbine sites, coordination of the transportation of the turbines from the port to the site, erection of five 1.8 MW Vestas V90 wind turbines, underground collection, overhead collection, and a complete collection substation.

#### The Central Loop | Central Maine Power Company

Various, ME | \$ \*

Cianbro and Irby Construction constructed/upgraded 230 miles of transmission line as part of the Maine Power Reliability Program (MPRP). The upgrade included 345 kV, 115 kV, and 34.5 kV conductor and static lines with thousands of wood h-frame poles, steel mono-poles, steel three-pole angle structures and lattice structures.

\* Withheld Upon Owner Request



## Cory W. Verrill

*Project Engineer*

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### CONTINUED EXPERIENCE

#### **Missisquoi Bay Bridge | Vermont Agency of Transportation**

Alburg, VT | \$ 30.3 Million

Cianbro constructed a new 3,400-footlong bridge with a concrete deck placed over steel plate girders. Each span is 156 feet long and the roadway approaches include two, 330 foot long causeway approaches.

#### **Fish Lift – Lockwood Dam | \***

Waterville, ME | \$ \*

Cianbro installed an elevator-operated fish lift, tank, and platform located adjacent to the Unit #7 hydroelectric power house.

#### **Fish Lift – Benton Dam | \***

Benton, ME | \$ \*

Cianbro installed an elevator-operated fish lift located approximately 80 feet downstream of the dam, which is used to relocate fish upstream.

#### **Fish Lift – Burnham Dam | \***

Burnham, ME | \$ \*

Cianbro installed an elevator-operated fish lift located directly on the downstream side of the dam. The fish lift relocates fish upstream by raising the fish approximately 20 feet in the hopper and then into the flume where they are able to be released above the dam.

#### **Fresh Water Cooling Intake | Milford Power**

Milford, CT | \$ \*

Cianbro laid out the piping for a freshwater cooling intake at the Milford Power Plant.

\* Withheld Upon Owner Request



EXPERIENCE SUMMARY

Mr. Cassida has worked for his entire career as a director and/or project manager specializing in regulatory permitting and compliance. He has extensive management experience within the power delivery and renewables industry and a documented record of guiding projects through design and development, permitting, construction and operation. He has worked on transmission, wind, and solar energy projects throughout the U.S. and Canada with a strong concentration in the Northeast and Mideast regions. Within the challenging regulatory permitting environment, Mr. Cassida has taken on various program roles working as a regulator, environmental consultant and developer. As the Director of the Maine Department of Environmental Protection (Maine DEP), Division of Land Resource Regulation, he managed a staff of 37 licensing, enforcement, and planning professionals in 4 regional offices and was responsible for the implementation of a 3.7 million-dollar annual budget. He directly managed the administration of Maine's Wind Energy Act and established the Maine In-Lieu-Fee wetland mitigation program in cooperation with the U.S. Army Corps of Engineers. Mr. Cassida was the Senior Manager of Environmental Affairs for First Wind, LLC/SunEdison, Inc./TerraForm Power, Inc. for 4 years and managed a portfolio that included hundreds of wind, solar, and transmission projects at all stages of development, construction, and operation. He has a proven record of collaboration with project engineers, consultants and regulators developing design plans that meet or exceed project goals and expectations. His experience includes organizing and conducting scoping meetings; evaluating environmental impacts; Federal, State and Local permitting; and construction compliance monitoring. He is skilled at applying strategic communication techniques to encourage productive dialogue between stakeholders and to facilitate informed decision making.

RELEVANT EXPERIENCE

**Program Compliance Manager, 2019**  
**Central Maine Power, North American Electric Reliability Corporation Compliance Project, ME**

Project Compliance Manager responsible for managing the construction compliance for the North American Electric Reliability Corporation (NERC) Compliance Project throughout the Central Maine Power (CMP) service area. The NERC Compliance Program identified locations within the existing CMP transmission corridors that did not conform to NERC safety standards and required system upgrades. System upgrades included the replacement of poles and conductors at 55 locations and required construction compliance monitoring to ensure that the general contractors followed the construction stormwater pollution prevention plan (SWPPP). Conducted weekly tailgates to review erosion & sediment control requirements and periodic site inspections to review project status and compliance.

**Project Compliance Manager, 2015–2016**  
**First Wind /SunEdison, Rock Springs Wind Project, TX**

Project Compliance Manager responsible for managing the construction and permit compliance for the 149.7 MW wind project in Del Rio, TX. Worked cooperatively with Mortenson's Wind Energy Group to temporarily close the construction down during the transition in ownership from SunEdison, Inc. to Akuo Energy.

**Project Developer, 2014–2016**  
**First Wind /SunEdison, Massachusetts Solar Project, MA**

Project Developer responsible for managing the construction and permit compliance for the 17 MW DC solar project in Warren, MA. Spread across three sites, the MA Solar Project is the second largest solar facility in Massachusetts. The project is comprised of more than 57,000 72-cell, 300-watt solar panels. This

EDUCATION

MS, Public Administration,  
University of Southern Maine,  
2009

BS, Botany & Marine Resources,  
University of Maine, 1986

AREAS OF EXPERTISE

- Federal, State & Local Permitting
- Erosion & Sediment Control
- Regulatory Compliance Management
- Stormwater Management
- Project Management
- Wetland Delineation
- Mitigation Planning

TRAINING/CERTIFICATIONS

Trainer - Basic & Advanced  
Erosion & Sediment Control  
Practices, Maine Nonpoint  
Source Training Center, August,  
ME, 1995-2007

CPR and First Aid, 2018

OSHA HAZWOPER Certification,  
2012

ORGANIZATIONS

Northern New England Chapter of  
the American Planning  
Association

National Association of  
Environmental Professionals

International Erosion Control  
Association

Maine Association of Wetland  
Scientists

Society of Wetland Scientists

The Wildlife Society, New England  
Chapter

YEARS OF EXPERIENCE

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energy powers the University of Massachusetts and contributes to the state's goal of installing 1,600 MW by 2020. The projects will collectively produce more than 20,000 MWh per year.

**Program/Project Manager, 2009–2010**

**Fox Island Wind Project, ME**

Supervised the project management team at Maine DEP responsible for the review of the Fox Island Wind Project. The Fox Island Wind Project is a 1.5 MW community wind energy facility on the island of Vinalhaven, Maine in Penobscot Bay which provides energy for the communities of Vinalhaven and North Haven, Maine.

**Program/Project Manager, 2011**

**Section 241 Re-design, ME**

Supervised the project management team at Maine DEP responsible for the review of the expansion of the 39-mile, Section 241, 115kV transmission line. This transmission line expansion project resulted in a 75 foot wide expansion of an existing right-of way and involved the permanent loss of 1,379 square feet of freshwater wetland, 2.06 acres of temporary wetland impact, 64.2 acres of conversion from forested wetland to scrub shrub wetland and impacts to the critical terrestrial habitat of one Significant Vernal Pool along the corridor expansion. The project was located in the Towns of Moscow, Bingham, Solon, Brighton Plantation, Athens, Cornville, Skowhegan, Clinton, and Benton.

**Program/Project Manager, 2011**

**Downeast Reliability Project, ME**

Supervised the project management team at the Maine DEP responsible for the review of the permit application for the Downeast Reliability Project. The Downeast Reliability Project involved utility line upgrades to approximately 43 miles of 115 kilovolt (kV) electric transmission line. The transmission line upgrades located in the City of Ellsworth and the towns and townships of Fletchers Landing Township, Franklin, Sullivan, Township T7 SD, Steuben, Cherryfield, Milbridge, Harrington, and Columbia, Maine.

**Program/Project Manager, 2010–2011**

**Maine Power Reliability Project (MPRP), ME**

Supervised the project management team at Maine DEP responsible for the review of the permit application for the Maine MPRP. The MPRP included the construction of five new 345kV substations, one new 115kV substation, and related facilities linked by approximately 440 miles of new transmission lines.

**Project Compliance Manager, 2014–2015**

**First Wind/SunEdison, Inc., Oakfield Wind Project, ME**

Project Compliance Manager responsible for managing the construction and permit compliance for the 148 MW wind project in Oakfield, ME. Managed a compliance team that conducted daily inspections of the construction site throughout the construction process to ensure compliance with all SWPPP requirements and permit standards. Worked cooperatively with the Maine DEP third-party inspector (3PI) to inspect the project site on a weekly basis.

**Project Compliance Manager, 2014–2016**

**First Wind/SunEdison, Inc., Bingham Wind Project, ME**

Project Compliance Manager responsible for managing the construction and permit compliance for the 185 MW wind project in Bingham, ME. Managed a compliance team that conducted daily inspections of the construction site throughout the construction process to ensure compliance with all SWPPP requirements and permit standards. Worked cooperatively with the Maine DEP 3PI to inspect the project site on a weekly basis.

**Project Manager, 2014–2016**

**First Wind/SunEdison, Inc., Hancock Wind Project, ME**

Project Compliance Manager responsible for managing the construction and permit compliance for the 51 MW wind project in Eastbrook, ME. Managed a compliance team that conducted daily inspections of the construction site throughout the construction process to ensure compliance with all SWPPP requirements and permit standards. Worked cooperatively with the Maine DEP 3PI to inspect the project site on a weekly basis.

**Project Compliance Manager, 1998–1999**

**Maritimes & Northeast Pipeline Project, ME**

Maine DEP Compliance Manager responsible for overseeing the construction of the Maritime & Northeast Pipeline segment between the Kennebec River & the Penobscot River. Conducted daily compliance of the construction site throughout the construction process to ensure compliance with all SWPPP requirements and permit standards. Worked cooperatively with the Maine DEP 3PI to inspect the project site on a weekly basis.

**Project Compliance Manager, 1997–1998**

**Portland Natural Gas Transmission System (PNGTS) Pipeline Project, ME**

Maine DEP Compliance Manager responsible for overseeing the construction of the PNGTS Pipeline between Portland and the New Hampshire border. Conducted daily compliance of the construction site throughout the construction process to ensure compliance with all SWPPP requirements and permit standards. Worked cooperatively with the Maine DEP 3PI to inspect the project site on a weekly basis.

## EXPERIENCE SUMMARY

Mr. Lin has 15 years of experience as a biologist and environmental scientist providing natural resource assessments and environmental permitting support for local, state, federal, and commercial clients. His extensive and varied skill set includes identifying and mapping plant and wildlife species, erosion and sedimentation control inspections, coordinating with clients and regulatory agencies, electronic data collection, safely operating off-road vehicles, field photography, and preparing and editing technical reports. Prior to Tetra Tech, Mr. Lin worked for the U.S. Fish and Wildlife Service as a natural resource planner, wildlife biologist, and outreach specialist (2005–2014). He currently serves as the Program Chair for the Maine Chapter of the Wildlife Society and previously served as Chapter President (2015) and Board Member (2014–2019).

## EMPLOYMENT HISTORY

Tetra Tech, Inc.; Portland, ME; Wildlife Biologist and Environmental Scientist, 2015–Present

U.S. Fish and Wildlife Service, Gulf of Maine Coastal Program; Falmouth, ME; Wildlife Biologist, 2009–2014

U.S. Fish and Wildlife Service, Northeast Regional Office; Hadley, MA; Assistant Planner; 2005–2009

## RELEVANT PROPOSAL AREA EXPERIENCE

**Patriot Renewables, Saddleback Ridge Wind, Natural Resource Surveys and Post-construction Fatality Monitoring, Maine.** 2016–Present. Deputy project manager, task lead, or field biologist for natural resource surveys for an existing 12-turbine wind energy project and proposed four-turbine expansion. Surveys conformed to industry standards and followed all permit conditions and regulatory requirements. Surveys included post-construction fatality monitoring, bald eagles, raptors, rare natural communities, rare plants, and northern bog lemming. As deputy project manager, implemented 2 years of post-construction fatality monitoring by developing training materials, leading field training, purchasing equipment and supplies, overseeing daily fatality searches and carcass persistence trials, conducting searcher efficiency trials, ensuring data quality, and general troubleshooting. Prepared or reviewed all technical reports and submitted them to the client and appropriate agencies.

**Patriot Renewables, Canton Mountain Wind, Natural Resource Surveys and Post-construction Fatality Monitoring, Maine.** 2016–Present. Deputy project manager, task lead, or field biologist for natural resource surveys for an eight-turbine wind energy project. Surveys conformed to industry standards and followed all permit conditions and regulatory requirements. Pre-construction surveys included a Phase I environmental site assessment, wetland delineation, vernal pools, and re-flagging natural resource boundaries and buffers prior to construction. Post-construction surveys included fatality monitoring, and avian radar. Also installed permanent natural resource signage to ensure operations compliance with stormwater permit conditions. As deputy project manager, implemented 3 years of post-construction fatality monitoring by developing training materials, leading field training, purchasing equipment and supplies, overseeing daily fatality searches and carcass persistence trials, conducting searcher efficiency trials, ensuring data quality, and general troubleshooting. Prepared or reviewed all technical reports and submitted them to the client and appropriate agencies.

## EDUCATION

Environmental Studies- Conservation Biology, Antioch University New England (47 Credits)

B.A., Environmental Studies- Ecosystems Concentration, Binghamton University, 2002

## AREAS OF EXPERTISE

- Post-construction fatality monitoring
- Rare, Threatened, and Endangered Plant and Wildlife Species Surveys
- Wetland Delineations
- Invasive Plant Surveys
- Erosion and Sedimentation Control Compliance Surveys
- GPS/Electronic Data Collection
- ESA Section 7 Consultation

## PROFESSIONAL AFFILIATIONS

The Wildlife Society

## OFFICE LOCATION

Portland, ME

## YEARS OF EXPERIENCE

15

## YEARS WITH FIRM

5

**Western Maine Renewables, Western Maine Renewable Energy Project, Natural Resource Assessments, Maine.** 2020–Present. Deputy project manager, task lead, and field biologist for natural resource surveys for a potential wind energy project. Pre-construction surveys included wetland delineation/verification, vernal pools, rare natural communities, rare plants, invasive plants, bat acoustics, bat winter habitat, bald and golden eagles, raptors, Canada lynx, Roaring Brook mayfly, northern bog lemming, and northern spring salamander. Incidental observations of insect pollinators were also documented for inclusion in a wildlife habitat management plan. Reports or technical memoranda were written for all surveys and are being incorporated into the permit application for the project.

**Massachusetts Department of Transportation, Natural Resource Assessments, Statewide.** 2015–Present. Conducted vernal pool surveys. Deployed Wildlife Acoustics SM-3 and SM-4 bat acoustic detectors and conducted desktop and field-based bat habitat assessments at each deployment site according to U.S. Fish and Wildlife Service guidelines. Work included assessing potential for bats to access freshwater rivers, lakes, and streams for foraging, gleaning, and migratory corridors. Researched and coordinated the installation of a solar-powered, cloud-based, raptor nest monitoring camera. The camera was initially used to monitor and document construction-related disturbance to an eagle nest near a rail-trail renovation project. The system was relocated to monitor a Peregrine falcon nest box and support chick banding efforts lead by the Massachusetts Natural Heritage and Endangered Species Program. Provided periodic updates on the camera system and nest activity, technical support and troubleshooting, interpretation of nest activity, and summarized findings in reports.

**Federal Energy Regulatory Commission; Post-Certification Compliance Inspection Task; Nationwide.** 2017–Present. Perform field inspections for natural gas pipeline ROWs, compressor stations, and associated facilities for compliance with FERC's Wetland and Waterbody Construction and Mitigation Procedures; Upland Erosion Control, Revegetation, and Maintenance Plan; FERC authorizations, and project-specific requirements. For each inspection, a formal and publicly available report and photo log provide observations and recommendations directly to FERC project managers. A total of 146 inspections have been completed across the country. Successfully completed FERC's 3-day environmental review and compliance training for natural gas facilities in 2017.

**NextEra, Confidential Renewable Energy Projects, Natural Resource Assessments; Clinton, Fairfield, and Benton, Maine.** 2018–2020. Field biologist for natural resource surveys for three potential solar energy projects and associated connector lines. Surveys included wetland delineation, vernal pool documentation, natural community identification, rare plant verification/mapping, and bat acoustic detection. Summarized results of the rare plant and natural community survey in a technical memorandum.

**NextEra; Confidential Renewable Energy Project; Saugus, Massachusetts and Seabrook, New Hampshire.** 2019. Delineated wetlands in advance of U.S. Army Corps of Engineers Section 404 and Massachusetts Environmental Policy Act permit requirements for a potential energy transmission corridor. Survey conformed to industry standards and followed all regulatory requirements.

**Confidential Renewable Energy Client; Confidential Renewable Energy Project; Rare, Threatened, and Endangered Species and Wetland Site Reconnaissance; East Greenwich, Rhode Island.** 2019. Provided a preliminary field assessment for wetlands and rare, threatened, and endangered species on a forested parcel in Rhode Island in advance of a potential solar development. Surveys conformed to industry standards and followed all regulatory requirements.

**NextEra; Confidential Renewable Energy Project; Winchendon, Massachusetts.** 2018. Surveyed vernal pools for key indicators including egg masses, amphibians and reptiles, and invertebrates to gather baseline data in advance of permitting for a potential solar power development.

**U.S. Navy, Natural Resource Assessments, Maine.** 2014–2018. Performed a variety of natural resource services at three installations in Maine including erosion assessment, wetland delineation, vernal pool surveys, invasive plant species mapping and assessment, bat habitat assessment, bird and bat fatality monitoring, rare natural community mapping, and the development of a wild edible plant guide.

**Maine Department of Transportation, Natural Resource Assessments, Maine.** 2016–2017. Completed bridge, roost tree, desktop, and field-based habitat assessments; deployed Wildlife Acoustics SM-3 bat acoustic detectors; and completed associated technical memoranda for the northern long-eared bat at multiple road and bridge improvement sites throughout Maine. Work was completed following guidelines from U.S. Fish and Wildlife Service, Federal Highway Administration, and Federal Railroad Administration. Assessed culverts and wetland boundaries along a major interstate highway.

## EXPERIENCE SUMMARY

Ms. Waddle is an environmental scientist with over 6 years of experience in environmental consulting in Maine and the Northeast. Since joining Tetra Tech in August 2020, Kelly has been assisting with project planning tasks for multiple commercial-scale solar development projects located in Maine, Connecticut and New York. Project planning tasks have included assisting with permitting, survey planning, and financial/administrative compliance. Prior to her employment at Tetra Tech, Kelly served as project scientist, data manager, and scheduling coordinator at Stantec Consulting for 6 years. She has experience conducting diverse wildlife surveys and natural resource assessments to assist with the preparation of local, state, and federal permit applications. Her field work has primarily focused on avian and bat studies, including visual raptor surveys, nocturnal radar migration surveys, acoustic bat monitoring, bald eagle activity surveys, shorebird surveys, grassland bird surveys, and post-construction fatality monitoring. Kelly also has worked on projects involving sediment sampling, lobster mitigation, Canada lynx (*Lynx canadensis*) presence/absence surveys, rare and invasive plant surveys, marine taxonomic statistical analysis, and wetland delineations. Ms. Waddle has strong technical writing and data management skills. She also is proficient in conducting data analysis for a variety of avian and bat surveys, including analysis of acoustic data using Kaleidoscope and BCID software.

## EMPLOYMENT HISTORY

Tetra Tech, Inc., Environmental Scientist and Planner, 2020–present

Stantec Consulting, Project Scientist, 2014–2020

## RELEVANT PROPOSAL AREA EXPERIENCE

**Confidential Clients, Wind and Solar Projects, ME, CT, and NY.** 2020–present. Environmental scientist and planner for multiple commercial-scale wind development and solar development projects located in Maine, Connecticut, and New York. Responsibilities include assisting with project planning tasks, permitting, survey planning, and financial/administrative compliance.

**Confidential Clients, Solar Projects, ME and NY.** 2019–2020. Project scientist and data manager for multiple commercial-scale solar development projects located in Maine and New York. Responsibilities included preparing safety forms, survey planning, and scheduling. Kelly also conducted wintering bird surveys at one of the proposed solar project sites in New York.

**Confidential Clients, Proposed Wind Projects, ME.** 2015–2020. Project scientist and data manager for multiple proposed wind development projects located in Maine. Conducted pre-construction wildlife surveys including visual raptor surveys, eagle point counts, nocturnal radar migration surveys, acoustic bat monitoring, grassland bird surveys, and meteorological (met) tower monitoring. Responsible for data collection, data analysis, and report writing.

## EDUCATION

B.A. Environmental Studies,  
Saint Michael's College,  
Colchester, VT 2014

## AREAS OF EXPERTISE

- Avian and Bat Studies
- Biological Field Studies
- Data Management
- Federal, State, and Local Permitting
- Technical Writing and Reviews

## TRAININGS AND CERTIFICATIONS

- Tetra Tech Project Management Training, Level 1, Certificate of Completion 2021
- First Aid CPR AED Certified, AHA Training Center, 2018
- Offshore Personal Survival Techniques Training Certified, Maine Maritime Academy, 2017
- Secretary/Treasurer, Maine Chapter of the Wildlife Society, 2019–present
- Member, The Wildlife Society, Maine Chapter and National, 2016–present

## OFFICE LOCATION

Portland, Maine

## YEARS OF EXPERIENCE

6

## YEARS WITH FIRM

7 months

**Confidential Clients, Proposed Wind Projects, NY and WV.** 2018–2020. Project Scientist for multiple proposed wind development projects located in New York and West Virginia. Responsibilities involved assisting in writing site characterization reports for one New York and one West Virginia project, managing incoming data for acoustic bat detector surveys and eagle point count surveys, and scheduling for all field efforts. Kelly also served as task manager for one proposed wind project in New York; assisting with all financial needs and report writing. She served as field lead for another New York project during this time, conducting pre-construction surveys for eagles including monthly nest monitoring and eagle point counts.

**Confidential Client, Proposed Wind Project, CA.** 2018–2019. Data manager for a proposed wind development project located in northern California. Responsibilities involved managing incoming data for acoustic bat detector surveys and nocturnal radar surveys, assisting in report tracking and writing, and scheduling for all field efforts. Kelly also led the analysis effort for nocturnal radar data which targeted federally threatened and state endangered marbled murrelet (*Brachyramphus marmoratus*) for reporting purposes related to impact assessment and permitting efforts.

**Jericho Power LLC, Jericho Wind Project, NH.** 2018–2020. Task manager and project scientist for a post-construction monitoring project in New Hampshire. Conducted monthly searches at 5 turbines for avian and bat fatalities. Responsible for all data collection/entry, searcher efficiency trials, and report writing.

**Novatus Energy, Oakfield Wind Project, ME.** 2020. Task manager and project scientist for a post-construction monitoring project in Oakfield, Maine. Responsibilities included training project technicians on survey protocols and safety forms, data collection for all avian and bat fatalities, and conducting searcher efficiency and carcass persistence trials.

**Deepwater Wind Block Island Wind Farm, RI.** 2017–2020. Project scientist responsible for monthly ship-based transect surveys to sample bird use and behavior for Deepwater Wind's Block Island Wind Farm in Rhode Island. Recorded data alongside a primary observer using a global positioning system and an iPad during surveys. Also assisted with radar surveys, data collection, and report writing.

**Confidential Client, Proposed Transmission Line Project, ME.** 2017. Deployed acoustic bat detectors for northern long-eared bat (*Myotis septentrionalis*) presence/absence surveys along 30 miles of a proposed interconnect transmission line.

**Maine Department of Transportation, State-wide Bat Survey, ME.** 2016–2017. Assisted in developing a Maine Geographic Information System occurrence data layer identifying all historical and known sites where bat roosts had been identified. Responsibilities involved compiling Maine bat data into a database and outreach to other sources for data requests/collection.

**Record Hill Wind LLC, Record Hill Wind Farm, ME.** 2016. Project Scientist for a post-construction monitoring project in Roxbury, Maine. Conducted post-construction raptor surveys to determine species, locations, and behavior in relation to proposed wind turbines. Analyzed data for reporting purposes related to impact assessment and permitting efforts.

**AES Laurel Mountain LLC, Laurel Mountain Wind Farm Project, Elkins, WV.** 2015–2016. Project Scientist for years 4 and 5 of a post-construction monitoring project. Conducted searches at four to eight turbines daily for avian and bat fatalities. Responsible for species identification, ground condition surveys, scavenger surveys, and all data collection/entry.



## SARAH HAUGH

Archaeologist/Project Manager

### EXPERIENCE SUMMARY

Ms. Haugh is an archaeologist with over 20 years of professional experience in cultural resource management working with clients, private landowners, public agencies, and nonprofit organizations successfully guiding them through the Section 106 consultation process. Ms. Haugh has extensive experience performing Phase I through III archaeological investigations, managing teams and projects. Her diverse project experience ranges from small, local development projects to large scale, multi-year wind, solar and utility transmission projects throughout the United States, with an emphasis in the northeast. She has a wide breadth of permitting experience with various agencies such as the U.S. Army Corps of Engineers, the Bureau of Offshore Energy Management, the Federal Energy Regulatory Commission, the National Park Service, and various federal, state, and local level agencies and groups. Her work often supports the National Environmental Policy Act and she has extensive familiarity with preparing a range of environmental/cultural compliance and agreement documents including Environmental Impact Statements, Environmental Assessments, Integrated Cultural Resources Management Plans, Historic Properties Management Plans, and Unanticipated Discoveries Plans, Memorandums of Agreement, or Programmatic Agreements.

### SELECTED RELEVANT EXPERIENCE

**Cultural Resources Coordination/Archaeologist, Dominion, Coastal Virginia Offshore Wind Commercial Project, Virginia. 2020-Present.** Cultural resources coordinator and terrestrial archaeologist for an offshore wind farm planned in federal waters off the coast of Virginia. Responsibilities have included authoring various cultural resources report sections (Site Assessment Plan, Construction and Operation Survey Plan), review of cultural survey reports, providing sensitivity assessments of onshore cable routing, subconsultant coordination (marine archaeology and historic properties), BOEM, VA and NC SHPO consultation and tribal engagement.

**Cultural Resources Coordination/Archaeologist, Orsted, Bay State Wind Offshore Wind Project, Massachusetts. 2016-Present.** Cultural resources coordinator and terrestrial archaeologist for an offshore wind farm planned in federal waters off the southern coast of Massachusetts. Responsibilities have included authoring various cultural resources report sections (Construction and Operation Survey Plan, Site Assessment Plan, Preliminary Environmental Information Report), review of cultural survey reports, providing sensitivity assessments of onshore cable routing, subconsultant coordination, and Massachusetts Historical Commission,

### EDUCATION

M.A., American & New England Studies, University of Southern Maine, in progress

B.A., Geography-Anthropology, University of Southern Maine, 2003

### AREA OF EXPERTISE

Section 106

Cultural Resources Assessments

Phase I-III Archaeological Survey

### REGISTRATIONS/AFFILIATIONS

Maine Archaeological Society, Board Member

### TRAINING/CERTIFICATIONS

Section 106 Advanced Seminar, Advisory Council on Historic Preservation, 2012

Section 106 Essentials Training Course, Advisory Council on Historic Preservation, 2008

### OFFICE

Portland, ME

### YEARS OF EXPERIENCE

20

### YEARS WITH TETRA TECH

13



Rhode Island Historical Preservation & Heritage Commission and tribal consultation.

**Cultural Resources Coordination/Archaeologist, Hinckley Solar Project, Fairfield, Maine. 2017-Present.** Cultural resources coordinator and archaeological for a proposed solar farm, interconnection route and substation. Responsibilities have included consultation, providing preliminary desktop route assessments, and subcontractor management.

**Archaeologist, Confidential Client, Solar Portfolio, Rhode Island. 2018-2019.** Archaeologist for a series of solar development projects in Rhode Island ranging from 70 to 140-acres. Responsible for coordinating with local preservation groups, assisting in feasibility assessments, performing cultural background research, and providing recommendations for approaching potential future cultural resources studies.

**Project Manager/Archaeologist, Equitrans Expansion Project (EEP), Pennsylvania and West Virginia. 2015-2016.** Project Manager/Archaeologist providing preliminary field sensitivity assessments and supporting the field archaeologist during survey of approximately 8.0 miles of various diameter pipelines in Allegheny, Greene and Washington Counties, Pennsylvania; a new compressor station site in Franklin Township, Greene County, PA; demolition of the existing Pratt Compressor Station in Franklin Township, Greene County, PA; and the installation of a new interconnect in the Grant District, Wetzel County, WV. Additionally, co-authored FERC Resource Report 4, Cultural Resources.

**Project Archaeologist, Fire Island Lighthouse Preservation Society, First Order Fresnel Lens Building Project, Fire Island Light Station, Fire Island National Seashore, New York. 2010.** Project Archaeologist for a Phase II cultural resource survey in support of the relocation of the Fire Island Light Station Boathouse for the Fire Island Lighthouse Preservation Society and the National Park Service. Responsibilities included survey, excavation, GPS data collection, download, figure production, ANCS+ database management, artifact curation, and report production.

**Environmental Inspector, Vermont Public Service Board, Environmental and Archaeological Inspections for the Vermont Electric Power Company, Inc. 115 kV Northwest Vermont Reliability Project, Vermont, 2008–2009.** Performed environmental and archaeological inspections for the Vermont Public Service Board on a 27-mile transmission line project. Conducted weekly inspections for approximately one year, including sites containing rare and threatened species, unique natural areas, and archaeological resources; recommended improvements to erosion controls; and worked with company environmental inspectors to maintain Project compliance.

**Section 106 Specialist, US Army Corps of Engineers, New York District, Environmental Assessment and Phase I Cultural Resource Assessment for the Admiral's Row section of the former Brooklyn Navy Yard, New York. 2008-2009.** Section 106 Specialist assisting the US Army Corps of Engineers, New York District (District), and the National Guard Bureau (NGB) comply with Federal regulations and requirements associated with transferring and developing the existing Admiral's Row section of the former Brooklyn Navy Yard, located in the Greenpoint section of Brooklyn, King's County, New York. The work included complying with the National Environmental Policy Act (NEPA), taking into account the potential environmental effects of any proposed action on the property, in accordance with the NGB NEPA Handbook. Specific tasks associated with the project included preparing an Environmental Assessment; conducting a Phase IA Cultural Resource investigation and preparing a Documentary Report; conducting an Alternatives Analysis to evaluate the range of development alternatives for the 7-acre property; and, assisting the NGB with meetings related to the Section 106 of the National Historic Preservation Act, including assisting in preparations for two public meetings and developing a website for the project.

**Project Archaeologist, US Department of the Interior, National Park Service, Governor's Island National Monument ARPA Damage Assessment, Governors Island, New York Harbor, New York. 2007–2008.** Project Archaeologist for an Archaeological Resource Protection Act (ARPA) Damage Assessment of portions of the Governors Island National Monument for the US Department of the Interior, National Park Service, Governors Island National Monument. Responsibilities included: survey, hand and mechanical trench excavation, GPS data collection, download, figure production, ANCS+ database management, artifact curation, and report production.

## EXPERIENCE SUMMARY

Mr. Hengstenberg is a Certified Wildlife Biologist with 21 years of experience in wildlife biology, wind energy ecology, aero-ecology studies, tropical field studies, and project management. Mr. Hengstenberg has extensive knowledge of wildlife studies and is well versed in scientific techniques and equipment including bat acoustic surveys, raptor migration studies, breeding bird surveys, avian radar ornithology, threatened & endangered species surveys, seabird & shorebird surveys, grassland bird surveys, tropical flora and fauna, and mist-netting of birds and bats. Mr. Hengstenberg has worked on natural resources projects across the country and throughout Latin America, conducting wildlife surveys on over 50 wind energy projects, including both onshore and offshore wind energy projects. Mr. Hengstenberg has extensive range of field experience throughout New England, the Mid-Atlantic, the Northwest, the Southwest, Puerto Rico, and Mexico. Mr. Hengstenberg is also experienced with endangered species and has worked closely with both state and federal agencies during the permitting process of wind energy and natural resource projects.

## RELEVANT EXPERIENCE

**Massachusetts Department of Transportation, Multiple Road and Bridge Improvement Projects, MA (2015–Present).** Worked with MADOT lead biologist on designing a programmatic work plan to evaluate bridge and road projects for NLEB (*Myotis septentrionalis*). Provided support to over 100 presence/absence NLEB surveys at a variety of linear DOT projects in Massachusetts.

**Massachusetts Department of Transportation, Eagle Nest Monitoring, West Springfield, MA. (2017–Present).** Monitored an eagle nest remotely for disturbance from a nearby construction project to satisfy permit conditions with Massachusetts Natural Heritage and Endangered Species Program.

**Massachusetts Army National Guard, Northern Long-Eared Bat Planning Level Surveys/Acoustic Analysis- Camp Curtis Guild and Camp Edwards, MA (2015–Present).** Managing and providing support for a variety of natural resource services including acoustic analysis of large data sets as well as and planning level surveys for the northern long-eared bat (*Myotis septentrionalis*) at Camp Curtis Guild and Camp Edwards, Massachusetts. Field surveys include mist netting surveys, emergence surveys, and radio telemetry in accordance with federal protocols established by the United States Fish and Wildlife Service. Worked with team to facilitate the analysis of bat acoustic data as well as a bat database.

**Orsted, Bay State Wind Offshore Wind Farm, Construction and Operations Plan (COP), MA (2018–Present).** Project biologist responsible for completion of natural resource survey support including boat-based avian surveys and writing technical sections of permit documents.

**Equinor (Statoil), Empire Wind Offshore Energy Project, Permitting and Natural Resource Surveys, NY (2018–Present).** Project biologist responsible for completion of natural resource survey support including offshore bat acoustic surveys, review of aerial digital imagery surveys, and writing technical sections of permit documents.

**Dominion Resources, Dominion Commercial Offshore Wind Project, Construction and Operations Plan (COP) (2019–Present).** Project biologist responsible for completion of natural resource survey support including bat acoustic surveys, review of aerial digital imagery surveys, and writing technical sections of permit documents.

**U.S. Department of the Navy, Naval Facilities Engineering Command, Mid-Atlantic, Northern Long-Eared Bat Surveys, New Jersey and Virginia (2014–Present).** Managing and providing field support for completion of presence/absence surveys for northern long-eared bat (*Myotis septentrionalis*) at multiple naval installations in New Jersey and Virginia. Field surveys include bat acoustic and mist netting surveys in accordance with federal protocols established by the United States Fish and Wildlife Service (USFWS) and detailed in USFWS' 2015 Northern Long-

## EDUCATION

MS, Wildlife & Fisheries Science, Mississippi State University, 2003

BS, Interdisciplinary Studies/Wilderness Research Administration, Plymouth State University, 1998

## AREAS OF EXPERTISE

Wildlife Survey and Design

Field Biology

Rare, threatened, and endangered species

Project Management

## TRAINING/CERTIFICATIONS

Certified Wildlife Biologist, TWS, AL, Earned; 2011

Personal Survival Techniques (MAMAMT-363); 2017

Airport Wildlife Hazard Management Workshop; 2010

Basic and Advanced Erosion & Sediment Control; 2008

Bat Acoustic and Data Management Workshop; 2015

CPR and First Aid; 2015

OSHA HAZWOPER Certification and Refresher; 2008

Red Card Certification (Wildland Firefighter); 1997

## ORGANIZATIONS

Member, The Wildlife Society

## OFFICE LOCATION

Portland, ME

## YEARS OF EXPERIENCE

21

Eared Bat Interim Conference and Planning Guidance and USFWS' 2015 Range-Wide Indiana Bat Summer Survey Guidelines. Information collected will be used by natural resources managers to make informed decisions at the eight Installations where these surveys are being conducted to avoid negative impacts to this vulnerable species from naval activities. Tetra Tech has teamed with Biodiversity Research Institute to complete the field work and data analysis.

**Patriot Renewables, Saddleback Ridge Wind Project, ME (2009–Present).** Managed and conducted pre-construction and post-construction natural resource surveys including a spring and fall avian radar survey, eagle use surveys, bat acoustic survey, raptor migration survey, migrant stopover survey, RTE species survey, and breeding bird survey as part of the permitting process. Developed and negotiated pre- and post-construction monitoring plans, bird and bat conservation strategy plans with state and federal agencies, authored proposals, designed field studies, and prepared reports and memos.

**Maine Department of Transportation, Multiple Road and Bridge Improvement Projects, ME (2015).** Wildlife biologist supporting multiple presence/absence surveys for NLEB (*Myotis septentrionalis*) at a variety of linear DOT projects in Maine. Supported full spectrum bat detector deployment, habitat assessment, analysis of data, and reporting.

**Patriot Renewables, Spruce Mountain Wind Project, ME (2009–2015).** Managed and conducted pre-construction and post-construction survey including a bird and bat mortality surveys, avian radar survey, bat acoustic survey, raptor migration survey, migrant stopover survey, RTE species survey, and breeding bird survey as part of the permitting process. Developed and negotiated pre- and post-construction monitoring plans with state and federal agencies, authored proposals, designed field studies, and prepared reports and memos. Provided the client advice on erosion and sediment control measures at the newly constructed site so that they comply with permit conditions.

**Patriot Renewables, Canton Mountain Wind Project, ME (2010–2012).** Managed and conducted pre-construction avian surveys including a spring and fall avian radar survey, bat acoustic survey, raptor migration survey, eagle aerial survey, migrant stopover survey, RTE species survey, and breeding bird survey as part of the permitting process. Developed and negotiated pre and post-construction monitoring plans with state and federal agencies, authored proposals, designed field studies, and prepared reports and memos.

**Patriot Renewables, Moscow Wind Project, ME (2011–2013).** Managed and conducted pre-construction avian surveys including a spring and fall avian radar survey, bat acoustic survey, raptor migration survey, eagle aerial survey, migrant stopover survey, RTE species survey, upland sandpiper survey, bald eagle survey, and breeding bird survey as part of the permitting process. Developed and negotiated pre-construction monitoring plans with state and federal agencies, authored proposals, designed field studies, and prepared reports and memos.

**Confidential Wind Project, ME (2011).** Managed and conducted a pre-construction fall avian survey in the blueberry barrens of downeast Maine. Surveys were designed to evaluate nocturnal and diurnal migrants' passage rates, flight heights, and flight direction in support of the permitting process for the project.

**U.S. Navy, Naval Computer and Telecommunications Master Station Atlantic Cutler, ME (2012–2014).** Conducted a spring and fall avian radar survey to determine passage rates, flight heights, and flight direction of nocturnal and diurnal migrant biological targets at the project site. Performed a 6-month avian and bat acoustic survey in a variety of coastal and grassland habitats to determine presence/absence of rare, threatened and endangered bird and bats.

**U.S. Navy, Survival, Evasion, Resistance, and Escape School, ME (2013).** Designed and conducted a high elevation bird survey for the rare bird species, breeding birds, raptor migration surveys, avian acoustic, and bat acoustic surveys in a variety of forested and wetland habitats within the SERE school.

**U.S. Navy, U.S Marine Reserve Floyd Bennett Field Wind Project, NY (2009–2010).** Conducted a one year study of seasonal point counts, avian acoustic surveys, bat acoustic surveys, migrant stopover surveys, RTE species surveys, and breeding bird surveys as part of the permitting process for a small scale wind project. Developed and negotiated work plans with state and federal agencies, authored proposals, designed field studies, and prepared reports and memos.

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**BIOGRAPHICAL SKETCH**


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NAME: Brian Robertson, Ph.D.

Role: Primary Investigator

POSITION TITLE: Vice President, Research

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**EDUCATION/TRAINING**


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INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Utah, Salt Lake City, Utah	B.S.	06/1991	Anthropology
University of Utah, Salt Lake City, Utah	Ph.D.	06/1999	Anthropology

**A. Personal Statement**

Over my career, I have mastered an approach to research that is both technically exacting and creative. I am skilled at designing methodologies for complex projects and I design and oversee rigorous research studies that address a range of public policy and environmental issues.

In my current position, I provide overall technical leadership for Market Decisions Research projects, including research and survey design, sampling methodologies, data collection methods and analysis. Since joining Market Decisions in 2000, I have managed some of the most technically complex studies undertaken by the company.

I have more than 30 years of research and evaluation experience including a position at a university-based survey research center as well as positions in the private sector. I have directed thousands of survey projects on health care, consumer, environmental and economic issues. My areas of expertise include overall research and survey design, sampling methodologies, project management, statistical analysis, reporting, and development of policy goals and objectives. I have extensive expertise in complex sampling designs and data collection protocols including dual frame sampling and multi-mode data collection protocols.

**B. Positions and Honors****Positions and Employment**

1984 – 1985 Research Assistant, Veteran’s Administration health Services and Research and Development, Salt Lake City, Utah

1986 – 1990 Data Analyst, University of Utah Survey Research Center, Salt Lake City, Utah

1990 – 1994 Project Manager, University of Utah Survey Research Center, Salt Lake City, Utah

1995 – 1999 Vice President of Research, Valley Research, Salt Lake City, Utah

2000 – 2014 Director of Research, Market Decisions Research, Portland Maine

2014 - Vice President Research, Market Decisions Research, Portland, Maine

## Other Experience and Professional Memberships

1986 - Member American Association for Public Opinion Research  
2000 – 2001 Board Member, New England Chapter, American for Public Opinion Research  
2003 – 2004 President, New England Chapter, American for Public Opinion Research  
2018 – 2019 Councilor at Large, New England Chapter, American for Public Opinion Research

## C. Contributions to Science

### Visual Impact Assessment:

Dr. Robertson developed and co-taught a workshop **Viewer Surveys and Visual Impact Assessment** with Dr. James Palmer at the Visual Resource Stewardship Conference: Seeking 20/20 Vision for Landscape Futures, held October 27 – 30, 2019 at the Argonne National Laboratory in Lemont, IL. Both authors have extensive experience conducting and reviewing viewer surveys for renewable energy projects as part of state agency permitting processes. The goal was to not only demonstrate the value of surveys conducted at potentially effected viewpoints to visual impact assessments but also to provide practical knowledge in the administration of such surveys. This workshop introduced the primary steps in conducting view surveys: planning, questionnaire, and simulation design, training interviewers, conducting the interview, preparing, and analyzing the data, and reporting the results. The instruction involved a mixture of case study presentation, role-plays, and discussion.

Dr. Roberson served on a panel with Terry DeWan, *FASLA* and Dr. James Palmer at the at the Visual Resource Stewardship Conference: Seeking 20/20 Vision for Landscape Futures, held October 27 – 30, 2019 at the Argonne National Laboratory in Lemont, IL. The panel entitled **Taking a Pulse: Visual Impact Assessments as a Tool to Evaluate Continuing Use and Enjoyment of Scenic Resources** explored the continued evolution of Visual Impact Assessments and how they have become an important tool in the VIA process. The presentation also focused on a new approach to assess the visual impact of man-made features that was developed for a study on the impact of transmission lines on recreational users of the Kennebec River in Maine. The panelists discussed how it differs from more traditional Visual Impact Assessments, its advantages, and how it can be applied in a wide range of research to assess scenic value, impact on use and enjoyment. The session wrapped up with an open discussion on the future of Visual Impact Assessments, where they may or may not be appropriate, the use of new tools in their administration, and a host of other issues.

Dr. Robertson collaborated with Dr. James Palmer to assess **the feasibility of an online survey methodology to conduct visual impact assessments and rating scenic quality**. The study investigated the feasibility of adapting the Visual Impact Assessment questions to an online survey methodology. It compared two measurement approaches: a direct rating of visual impact, and an indirect approach based on the difference between ratings of the existing and proposed scenic quality. We concluded that it is feasible to conduct a visual impact assessment online, respondents found little challenge with the methodology, and 82% of respondents agree that that environmental impact assessments for large development projects should include the public's assessment of visual impacts. An abstract for the research was accepted for presentation at the American Association for Public Opinion Annual Conference.



# STEPHEN P. THOMPSON

## LANDSCAPE ARCHITECT

Steve's work experience includes scenic resource and visual impact assessments, downtown master planning, conservation land planning, and site planning for residential and commercial properties. Steve is a lead staff member for photographing and collecting data in the field, and assists in the production of visualizations renderings, construction documents, and ArcGIS mapping.

### SELECTED PROJECT EXPERIENCE

**OCEAN WIND, Offshore Southern New Jersey.** Visual Impact Assessment for a 1,100 MW offshore wind project locate 15-miles off the coast of New Jersey. *Tasks included fieldwork planning and the production of maps and visualizations.*

**NEW ENGLAND CLEAN ENERGY CONNECT,** Visual Impact Assessment of 145 miles of new HVDC Transmission line and associated upgrades, 16 miles of rebuilt 115 kV transmission line, and 26 miles of co-located 345 kV transmission line proposed to deliver electric generation from the Canadian Border through Maine to the New England Grid for Central Maine Power / Avangrid. *Tasks included leading fieldwork, and the production of maps and visualizations.*

**WEAVER WIND, WEAVER WIND, LLC, Eastbrook & Osborn, ME.** Visual Impact Assessment for a 22-turbine, 72.6 MW wind project. *Tasks included leading fieldwork, and the production of maps and visualizations.*

**ROXWIND, ROXWIND LLC, Roxbury, ME.** Visual Impact Assessment for a four turbine wind project south of Record Hill. *Tasks included leading fieldwork, and the production of maps and visualizations.*

**NORTHERN PASS TRANSMISSION PROJECT, NH.** A Visual Impact Assessment for a 192-mile transmission line from Pittsburg NH to Deerfield NH. Work included over 70 photosimulations, viewshed mapping, and extensive written analysis of the transmission line's visual impact on the surrounding landscape. *Tasks included fieldwork, and the production of maps and visualizations.*

**ROUTE ONE CORRIDOR ENHANCEMENTS, Falmouth, ME .** Site plan and construction documents for streetscape improvements to Falmouth's Route One business district. *Tasks included production of planting plans and other construction documents.*

**NUMBER NINE WIND FARM, EDP RENEWABLES, Aroostook County, ME.** Visual Impact Assessment for 129 turbine wind farm and 50 mile generator lead line. *Tasks included fieldwork, and the production of maps and visualizations.*

**FISH RIVER LAKES CONCEPT PLAN IRVING WOODLANDS, Aroostook County, ME.** ArcGIS mapping and graphics for a proposed Concept Plan on 51,000 acres of woodland surrounding the Fish River Chain of Lakes (Long, Mud, Cross and Square Lakes) in northern Aroostook County. Over 40 maps and other various graphics were prepared as part of the application to the Land Use Planning Commission. *Tasks included fieldwork and mapping.*

**ARGONAUT TALC MINE, Ludlow, VT.** A Visual Impact Assessment of the quarry development & expansion. *Tasks included developing 3-D build out scenarios in SketchUp, as well as graphically representing proposed development in visualizations..*

**NATIONAL GRID SOLAR PROJECTS, Massachusetts.** Acted as 'Owner's Landscape Architect' peer reviewer. *Tasks included developing screening plans for installations for four community solar installations.*

### PROFESSIONAL LICENSURE

Maine Licensed Landscape Architect #4773

FAA Licensed Drone Pilot

CLARB Certified

### EDUCATION

BLA University of Rhode Island  
Bachelor of Landscape Architecture  
Summa Cum Laude

### PROFESSIONAL EMPLOYMENT

2013 - present TJD&A (formerly Terrence J. Dewan & Associates)  
Landscape Architects & Planners  
Yarmouth, ME

Summer 2013 Parterre Garden Services  
Fine Gardening  
Cambridge, MA

### AWARDS

2013 American Planning Association  
Award for Outstanding  
Student Project



# TERRENCE J. DEWAN FASLA

## PRINCIPAL

Terry DeWan has over 45 years of professional experience in landscape architecture, visual resource assessment, site planning, design guidelines and community development. His experience includes work with communities, state agencies, private developers, utility companies, and the forest products industry in New England. He has written numerous studies on visual impacts, community planning, recreation planning, water access and highway corridor redevelopment.

## SELECTED PROJECT EXPERIENCE

### Visual Impact Assessments

**OCEAN WIND, Offshore Southern New Jersey.** Visual Impact Assessment for a 1,100 MW offshore wind project located 15-miles off the coast of New Jersey.

**NEW ENGLAND CLEAN ENERGY CONNECT** Visual Impact Assessment of 145 miles of new HVDC Transmission line and associated upgrades, 16 miles of rebuilt 115 kV transmission line, and 26 miles of co-located 345 kV transmission line proposed to deliver electric generation from the Canadian Border through Maine to the New England Control Area for Central Maine Power / Avangrid,

**NEW ENGLAND AQUA VENTUS, Off Monhegan Island, ME.** Visual Impact Assessment (VIA) for a 12 MW floating wind pilot project to produce renewable energy off Maine's shore. The project includes two 6 MW turbines on semi-submersible hulls designed by the University of Maine and partners.

**NORTHERN PASS TRANSMISSION PROJECT, Northern and Central NH.** VIA for a 192-mile transmission line to bring 1,090 MW of energy from Hydro-Quebec to NH and the rest of New England. Eversource.

**BULL HILL AND HANCOCK WIND PROJECTS, Hancock County, ME.** VIA for adjacent wind projects with a total of 37 turbines with a capacity of 89 MW. Blue Sky East LLC

**SPRUCE MOUNTAIN WIND PROJECT, Woodstock, ME.** VIA for a 10-turbine wind project with a capacity of 20 MW. Patriot Renewables.

**SADDLEBACK MOUNTAIN WIND PROJECT, Carthage, ME.** VIA for a 12-turbine wind project with a capacity of 34 MW. Patriot Renewables.

**MAINE POWER RELIABILITY PROGRAM.** VIA for 352 miles of new 115 kV and 345 kV transmission line corridor system upgrades in 82 Maine towns, for Central Maine Power.

**STETSON I & II WIND PROJECT, Washington County, ME.** VIAs for two adjacent projects with a total of 55 turbines with a capacity of 82 MW. Evergreen Wind V, LLC.

**PINNACLE WIND FARM AT NEWPAGE, Keyser, West Virginia.** Visual impact assessment in support of state permitting applications for a 23-turbine wind project with a capacity of 55 MW. US Wind Force / Edison Mission Energy.

**MAINE GOVERNOR'S TASK FORCE ON WIND POWER DEVELOPMENT.** Consultant on aesthetics and visual resources to the Governor's Task Force.

## PROFESSIONAL LICENSURE

Maine Licensed Landscape Architect #6

## EDUCATION

BSLA State University of New York  
Environmental Sciences and Forestry  
Cum Laude

## PROFESSIONAL EMPLOYMENT

- 1988 - present Terrence J DeWan & Associates  
Landscape Architects & Planners  
Yarmouth, ME
- 1977 - 1988 Mitchell-DeWan Associates  
Landscape Architects & Planners  
Portland, ME
- 1976 - 1977 Center for Natural Areas  
South Gardiner, Maine
- 1973 - 1976 Moriece and Gary of Maine  
Portland, ME
- 1971 - 1973 The Architects Workshop  
Philadelphia, PA
- 1970 - 1971 Peter G. Rolland and Associates  
Rye, NY

## PROFESSIONAL AFFILIATIONS

Maine State Board for Licensure of Architects,  
Landscape Architects and Interior Designers

American Society of Landscape Architects

Boston Society of Landscape Architects

American Planning Association

Maine Association of Planners

Council of Landscape Architects Registration  
Boards

Royal River Conservation Trust, Board of  
Directors

## AWARDS AND EXHIBITIONS

Fellow, American Society of Landscape Architects

Council of Landscape Architects Registration Boards. Presidents Awards.

Boston Society of Landscape Architects Excellence Award for Outstanding Professional Practitioner.

Boston Society of Landscape Architects Merit Award for Planning: From the River to the Bay: a Parks, Recreation and Open Space Plan for Brunswick, Maine.

American Society of Landscape Architects Merit Awards for Communications:  
Los Angeles River Greenway.  
Chattahoochee River Greenway, Atlanta GA

Maine Association of Planners  
Scenic Assessment Handbook  
Scenic Inventory of Penobscot Bay  
A Guide to Livable Design  
Portland Shoreway Access Plan

## SELECTED PUBLICATIONS

Design Guidelines, Salem, NH. Adopted by Planning Board March 2010.

Scenic Assessment Handbook. Maine State Planning Office. 2008.

Royal River Corridor Study. Town of Yarmouth, Maine. With Stantec. 2008.

A Vision for the Moosehead Lake Region. Natural Resources Council of Maine. 2006.

Kittery Design Handbook. Kittery Planning Board. 2004

The Great American Neighborhood, A Guide to Livable Design. ME SPO. 2004.

Scenic Inventory, Mainland Sites of Penobscot Bay. Maine State Planning Office. 1990.

Scenic Assessment, Lincolnville, Maine.

**MAINE DEP / VISUAL ASSESSMENT RULES.** Consultant to DEP in the formulation of Chapter 315 Regulations: Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses. Served on DEP Task Force for the development of the rules.

**HUDSON LANDING, Kingston, NY.** A review of the VIA and Development Guidelines for a 1,750-unit community on the Hudson River. Redesign of the site to incorporate sustainable development principles in recognition of its proximity to Scenic Areas of Statewide Significance. Hudson River Heritage.

**ST. LAWRENCE CEMENT, Hudson, NY.** Led a team of visual and cultural specialists to evaluate potential scenic impacts from a proposed cement plant for groups concerned about the future of nearby historic Hudson Valley communities. Project was ultimately rejected by the NY Department of State. Scenic Hudson and Friends of Olana.

**DOWNEAST LNG, Robbinston, ME.** VIA for LNG terminal on the shores of Passamaquoddy Bay. Project would have included an LNG storage tank, an import/export pier, and various shorefront facilities. Downeast LNG, Inc.

**BANGOR HYDRO-ELECTRIC. SECOND 345 KV TIE LINE.** VIA for a new 345 kV transmission line along the Stud Mill Road from Orrington, ME to New Brunswick, Canada.

## Scenic Inventories + Conservation Plans

**FISH RIVER LAKES CONCEPT PLAN, Northern Arrostook County, ME.** A long-range conservation and limited development plan for 50,000 Ac of woodlands in Northern Maine. Irving Woodlands.

**SCENIC INVENTORIES: MAINLAND SITES OF PENOBSCOT BAY, ISLESBORO, VINALHAVEN, NORTH HAVEN, Maine State Planning Office**

**ROUTE 27 SCENIC INVENTORY AND SCENIC BYWAY CORRIDOR MANAGEMENT PLAN.** Long-term plan for Route 27 between Kingfield and Canada. Maine Department of Transportation.

**PRELIMINARY FACILITIES AND INTERPRETIVE MEDIA PLAN, KANCAMAGUS SCENIC BYWAY, White Mountain National Forest, New Hampshire.** Demonstration forest, hiking trails, interpretive exhibits, overlooks, outdoor amphitheater.

## Peer Reviews

**ARGONNE NATIONAL LABORATORY**  
Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands  
National Park Service Visual Impact Assessment Guidance Document.

**CAPE WIND ENERGY PROJECT, Nantucket Sound, MA.** Peer review of DEIS prepared by Minerals Management Service.

## Selected Presentations

**THE MAINE WIND ENERGY ACT IN A TIME OF CHANGE.** Visual Resource Stewardship Conference, Argonne National Laboratory, Lemont IL November 2017

**THE MAINE WIND ENERGY ACT, VISUAL ASSESSMENT PROCEDURES FOR GRID SCALE WIND PROJECTS,** National Association of Environmental Professional Meeting, Portland, OR 2012



# Gordon R. Smith

Counsel

[gsmith@verrill-law.com](mailto:gsmith@verrill-law.com)



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"Gordon Smith comes recommended for his work with renewables clients on development and permitting matters, as well as handling environmental litigation. Clients are impressed with his ability to 'think deeply and not superficially.'"

—*Chambers USA 2017*

Gordon brings together legal experience and a results-oriented, commonsense approach to provide clients with regulatory solutions, court victories, and strategic advice on a range of environmental and land use issues. Gordon fights to achieve sane and beneficial outcomes for his clients, allowing them to do what they want to do on their property. Gordon heads up the firm's Coastal and Shoreland Group and co-chairs the firm's Appellate Practice Group.

His practice includes particular experience in:

- Resolution of land use issues and real estate disputes
- Shoreland and coastal land use issues
- Renewable energy development
- Infrastructure permitting, financing, and operation
- Federal and state wildlife protection statutes
- Civil, administrative, and appellate litigation related to environmental, land use, and real estate disputes in state and federal courts

In the words of one litigation client:

"I worked with Gordon Smith on a landmark case involving property rights. This case was 15 years in the making and quite complex, involving science, history, property law, economics, and very old legal cases. I have worked with other lawyers in the past, and my stomach would be in a knot walking into their office. Working with Gordon, on the other hand, has been a great experience. He is patient, compassionate, incredibly smart (he quickly picks up on information outside his own field), and he is a great listener. He works efficiently, not wasting time or money, but thoroughly. He sees a path to the correct strategy and pursues it with integrity. **If I ever have another legal matter for which I need help, I will run, not walk, to his office and hope he has time to take it on.**"

## Services/Industries

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- Environmental & Land Use
- Energy
- Judicial Appeals—Energy
- Wind
- Real Estate Litigation
- Coastal & Shoreland
- Appellate
- Solar

Gordon also counsels developers on the best ways to navigate the regulatory process in order to get projects built. In particular, Gordon has represented wind and solar power developers in all phases of project development, from land acquisition to obtaining local, state, and federal permits to supporting project finance and successfully defending projects against litigation in state and federal courts.

In the words of one wind power client:

"Gordy has helped us develop multiple grid-scale wind energy projects over the course of almost a decade. I always appreciate Gordy's counsel. Permitting strategy can be tricky, and he has continually guided us in the right direction time and time again. Legal experience aside, Gordy is naturally very intelligent and pragmatic. He often points out nuances that would probably be overlooked by most people, and this talent is especially useful when it comes to strategic planning. In addition, when a project has not been getting the attention it needed, Gordy has jumped in and acted as a de facto project manager. Gordy's great on the ground too—I have seen him calmly diffuse irate opponents at public meetings on multiple occasions. **The bottom line: Gordy has played a crucial role in getting our projects built and operational and has been an essential member of our permitting team for years.**"

Gordon serves as an adjunct professor at the University of Maine School of Law, where he has taught real estate transactions and land use law.

When not practicing law, Gordon likes to do house carpentry, landscape, play tennis, hike, bike, ski, grill, and sip whiskey. Gordon is lucky enough to go home to his wonderful wife, daughter, and son, and the trusty house cat Scout, who is also known as Cuddles.

## Education

- Georgetown University (J.D.)
- University of California, Berkeley (B.A.)

## Public Service

- Volunteer Attorney, Maine Homeless Legal Project
- *Pro Bono* Legal Counsel Provider, The Nature Conservancy

## Bar Admissions

- Maine

## Honors

- Recognized in *Chambers USA: America's Leading Lawyers for Business* under Environment
- Listed in *The Best Lawyers in America*® under Environmental Law, Land Use and Zoning Law, Litigation - Environmental
- Selected by peers for inclusion in *New England Rising Stars*® under Environmental and Land Use/Zoning

To learn more about third-party ratings and rankings, and the selection process used for inclusion, [click here](#).

## Court and Other Admissions

- U.S. District Court for the District of Maine
- U.S. Court of Appeals for the First Circuit



## EXPERIENCE SUMMARY

Mr. Cummings is a civil/environmental engineer with more than 44 years of experience in civil engineering, water resources management and solid and hazardous waste management, including: facilities, residential, industrial and commercial site engineering; hydrology and hydraulic design; land use planning, permit analysis and assistance in obtaining permits; roadway designs; coastal engineering and permitting; stormwater management, conveyance, and disposal system design; water supply planning, distribution, storage and treatment engineering; sewage collection, treatment and disposal systems engineering; hazardous waste management and engineering; solid waste management and engineering; air pollution control systems permitting and design. He has provided design for several large complex projects throughout New England. Recently he has provided oversight for the approximate \$25 million per year facilities construction and operational activities at NASA's Armstrong Flight Research Center, located in Edwards, CA. He has been qualified by the court system and has provided expert witness testimony in the areas of land use, environmental impact, traffic engineering, wastewater disposal and environmental contamination on more than 30 cases. He also holds a patent for producing a lightweight low strength concrete from recycled building materials (US 7,815,729 B2).

## RELEVANT PROJECT EXPERIENCE

### Beaver Ridge Wind

Provided design and construction level services for this project located in Freedom, Maine. The project resulted in the construction of 3 turbines with a total capacity of 4.5 megawatts.

### Spruce Mountain Wind

Provided design, permitting and construction level services for this project located in located in Woodstock, Maine. The project resulted in the construction of 10 turbines and has a total capacity of 20 megawatts.

### Saddleback Ridge Wind

Provided design, permitting and construction level services for this project located in located in Carthage, Maine. The project resulted in construction of 12 turbines and has a total capacity of 34.2 megawatts.

## EDUCATION

MS, Civil Engineering (Water Resources), Northeastern University, 1988

BS, Civil Engineering, University of Massachusetts, Dartmouth, 1976

## AREAS OF EXPERTISE

- Civil/Site Engineering
- Water Resources Management
- Stormwater Management
- Erosion & Sediment Control
- Regulatory Compliance Management
- Federal, State & Local Permitting
- Wetland Mitigation Design
- Project Management

## PROFESSIONAL REGISTRATIONS

Registered Professional Engineer:

- Massachusetts (#30611, 1981);
- Pennsylvania (038260R, 1988)
- New York (#065144, 1988)
- California (C 80156)
- Maine (#4486)

Certified Professional Hydrologist (12-H-4001)

Qualified SWPPP Developer (QSD CA – #22533)

Licensed Site Professional in Massachusetts (#9033) (Inactive)

Licensed Soil Evaluator in Massachusetts (Inactive)

## YEARS OF EXPERIENCE

45



### **Canton Mountain Wind**

Located in Canton, Maine, this project consists of 8 turbines, with a total project capacity of 22.8 megawatts. It is connected to the grid via the substation near Ludden Lane in Canton that was built for the Saddleback Ridge Wind project in 2014. Canton Mountain Wind officially went online in November 2017

### **Granite Links at Quarry Hills**

Located in Quincy, Massachusetts, this project consisted of the re-use of over 11 million cubic yards of soil excavated from the Central Artery/Third Harbor Tunnel in greater Boston, MA. The soil was re-used to construct a 27-hole golf course with a luxury clubhouse/restaurant/banquet facility over and around the former city of Quincy and Town of Milton landfills. Services included design, permitting and oversight of construction activities as well as final certification of construction. The project is the largest earth moving project in Massachusetts records.

### **Condor Street Urban Wild**

Engineering, LSP, permitting and construction oversight services for the construction of the Condor Street Urban Wild, a park constructed on a site which was contaminated with hazardous material located on Condor Street in Boston, Massachusetts.

### **South Bay Undercrossing**

LSP services for the construction of the MBTA commuter line "South Bay Undercrossing", involving relocation of more than 60,000 cubic yards of contaminated media.

### **Gilson Road Hazardous Waste Site Remediation**

Project Engineer for the \$2.2 million hazardous waste remediation project at the Gilson Road Hazardous Waste Site in Nashua, New Hampshire. The remedial design involved a slurry wall up to 100' deep surrounding a 22-acre site. The entire site was also regraded and capped with a synthetic membrane liner. Alternative capping systems were fully evaluated as part of the design process. He prepared the design plans and specifications and acted in a construction oversight role for this project, which was completed in 1983 for the New Hampshire Water Supply and Pollution Control Commission.

### **Baird & McGuire Chemical Plant Site Remediation**

Project Engineer for a RI/FS conducted for the U.S. Environmental Protection Agency at the Baird & McGuire Chemical plant in Holbrook, MA. As Project Engineer, he worked with the project investigator to design the investigation and to perform the Feasibility study portion of the project. Based on the RI/FS, a selected remedy with an estimated construction cost of \$50 million was implemented by U.S. Army Corps of Engineers.

## **QUALIFICATIONS**

- Forty five years of experience in the electric utility and power supply industry with five years devoted to customer service activities in the area of Energy Management/Demand Side Management (DSM); eight years devoted to rate and regulatory activities; and thirty-two years devoted to electrical engineering and engineering consulting.
- Experienced as an effective leader of technical staff.
- Experienced at Project Management.
- Experienced at medium and high voltage substation design and construction.
- Proficient at project economic analysis.
- Excellent oral and written communication skills.
- Proficient with PSLF, SKM and PSS/E power system models.
- Solid understanding of Power and Control Systems, Demand Side Management (DSM), generator interconnection systems, renewable energy resources and electric service rates and issues.
- Licensed Professional Engineer in multiple jurisdictions.

## **PROFESSIONAL EXPERIENCE & ACCOMPLISHMENTS**

### **TECHNICAL**

- Designed balance of plant collector systems and transmission interconnections for proposed wind farms in Ontario, Prince Edward Island, Maine, Massachusetts, New Hampshire, New York, Texas and Vermont.
- Served as Project Electrical Engineer for TransCanada's development of 10 MW Brockville 1, 9 MW Brockville 2, 7 MW Burritts Rapids, 10 MW William Rutley, 10 MW Mississippi Mills, and 30 MW New Liskeard 1, 3 & 4 photovoltaic projects in Ontario, Canada.
- Designed and managed construction of the electrical balance of plant facilities associated with the Norway (9 MW) and West Cape (99 MW) wind projects on Prince Edward Island.
- Designed VEC Jay #17 and Lowell substations for source upgrade from 34.5 kV to 46 kV.
- Designed 34.5 kV collector system and interconnection substation for 63 MW Kingdom Community Wind Project
- Developed collector system and interconnection substation design as part of environment permit application for 34.2 MW Bull Hill Wind Project, 141 MW Oakfield 2 Wind Project in northern Maine and 63 MW Kingdom Community Wind Project in Vermont.
- Designed multiple 2.5 MVA medium voltage service additions for Procter & Gamble's Tambrands Facility in Auburn, Maine. Experienced with induction generators and DFIG technology.
- Experienced with Type III (DFIG) and Type IV (full inverter) wind turbine generators and inverter based utility scale photovoltaic facilities.
- Performed distribution system impact study on the 15 MW Berkshire Wind Project.
- Performed distribution system impact study on the 1.5 MW Silver Lake, 1.5 MW Pittsfield, 3.5 MW Cottage Street and 2.0 MW Indian Orchard photovoltaic projects.
- Designed, managed construction and commissioned electrical collector system and interconnection for the 40.0 MW Passadumkeag Mountain Wind, 34.0 MW Saddleback Ridge Wind, 20.0 MW Spruce Mountain Wind, 20 MW Canton Wind, 10.0 MW Pisgah Mountain Wind, 4.5 MW Freedom Wind and 4.5 MW Fox Island Wind, and the 10.0 MW Georgia Mountain Wind Projects.

- Testified before the Vermont Public Service Commission relative to the electric utility system impacts of interconnecting the Kingdom Community Wind, Georgia Mountain Wind, Sheffield Wind and the Deerfield Wind Projects.
- Conducted economic due diligence reviews for Central Maine Power Company on several alternate energy projects.
- Designed and commissioned 1.7 MW Emergency Power System with automatic transfer for waste water treatment facilities at International Paper's Bucksport mill.
- Conducted an independent review of Bangor Hydro Electric Company's service quality for the State of Maine on behalf of the Public Advocate's Office.
- Designed interconnection and collection systems for 34.2 MW Saddleback Ridge Wind Project and 20 MW Canton Wind Project.
- Developed preliminary design of 34.5 kV collector system, interconnection substation and associated 115 kV transmission line for the 132 MW Highland Wind Project and the 150 MW Oakfield II Wind Project.
- Performed short circuit, protection coordination, arc flash hazard and harmonic analysis of plant-wide electrical systems at the Passadumkeag Wind Project, Kibby Wind Farm, the Stetson Wind Farm, The Jackson Laboratory, Procter & Gamble's Tambrands Auburn facility and Groveton Paper Board's Groveton facility
- Performed comprehensive EMF surveys and calculations for proposed power plants in Dighton, Massachusetts; Chelsea, Massachusetts; Johnston, Rhode Island; and Tiverton, Rhode Island; Middletown Connecticut; Yarmouth, Massachusetts; Meriden, Connecticut; Norwalk, Connecticut and testified before both the Connecticut and Massachusetts Facility Siting Council on the issue.
- Performed comprehensive EMF analyses for proposed high voltage transmission projects in Rochester, Southampton and Smithtown, New York and submitted testimony before the New York State Public Service Commission on the issue.
- Performed EMF surveys on over 50 residential households, municipal buildings, commercial and industrial facilities.
- Served as owner's representative for the Commissioning of Jamaica Private Power Company's (JPPC) 60 Mw diesel power plant in Kingston, Jamaica.
- Performed detailed surge protection analysis for transmission facilities at International Paper Company, AES Londonderry, Public Service of New Hampshire and Meriden.
- Conducted embedded and marginal cost of service studies and sundry rate design analyses for retail and wholesale rate cases. Developed rate tariffs, rules and regulations and applications for Maine PUC and FERC submissions.
- Testified before the Maine PUC on matters relating to retail cost of service, pole rental rates, and cost effectiveness of DSM programs.
- Conducted seminars on rate and energy management topics.

## **MANAGEMENT**

- Served as Manager of Power System Analysis for TRC Engineers, LLC
- Served as oversight witness for interconnection relay and trip testing for Central Maine Power Company.
- Served as Project Manager of Central Maine Power Company's Generation Management System (GMS), Androscoggin Energy LLC (AELLC), Rumford Power Associates (RPA), and Bucksport Energy, LLC (BELLC) Merchant Plant Projects.

- Managed the Central Maine Power Company's power contracts and joint owner's agreements associated with Maine Yankee, Connecticut Yankee, Vermont Yankee, Yankee Rowe and Millstone Unit 3.
- Served as Director of System Engineering for Central Maine Power responsible for relay and control panel designs for line terminal and transformer panels, procurement specifications for large power transformers, uninterruptable power supplies, battery systems and other electrical components.
- Worked with clients to resolve technical questions related to rates and energy management programs.

## EMPLOYMENT History

### RLC ENGINEERING, LLC – Hallowell, ME

2008 – Present      *Principal Electrical Engineer*

### TRC/E·PRO ENGINEERING & ENVIRONMENTAL CONSULTING, LLC – Augusta, ME

2006 – 2007      *Manager, Power Systems Studies*

1999 – 2006      *Principal Electrical Engineer*

### E·PRO AND CENTRAL MAINE POWER COMPANY – Augusta, ME

1997 – 1999      *Principal Electrical Engineer*

1995 – 1996      *Director of Business Development*

### CENTRAL MAINE POWER COMPANY – Augusta, ME

1994 – 1995      *Technical Coordinator, Nuclear and Interim Manager of Electrical Support Services*

1991 – 1993      *Director of System Engineering*

1986 – 1990      *Director of Energy Management Planning*

1984 – 1985      *Director of Costing and Pricing Analysis*

1975 – 1983      *Staff Engineer in the Operating and Rate Departments*

## EDUCATION

B. S., Electrical Engineering, University of New Hampshire, 1974

M. S., Management, Thomas College, 1980

## PROFESSIONAL AFFILIATIONS / REGISTRATIONS

- Licensed Professional Engineer, Maine, #3811, since 1978
- Licensed Professional Engineer, New Hampshire, #10409, since 2001
- Licensed Professional Engineer, Province of Prince Edward Island, #1140 (inactive)
- Licensed Professional Engineer, Vermont, #69338, since 2010
- Licensed Professional Engineer, Massachusetts, #48860, since 2010
- Licensed Professional Engineer, Connecticut # 28161, since 2011
- Licensed Professional Engineer, Pennsylvania #80291, since 2012
- Licensed Professional Engineer, New York #91420, since 2012
- Licensed Professional Engineer, Florida # 77998, since 2014



## KENNETH KALISKI, PE, INCE BD. CERT

Senior Director

EXPERIENCE | 35 Years

EDUCATION | BE, Engineering, Dartmouth College  
AB, Biological Sciences & Envir. Studies, Dartmouth College

LICENSES/CERTIFICATIONS | Board Certified, INCE; PE in NH, VT,  
IL, MA, and MI

## BIO

Ken Kaliski has 35 years of experience, having worked in all of RSG's market areas with a focus on engineering and advanced analytics. His technical specialty is in noise control engineering, where he works on projects such as community noise monitoring and modeling, architectural acoustics, transportation noise, and industrial noise control. He also works on complex modeling projects in the fields of market and energy research. Ken is the co-holder of Patent 7,092,853 for an Environmental Noise Monitoring System.

## PROJECT EXPERIENCE

**Cassadaga Wind.** Project manager for a comprehensive noise impact assessment of the Cassadaga Wind project in western New York. The project included seasonal sound monitoring at six sites, background infrasound monitoring, short- and long-term sound propagation modeling, construction noise modeling, and evaluations of annoyance potential using the Community Noise Rating and published dose-response curves. Designed mitigation to meet project design goals, town standards, and proposed regulatory limits. Prepared prefilled testimony and attended New York State Article 10 hearings on the project.

**National Survey of Attitudes of Wind Power Project Neighbors.** Project manager for a study of the factors that affect audibility and annoyance from wind turbines. This study is based on a national survey of people who live around wind power projects, which was conducted by the Lawrence Berkeley National Laboratory and funded by the U.S. Department of Energy. The result of the study was published as a peer-reviewed paper in the Journal of the Acoustical Society of America (see publications, below).

**Black Fork Wind.** Conducted a noise assessment of this 100.5 MW wind project in Richland and Crawford Counties in Ohio. Monitored background sound levels over a two-week period for eight locations over an eight-day period. Correlated wind speed measured at project met towers with background wind speeds and assessed the average background sound level over all sites for use in comparing modeled wind turbine sound levels to Ohio's relative sound standard. Presented testimony to Ohio Power Siting Board.

**Massachusetts Research Study on Wind Turbine Acoustics.** Leading a study on wind turbine sound to help the State of Massachusetts Clean Energy Center and Department of Environmental Protection improve the regulation of wind turbines in the State. The study includes detailed data collection around five wind projects in New England, support to the Wind Turbine Technical Advisor Committee of the MassDEP, and quantitative analysis of factors such as infrasound, amplitude modulation, sound levels, and sound propagation modeling.

**Highland Plantation Wind Farm.** Managed the noise study for the Highland Plantation Wind Farm near Bingham, Maine. The project included

long-term sound monitoring at five locations around the site and modeling the 39 turbines proposed for the project. Sound propagation modeling was done to assess conformance with the Maine DEP standards, and mitigation was recommended in a report as part of the permitting proceedings.

**Scioto Ridge/Hardin Wind.** Managed the pre-construction noise study for the 242 MW Scioto Ridge/Hardin Wind project in Hardin and Logan Counties, Ohio. Oversaw the installation of 13 sound monitors around the project and modeling of sound at all residences around the project from construction, the operating wind turbines, and associated transmission line and substation. Prepared direct testimony for the project for consideration at the Ohio Public Siting Board.

**Spruce Mountain Wind, Maine.** Conducted assessment of turbulence intensity and potential impacts to amplitude modulation during permitting. During post-construction, management of continuous 24/7/365 compliance monitoring system. Developed software for processing combining 50 ms sound monitoring data with turbine SCADA and met tower instrumentation to assess sound pressure level, amplitude modulation, and tonal sound over 10-minute compliance periods.

**Review of Wind Project on Behalf of Oakfield Township.** Retained by the Oakfield Township in Maine, reviewed the noise portion of the application of First Wind to construct a wind farm. Provided presentations to the Township on general noise topics and, separately, on the findings of our review. Consulted to the Wind Energy Committee on language for a proposed ordinance.

### PUBLICATIONS

Haac, R., Kaliski, K., Landis, M., Hoen, B., Rand, J., Firestone, J., Elliott, D., Hübner, G., and Pohl, J. "Wind turbine audibility and noise annoyance in a national U.S. survey: Individual perception and influencing factors." The Journal of the Acoustical Society of America 146.1124 (2019).

Kaliski, K., Bastasch, M., and O'Neal, R., "Regulating and predicting wind turbine sound in the U.S.," Proceedings of Inter-Noise 2018, Chicago, IL, August 2018.



Old, I., Kaliski, K., "Wind turbine noise dose response – Comparison of recent studies," 7th International Conference on Wind Turbine Noise, May 2017

Kaliski, K., and Duncan, D. "The Challenges of Modeling Percentile Sound Levels from Mining and Other Environmental Noise," National Council of Acoustical Consultants Newsletter, Fall 2015

McCunney, R., Mundt, K., Colby, D., Dobie, R., Kaliski, K., and Blais, M., "Wind Turbines and Health; A Critical Review of the Scientific Literature," Journal of Occupational and Environmental Medicine 56(11) 2014.

Kaliski, K.; Duncan, E.; McPhee, P.; West, C.R.; O'Neal, R.; Zimmerman, J.; Snyder, J., "The Massachusetts research study on wind turbine acoustics - Methods and goals", Proceedings of NoiseCon14, Fort Lauderdale, Florida, 2014.

Kaliski, K., Neeraj, G., Prevalence of complaints related to wind turbine noise in northern New England," Proceedings of Meetings on Acoustics, Vol 19, 2013

Kaliski, K., Old, I., Blomberg, L., "Sound emissions from a plug-in electric vehicle," Proceedings of the 2012 Institute of Noise Control Engineers InterNoise 2012

Kaliski, K., "Winning Community Acceptance: Dispelling Myths and Promoting the Realities about Wind Power – Noise Impacts," AWEA New England Regional Wind Energy Summit, 2012, and AWEA Community Wind Working Group webinar, 2012

Kaliski, K., Wilson, D.K., Vecherin, S., Duncan, E., "Improving Predictions of Wind Turbine Noise Using PE Modeling," Proceedings of the 2011 Institute of Noise Control Engineers NOISECON 2011

Kaliski, K., and Duncan, E. "Calculating Annualized Sound Levels for a Wind Farm," Acoustical Society of America, Proceedings of Meetings on Acoustics, Vol. 9, 2010.

Park, L, Lawson, S, Kaliski, K., Newman, P. and Gibson, A. "Modeling and Mapping Hiker's Exposure to Transportation Noise in Rocky Mountain National Park," Park Science Vol. 26 No 3, Winter 2009-2010.

Collier, R., and Kaliski, K. "Design of a Quiet Space with an Acoustic Canopy within a Large Reverberant Room," Proceedings of the 2008 Institute of Noise Control Engineers NOISECON 2008.

Kaliski, K., Hathaway, K., and Adler, T. "Assessing the prevalence of mining noise in a community using dichotomous correlation," Proceedings of the 2008 Institute of Noise Control Engineers NOISECON 2008.

Kaliski, K. and Duncan, E. "Propagation modeling Parameters for Wind Power Projects," Sound & Vibration Magazine, Vol. 24 no. 12, December 2008.

Duncan, E. and Kaliski, K. "Improving Sound Propagation Modeling for Wind Turbines," Acoustics 08, Paris 2008.

Kaliski, K. "Sound Advice: Evaluating Noise Impacts in a Changing Landscape," American Wind Energy Association Fall Symposium, November 2008.

Kaliski, K., and Duncan, E. "Propagation Modeling Parameters for Wind Turbines," Proceedings of the 2007 Institute of Noise Control Engineers NOISECON 2007.

Kaliski, K., Duncan, E., and Cowan, J. "Community and Regional Noise Mapping in the United States," Sound & Vibration Magazine, Vol. 41 No. 9, September 2007.

Collier, R. and Kaliski, K. "A Low-Complexity Environmental Noise Monitoring System for Unattended Operation in Remote Locations," Presented at the Acoustical Society of America conference, Salt Lake City, 2007.

Cowan, J. and Kaliski, K. "Tools for Expedited Regional Transportation Noise Mapping," Presented at the Transportation Research Board Summer Meeting, 2006.

Hathaway, K, and Kaliski, K. "Assessing Wind Turbines using Relative Noise Standards," Proceedings of the 2006 Institute of Noise Control Engineers INTERNOISE 2006.

Kaliski, K. "Using Transportation Demand Models to Assess Regional Noise Exposure," Proceedings of the 2005 Institute of Noise Control Engineers NOISECON 2005.

Collier, R. D., and Kaliski, K. H., and Ray, R. R. "Experimental Techniques for Evaluation of Active Noise Reduction Communication Headsets with the Thayer Low Frequency Acoustic Test Cell," Proceedings of the 2003 Institute of Noise Control Engineers NOISECON 2003.

Ray, R. R., Collier, R. D., and Kaliski, K. H. "Optimization of Stability and Performance of LMS Filters for Feedforward Active Noise Reduction in Communications Headsets," ACTIVE 02, The 2002 International Symposium on Active Control of Sound and Vibration, July 2002.

Kaliski, K. H., Mills-Tettey, A., Seitaridou, E., Collier, R. "Low-Complexity Continuous Noise Monitoring System for Communities, Small Airports, and Remote Areas," Proceedings of the 2001 Institute of Noise Control Engineers NOISECON 2001.

Marshal, N.L., Kaliski, K.H., Rimmer, L.L., Lawe, J.C. "Estimating Network Model Parameters from Mail Survey Data," Proceedings of ASCE 4th International Conf. on Microcomputers in Transportation, Baltimore MD, July, 1992.

Kaliski, K. "Integrating Network Modeling and Air Pollution Modeling to Determine NO2 Contributions from Motor Vehicles," Proceedings of the 3rd National Conference on Transportation Solutions for Small and Medium-Sized Areas, Transportation Research Board, October, 1991.

#### LICENSES, CERTIFICATIONS, MEMBERSHIPS, AND AFFILIATIONS

- Licensed Professional Engineer (PE), States of Vermont, New Hampshire, Illinois, Massachusetts, and Michigan
- Board Certified, Institute of Noise Control Engineering
- Acoustical Society of America
- Qualified Environmental Professional, Institute of Professional Environmental Practice
- Tau Beta Pi Engineering Society

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## **STEPHEN A. OLAUSEN**

### **EXECUTIVE DIRECTOR/SENIOR ARCHITECTURAL HISTORIAN**

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#### **EDUCATION**

MA, University of South Carolina, Applied History and Historic Preservation, 1988

BA, Roanoke College, History, 1984

#### **EXPERIENCE**

Years with PAL: 24  
Years Experience: 34

#### **CERTIFICATION**

Basic First Aid/BBP - American Heart Association

Adult CPR/AED - American Heart Association

OSHA 29 CFR 1910.120(e) 40-Hour Hazardous Waste/Emergency Response

OSHA 29 CFR 1910.120(e) 8-Hour Hazardous Waste/Emergency Response Supervisor

#### **PROFESSIONAL DEVELOPMENT**

Section 106: Working with the Revised Regulations

Workshop on the New 36 CFR Part 800: Highlights of Changes

Federal Energy Regulatory Commission Section 106 Compliance Seminar

#### **MEMBERSHIPS**

Society of Architectural Historians  
National Council on Public History  
National Trust for Historic Preservation

As a PAL Senior Architectural Historian and Project Manager, Mr. Olausen conducts cultural resource management projects that require the identification, evaluation, and registration of historic architectural and landscape properties. He also serves as PAL's Executive Director and oversees the administrative operations of the firm, including the information systems, production, and human resources departments. He fully meets the Secretary of Interior's Professional Qualification Standards for conducting historic architectural projects (36 CFR Part 61 Appendix A).

Olausen is expert at coordinating projects that are conducted under federal historic preservation laws, including the National Historic Preservation Act, National Environmental Policy Act, and Section 4(f) of the Department of Transportation Act, as well as the various state historic preservation laws of the New England and Mid-Atlantic regions. His experience includes the completion of hundreds of historic property identification and evaluation surveys, more than 150 successful National Register of Historic Places nominations, and a large number of HABS/HAER and state-level documentation projects. Other areas of expertise include the preparation of cultural resource management plans, Section 106 reports and a agreement documents, Section 4(f) statements, architectural design guidelines, historic preservation tax incentive certifications, and the development of public educational materials and displays. He also specializes in adapting computer applications to provide solutions for cultural resource management data collection and has a broad range of experience in computer assisted design (CAD), database management, geographical information systems (GIS), and desktop publishing.

Olausen has conducted projects for a wide variety of Federal clients, including the U.S. Army Corps of Engineers, National Park Service, U.S. Coast Guard, U.S. Department of Agriculture, Federal Emergency Management Agency, Federal Railroad Administration, National Railroad Passenger Corporation (Amtrak), General Services Administration, U.S. Army, and U.S. Navy. He has managed aboveground historic property work for PAL projects conducted for the departments of transportation in Connecticut, Rhode Island, Massachusetts, and Maine. He has also worked extensively for prominent private energy clients, including National Grid, TransCanada, and Spectra Energy.

Over the last 15 years, Olausen has managed numerous wind energy projects in Massachusetts and Maine. The work has included historic property identification and evaluation surveys, effects assessments, consultation under Section 106, and the preparation of mitigation documentation. The projects have ranged from large utility scale developments like Cape Wind in Nantucket Sound to single turbine projects. Olausen has managed compliance regarding historic property identification and effects assessment for more than half of the operating or proposed grid-scale wind projects in Maine, including Stetson Ridge I and II, Oakfield, Bingham, Canton Mountain, Highland, Rollins, Bowers Mountain, Bull Hill, Passadumkeag, Number Nine, Hancock, and Record Hill. Olausen is fully familiar with the Maine site laws governing major wind developments and the particular requirements of the Maine Historic Preservation Commission for the review of such projects.

# Broadwater Environmental, LLC

18 Grand St., South Portland, ME 04106

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## **Ian N. Broadwater** **Principal Scientist/Owner**

207-653-8737

[ian@broadwaterenvironmental.com](mailto:ian@broadwaterenvironmental.com)

### **Experience**

Mr. Broadwater has over 35 years of experience in environmental consulting. His areas of expertise include land use permitting and data collection. Mr. Broadwater provides services including wetland delineation and characterization, vernal pool surveys, high intensity soil maps and subsurface wastewater disposal system design. Mr. Broadwater also has experience evaluating and designing river and wetland restorations. Mr. Broadwater has experience managing the completion of complex projects and is responsible for the preparation of project-related documents, and monitoring scope, schedule, and budget.

Specialized skill areas include: • land use permitting • wetland delineation, assessment, and mitigation design • river and stream restoration • high intensity soil mapping • vernal pool surveys • site screening studies

#### Employment History

- 2016-Present-Principal/Owner; Broadwater Environmental, LLC
- 2008 to 2016-Principal Scientist; Normandeau Associates, Inc.
- 2005 to 2008-President/Owner Broadwater Environmental, Inc.
- 1985 to 2005-Senior Scientist; MACTEC (currently Wood)

### **Registration and Certification**

Certified Soil Scientist – Maine No. 305

Certified Wetland Scientist-New Hampshire No. 162

Licensed Site Evaluator (Subsurface Wastewater Disposal Designer)– Maine (Maine No. 230)

### **Education**

B.S., Plant and Soil Sciences, University of Maine, 1984

### **Representative Projects**

**Site Design Associates, Inc., Wetland and Vernal Pool Survey, Biddeford, Maine (2020).** Broadwater Environmental, LLC conducted a wetland and vernal pool survey on a 25-acre parcel owned by a commercial entity. Eight natural vernal pools and four man-made vernal pools were identified during the survey. Boundaries of associated wetlands were also delineated and located with a GPS capable of submeter accuracy. A report detailing the findings of the surveys was written in support of permit applications for development of the parcel.

**Sackett and Brake Survey, Inc., Wetland and Vernal Pool Survey, MSAD 54, Skowhegan, Maine (2020).** Broadwater Environmental, LLC conducted a wetland and vernal pool survey on a 105-acre area on the MSAD 54 campus. Four natural vernal pools were observed during the survey. Several areas of wetland were also identified and associated boundaries were located with a GPS capable of submeter accuracy. A report detailing the

finding of the surveys was written in support of potential permit applications for development of the area.

**Ransom Consulting, LLC, Class B Soil Map and Report, Belfast, Maine (2019).** Broadwater Environmental, LLC was retained by Ransom Consulting, LLC to complete a Class B soil map on a 50-acre parcel. A large commercial development was planned for the parcel. Twenty-six test pits and numerous hand augers were completed to characterize soils at the site. A comprehensive report containing a Class B soil map, test pit logs and map unit interpretations was completed for the project.

**Confidential Client, RCRA Clean-up, Woodard Curran, Inc., Groton, CT (2018-2019).** Broadwater Environmental, LLC was retained by Woodard Curran Inc. to assist with permitting at a riverfront facility owned by a large industrial client. Woodard Curran has been tasked with designing and implementing a clean-up of sediments that contain certain concentrations of metals and polyaromatic hydrocarbons. Mr. Broadwater provided consulting on permitting and completed a Natural Diversity Database Request Form, prepared for and attended a preapplication meeting with the Connecticut Department of Energy and Environment's (CTDEEP's), and completion of an Office of Long Island Sound Programs Coastal Maintenance General Permit Application which was approved.

**River and Wetland Permitting and Mitigation, AMEC Foster Wheeler, Windsor, Connecticut (2009-Present).** Mr. Broadwater provides wetland and ecological support for a series of remediation projects at a property in Windsor, Connecticut. Mr. Broadwater coordinated the environmental permit applications for two remediation projects that projects were undertaken as part of the sites decommissioning that was mandated by the Nuclear Regulatory Commission.

The project required local Inland Watercourses and Wetlands Commission (IWWC) permits, CTDEEP 401 Permit and a Corps 404 Individual Permit. Mr. Broadwater completed much of the applications and provided testimony at the Windsor IWWC hearings on the projects. Remediation included a ½ mile stretch of stream and associated floodplains. Mr. Broadwater also coordinated a survey of the portions of the site for species of special concern that had been documented to occur in the vicinity of the site. Mr. Broadwater also provided on-site technical oversight of the restoration project and monitoring of the restoration sites since 2012. Annual monitoring reports are being prepared for the project with the last due in 2021.

## **Memberships**

Maine Association of Professional Soil Scientists, Maine Association of Wetland Scientists, Maine Association of Site Evaluators, Soil Scientist Society of Southern New England, Society of Wetland Scientists, Connecticut Association of Wetland Scientists, Soil Scientist Society of Northern New England