

Weaver Wind Project

MDEP Site Location of Development/NRPA Combined Application

SECTION 4: TECHNICAL CAPACITY

4.0 TECHNICAL CAPACITY

The team assembled for the project has experience in developing and constructing numerous utility-scale wind power projects.

Longroad is an independent developer, owner and operator of utility-scale wind and solar projects throughout the United States. The Company was founded in 2016 and is led by former executives who built, grew, and managed First Wind prior to its purchase by SunEdison. Prior to forming the company, the Longroad team worked together for over ten years to successfully develop over 30 utility-scale wind and solar projects totaling close to 3,300 MW. Today, Longroad has 1,236 MW of operating wind and solar projects under management. Additionally, Longroad has a greenfield development pipeline of wind and solar projects totaling over 6.5 Gigawatts, including the 237.6 MW Rio Bravo wind project currently under construction in Starr County, Texas.

The local project development team includes: Stantec Consulting Services, Inc. (natural resource assessments; permitting; soils); Reed and Reed, Inc. and James W. Sewall Company (civil engineering, stormwater analysis); CHA, Inc. (electrical engineering); Plisga & Day (land surveys); Aerial Survey and Photo, Inc. (aerial photography interpretation); Epsilon Associates, Inc. (shadow flicker assessment); Terrence J. DeWan & Associates (visual impact analysis); Market Decisions, LLC (user surveys); Bodwell EnviroAcoustics, LLC (sound assessment); TRC Solutions (prehistoric archaeological resources); Independent Archaeological Consulting, LLC (historic archaeological resources); Kleinfelder (historic architectural resources); Normandeau Associates, Inc. (soil surveys); Western Ecosystems (biology) and Verrill Dana (legal counsel). See Exhibit 4-1 for biographies of key team members.

Weaver Wind Project

MDEP Site Location of Development/NRPA Combined Application

SECTION 4: TECHNICAL CAPACITY

Exhibit 4-1

Key Team Member Biographies

Principal Biographies

Paul Gaynor

Co-Founder Longroad Energy Partners and CEO

Areas of Responsibility: Development, M&A, Capital Allocation, Fundraising

Mr. Gaynor has more than 25 years of experience in the energy field, encompassing leadership and finance roles in the energy, power, pipeline, and renewable energy sectors. In addition, he has been engaged in several landmark energy and power transactions and financings across the globe.

Mr. Gaynor co-founded Longroad Energy Partners with his former First Wind colleagues: Michael Alvarez, Peter Keel, and Charles Spiliotis. At Longroad, Mr. Gaynor is responsible for the strategic direction and overall management of Longroad's businesses.

Prior to co-founding Longroad, Mr. Gaynor worked for SunEdison as the EVP responsible for its Global Utility scale development business. In January 2015, First Wind was acquired by SunEdison and an affiliate. At First Wind, Mr. Gaynor was the CEO, an investor, and on its board of directors. Mr. Gaynor co-founded First Wind in 2004 and grew the company from a clean sheet of paper to \$1.5 billion equity value when it was sold.

Mr. Gaynor was formerly Chief Financial Officer of Noble Power Assets, LLC, a private equity-backed power acquisition company. Prior to that, he was the Senior Vice President and Chief Financial Officer of Singapore Power Group and then later the Chief Development Officer of Singapore Power Group (SP) and Chief Operating Officer of SP International (SPI).

From 1998 to 2000, Mr. Gaynor was the Senior Vice President and Chief Financial Officer of PSG International, a pipeline development company owned by GE Capital and Bechtel Enterprises. It was at PSG International, that Mr. Gaynor and Mr. Alvarez first worked together. Before PSG, Mr. Gaynor was Vice President and Manager of Asia Pacific operations for GE Capital's Structured Finance Group (SFG). He also worked at GE Capital SFG in the U.S. before moving to Asia, and he sold power plants for GE Power Systems prior to attending business school.

Education and Credentials:

Bachelor of Science, Mechanical Engineering, Worcester Polytechnic Institute

Master of Business Administration, University of Chicago Graduate School of Business

American Wind Energy Association Board of Directors

Member of Sierra Club's Clean Tech Advisory Board Member of Boston Green Ribbon Commission

Former Chairman and Director, Board of Managers, Deepwater Wind, LLC

Former Co-chair of The Climate Protection Advisory Committee under the Commonwealth of Massachusetts' Global Warming Solutions Act

Former Co-chair of the Massachusetts Department of Environmental Protection Advisory Committee Low Carbon Energy Supply Subcommittee

Principal Biographies

Michael U. Alvarez

Co-Founder Longroad Energy Partners and COO

Areas of Responsibility: Construction, Asset Management and Operations

As Chief Operating Officer, Mr. Alvarez is responsible for managing all engineering, procurement, construction and asset management activities for Longroad. In addition, he oversees the HR, IT, External Affairs, and Facilities functions.

Mr. Alvarez co-founded Longroad after having worked at SunEdison where he was Executive Vice President of Global EPC and Global Asset Management where he managed all engineering, procurement, construction and asset management, IT and Facilities activities for the company around the world.

Prior to the acquisition of First Wind, Mr. Alvarez served as its President and Chief Financial Officer, where he oversaw Finance and Accounting, Development, EPC, Operations, HR, IT, and Facilities. He was also an investor in First Wind.

Before joining First Wind, Mr. Alvarez served as Vice President of Strategic Planning at Edison International, the parent of Southern California Edison and Edison Mission Energy.

Earlier, he served as Executive Vice President, Chief Financial Officer, and General Counsel at Nexant Inc., a private company providing software and advisory services to the global energy industry.

Before Nexant, Mr. Alvarez managed the development of the \$2.3 billion, 1,700-kilometer TransCaspian natural gas pipeline while at PSG International in London.

He was also President at Kenetech Energy Systems Inc., successfully managing the development of electric power generation projects, as well as a global operating portfolio of wind, gas, biomass, and oil-fired projects.

Mr. Alvarez began his career with the San Francisco law firm of Thelen, Marrin, Johnson & Bridges where he was a partner specializing in commercial and project financing.

Education and Credentials:

Bachelor of Arts, Economics, University of Virginia

Juris Doctor, University of Virginia

Trustee, California State Parks Foundation

Former Member, Board of Managers, Deepwater Windpower, LLC Member of the Bar of California, New York and Washington, D.C

Principal Biographies

Peter Keel

Co-Founder Longroad Energy Partners and CFO

Areas of Responsibility: Financing, Accounting, Financial Planning

As Chief Financial Officer, Mr. Keel is responsible for managing all of Longroad's finance-related activities.

Prior to co-founding Longroad, Mr. Keel served as the CFO for SunEdison's Global Utility scale development business and then as General Manager of the North America division. Mr. Keel led numerous transactions including an \$800 million JV with Dominion, a \$500 million equity warehouse facility with JP Morgan Asset Management, and construction loans, term loans, and tax equity investments well in excess of \$1 billion with counterparties including Berkshire Hathaway Energy, US Bank, and Citigroup.

At First Wind, Mr. Keel was the SVP of Finance and Treasurer, where he was responsible for finance, accounting, treasury, planning, and investor relations. Mr. Keel led the successful negotiation of over \$5 billion in total financings across the capital structure, including First Wind's Northeast Joint Venture with Emera, a first ever tax equity investment by CIRI, and a prepay PPA with LADWP/SCPPA.

Previously, Mr. Keel held a variety of roles in the energy field including engineering, commercial, finance, and management positions. He structured debt and equity transactions related to power generation and pipeline assets with GE Energy Financial Services, held commercial roles with GE Power Systems and GE Wind Energy, and completed GE's Junior Officer Leadership Program.

Prior to GE, Mr. Keel served as a U.S. Coast Guard Officer where he operated and maintained a gas turbine propulsion plant aboard the U.S. Coast Guard Cutter *Dallas* and served as a White House Military Social Aide.

Education and Credentials:

Bachelor of Science in Civil Engineering (Honors), United States Coast Guard Academy
Master of Arts in Liberal Studies, Public Policy, Georgetown University

Principal Biographies

Charles Spiliotis

Co-Founder Longroad Energy Partners and CIO

Areas of Responsibility: Financing, M&A, Development

As Chief Investment Officer, Mr. Spiliotis is responsible for managing all of Longroad's M&A and capital investment activities.

Prior to co-founding Longroad, Mr. Spiliotis served as the Vice President of Strategy and M&A at SunEdison, where he led M&A, partnerships and strategic initiatives in support of the global utility-scale development platform, including the acquisition of more than 2 GW of operating and development stage renewable energy assets.

Previously, Mr. Spiliotis was Vice President, Corporate Development and Project Finance at First Wind, an independent renewable energy company focused on the development, financing, construction, ownership and operation of utility-scale power projects in the United States.

In this role, Mr. Spiliotis led First Wind's corporate and project financing efforts as well as the company's long term strategic planning. While at First Wind, Mr. Spiliotis executed transactions totaling more than \$7 billion including corporate debt and equity, project construction and term debt, and structured tax equity and lease transactions.

Prior to joining First Wind, Mr. Spiliotis worked in a variety of roles in institutional asset management and services at State Street Corporation.

Education and Credentials:

Bachelor of Arts, Philosophy, Economics (Minor), Hamilton College

Principal Biographies

Matt Kearns

Chief Development Officer Longroad Energy Partners

Areas of Responsibility: Development, M&A

Mr. Kearns has more than 15 years of experience in the clean energy industry developing projects and leading teams to develop portfolios of renewable energy projects throughout the United States.

Over a decade at First Wind Mr. Kearns led the development team in the eastern United States. In particular, he led development and supported the financing and construction of approximately 700MW of wind power in the northeastern United States, which is among the most challenging permitting and development environments in the country. This portfolio includes the two largest wind projects in New England; Oakfield Wind (150MW) and Bingham Wind (186MW). Mr. Kearns led the development of these projects since their inception including the negotiation of power purchase agreements under the Green Communities Act, a large New England clean energy procurement. Mr. Kearns also negotiated a permitting settlement agreement with the Appalachian Mountain Club including the creation of a land conservation fund.

At Longroad, Mr. Kearns is responsible for the strategic direction of the company's development plan and management of Longroad's development businesses day to day.

Prior to joining Longroad, Mr. Kearns ran Sun Edison's North American Utility development team with a focus on the United States and Canada. In 2015, Mr. Kearns merged the First Wind and Sun Edison teams and completed development and supported financing of ~1.5GW of wind and solar projects.

From 1999 to 2004, Mr. Kearns worked for FPL Energy (now NextEra) supporting the development of wind and solar projects in 17 states across the United States with FPL Energy. Prior to that, Mr. Kearns worked for Duke Engineering and Services as a consultant to the hydropower industry.

Education and Credentials:

Bachelor of Arts, English/ Environmental Studies, Colby College

Maine Audubon, Advisory Board of Directors

Boys and Girls Club of Southern Maine, Corporators

Principal Biographies

Deron Lawrence, MS.

Director, Natural Resources Permitting and Policy, Longroad Energy Partners

Mr. Lawrence has over 25 years of experience conducting or overseeing natural resource studies and permitting. For more than 10 years, he has been assisting development of utility-scale wind, solar, and transmission line projects from initial due diligence and critical issues assessment through project permitting acquisition and operational compliance. At Longroad, Mr. Lawrence is responsible for environmental assessment, field studies, permitting, and compliance for the Longroad portfolio of early-phase prospects through operating projects.

Mr. Lawrence has worked on projects in every western state of the US as well as many states in the Midwest and East Coast; outside of the US, he has supported project reviews in Mexico, Central and South America, Turkey, France, & Norway. Mr. Lawrence has worked on private, state, and US trust lands, and coordinates with the agencies charged with overseeing resource management and providing authorizations for construction when there will be potential resource impacts. He has worked closely with the US Fish and Wildlife Service (USFWS) to develop Bird and Bat Conservation Strategies (BBCS), Eagle Conservation Plans (ECP), attain MBTA (Migratory Bird Treaty Act) compliance, and drafted the second environmental assessment for an eagle take permit for the USFWS in the US.

Prior to joining Longroad, Mr. Lawrence was the Environmental Permitting Manager for the Western US at SunEdison, where he worked in the US and internationally to support greenfield project development reviews, assess project schedule and costs while acquiring permits, and reviewing M&A targets.

Earlier in Mr. Lawrence's career, he was a field ecologist and researcher, coming up through the ranks as a wildlife and stream ecologist, a GIS analyst, water quality expert, and client advocate to local, state, and federal agencies with a focus on solving questions with technical data that supported appropriate mitigation. He served on a technical committee that reviewed the Endangered Species Act listing status recommendation for a species, working closely with experts inside and outside the USFWS. For a few years, Mr. Lawrence taught environmental philosophy and other courses at the university level, honing his analytic skills while expanding his interest and experience in solving difficult human-environmental conflicts with both technical data and philosophic constructs.

Education and Credentials:

M.A. Environmental Philosophy, passed orals with Great Distinction – St. Louis University, St. Louis, MO

M.S. Ecology – Idaho State University, Pocatello, ID

B.S. Ecology – Idaho State University, Pocatello, ID



Mr. Barnes is a recognized expert in environmental regulations and permitting, with more than 20 years experience in the regulatory field. As a former Deputy Commissioner of the Maine Department of Environmental Protection (Maine DEP), Mr. Barnes offers Stantec clients unparalleled practical expertise in evaluating critical permitting issues for projects, developing permit applications, conducting negotiations with state and federal agencies, and assisting in expert witness testimony preparation.

Mr. Barnes' 15 years of experience at the Maine DEP included extensive work in enforcement, policy analysis, compliance monitoring, policy development and implementation, licensing, rulemaking, leadership development, and organizational change. In addition to his regulatory experience, he served on the Governor's Alternative Dispute Resolution Task Force, as Acting Chief Counsel to Governor King and was a Leadership Instructor for the Maine Management Institute, building professional leaders and managers in state government.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Senior Project Manager.
- Woodlot Alternatives, Inc. 2006-2007. Project Manager.
- Maine DEP. 1998-2003. Deputy Commissioner.
- Office of Governor Angus S. King, Jr., Maine. 2002. Acting Chief Legal Counsel.
- Maine DEP. 1995-1998. Director, Policy Development & Implementation.
- Maine DEP. 1990-1995. Director, Enforcement and Procedures.
- Maine DEP. 1988-1990. Chief Policy Analyst.
- Sherman, Sandy and Lee. 1987-1988. Associate Attorney.

EDUCATION

JD, University of Maine School of Law, Portland, Maine, 1986

BA, Sociology, University of Southern Maine, Portland, Maine, 1983

REGISTRATIONS

Attorney #3347, Maine State Bar Association

PROFESSIONAL ASSOCIATIONS

Member, Maine Management Service

Board of Directors, Environmental & Energy Technology Council of Maine

PROJECT EXPERIENCE

Facility Siting and Permitting

Bangor Landing Coal Tar Cap, Bangor, Maine

Senior Project Manager responsible for overseeing preparation of environmental surveys and a Section 7 biological assessment for salmon and shortnosed sturgeon. These work products were prepared for applications to the Maine Department of Environmental Protection and the U.S. Army Corps of Engineers for dredging and capping coal tar deposits in the Penobscot River. He provided regulatory contact and strategic management of the permitting and natural resources agency review. This project was completed in late-2009.

Brooke E. Barnes

Senior Project Manager, Regulatory Specialist

Line 56 Project, Maine

Senior Project Manager responsible for completing all siting and natural resource permitting simultaneously with the Stetson Wind Project for a 38-mile long, 115-kilovolt transmission line running through 6 townships. The purpose of the Line 56 Project was to connect the (then) proposed Stetson Wind Project with an existing substation in Chester, Maine. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, Land Use Regulation Commission, and local permit applications and answering all regulatory agency questions regarding these applications. He participated in all public meetings to address comments and questions from local citizens; provided strategic regulatory advice to the client; and oversaw the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications. Following acquisition of the necessary permits, he oversaw resource demarcation (i.e., marking previously identified wetlands, vernal pools, and other significant natural resources) and provided environmental compliance support during the construction process. Line 56 is fully operational.

Lowes Home Improvement Centers, Ellsworth, Thomaston, and Brewer, Maine

Senior Project Manager responsible for coordinating all wetland permitting, wetland mitigation design, and wetland mitigation monitoring for three commercial developments resulting in nearly 10 acres of wetland impacts. Annual monitoring is conducted in order to determine the success of three mitigation sites. Monitoring efforts include providing reports to state and federal regulatory agencies as a condition of the three permits issued. Permits from the Maine Department of Environmental Protection and the U.S. Army Corps of Engineers were obtained in 2006, the stores were constructed in 2007, and the second of five monitoring years was successfully completed.

Penobscot River Module Facility, Brewer, Maine

Senior Project Manager responsible for developing an Endangered Species Act-compliant biological assessment and mitigation plan and completing natural resource permitting in association with a 10-acre area of sediment containing visible tar at a paper mill demolition site in Bangor, Maine. The purpose of the assessment and mitigation plan was to remediate the site in order to obtain permits for the construction of a module facility at this site. Permitting efforts including submitting Maine Department of Environmental Protection and U.S. Army Corps of Engineers permit applications. He was instrumental in reducing the typical turn-around time for application review, as permits were obtained in mid-2009 within 30 days of application submittal.

Cabela's Commercial Development, Scarborough, Maine

Senior Project Manager responsible for natural resource permitting associated with a mixed-use retail and commercial development on 73 acres, anchored by a 130,000-square foot Cabela's retail store, the first in the State of Maine. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications and answering all regulatory agency questions regarding these applications. Cabela's, as well as the restaurants, banks, and hotel on-site, have been operational since 2007.

Wind Farm Development

Oakfield Wind Project, Oakfield, Maine

Senior Project Manager responsible for all siting and natural resource permitting for a 34-turbine wind project encompassing 600 acres, including 12 miles of collector line, capable of generating 51 megawatts of renewable energy. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications and answering all regulatory agency questions regarding these applications. He also participates in all public meetings to address comments and questions from local citizens; provides strategic regulatory advice to the client; oversees the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications; and manages a budget in excess of 1.1 million. The project is expected to be fully operational in 2011.

Brooke E. Barnes

Senior Project Manager, Regulatory Specialist

Stetson II Wind Project, Washington County, Maine

Senior Project Manager responsible for obtaining all federal, state, and local permits for a 60-million dollar wind project consisting of 17 turbines along mountain ridgelines and a 32,183-linear foot collector line connecting this project to the Stetson Wind Project. Permitting efforts included drafting and submitting Land Use Regulation Commission, Maine Department of Environmental Protection, and Maine Department of Transportation permit applications. He participated in all public meetings to address comments and questions from local citizens; managed subcontractors, provided strategic regulatory advice to the client, oversaw the natural resource surveys for the siting and permitting of the project, and handled a nearly half-million dollar budget. This project is currently under construction and is expected to be fully operational in early 2010.

Rollins Wind Project, Penobscot County, Maine

Senior Project Manager and Prime Subcontractor Manager responsible for permitting and design of an extensive 60-megawatt wind project consisting of 40 turbines, 2 transmission lines, an electrical substation, and an operations and maintenance building. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, Maine Department of Transportation, U.S. Army Corps of Engineers, and local permit applications; and addressing agency questions and concerns, including those of the U.S. Fish and Wildlife Service regarding impacts to eagles. The results of these discussions in turn influenced the siting and permitting efforts of future wind projects. He participated in all public meetings to address comments and questions from local citizens; provided strategic regulatory advice to the client, oversaw the natural resource surveys for the siting and permitting of the project, and managed a 1.4-million dollar budget. Permits for the Rollins Wind Project were obtained in 2009, and the project expects to be operational in 2011.

Stetson Wind Project, Washington County, Maine

Senior Project Manager responsible for all siting and natural resource permitting for a 38-turbine, 57-megawatt wind project located along the Stetson Ridgeline. Permitting efforts included drafting and submitting Maine Department of Environmental Protection, U.S. Army Corps of Engineers, Land Use Regulation Commission, and local permit applications and answering all regulatory agency questions regarding these applications. He participated in all public meetings to address comments and questions from local citizens; provided strategic regulatory advice to the client; oversaw the extensive natural resource surveys necessary to acquire information for inclusion in the permit applications; and managed a budget in excess of 1.5 million. Following acquisition of the necessary permits, he oversaw resource demarcation (i.e., marking previously identified wetlands, vernal pools, and other significant natural resources) and provided environmental compliance support during the construction process. The Stetson Wind Project is fully operational.

Mr. Gravel is a Project Manager at Stantec responsible for coordinating ecological inventories and environmental resource evaluations, including wildlife surveys, avian and bat impact evaluations, and habitat studies. Mr. Gravel has most recently been involved in organizing and conducting large-scale natural resource investigations associated with wind power and transmission projects. He has provided permitting and expert testimonial support to several New England wind projects and managed Stantec's New England based wildlife biologists. His field biology experience has allowed him to conduct avian radar surveys, breeding-bird surveys, winter track surveys, bat surveys, raptor surveys, and natural community surveys in Maine, New Hampshire, Vermont, Pennsylvania, Ohio, West Virginia, Virginia, and New York. Mr. Gravel takes an innovative, solution oriented approach to survey design and implementation which has enabled Stantec to conduct ecological surveys in some of the Northeast's most remote and challenging locations.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager.
- Woodlot Alternatives, Inc. 2004-2007. Project Manager.
- New Hampshire Division of Forests and Lands. 2003. Field Research Technician.
- University of New Hampshire. 2002-2003. Research Lab Technician.
- University of New Hampshire. 2002. Field Research Assistant.

EDUCATION

BS, Wildlife Management, University of New Hampshire, Durham, New Hampshire, 2003

40-hour HAZWOPER Certified, OSHA, Topsham, Maine, 2009

REGISTRATIONS

Certified Wildlife Biologist, The Wildlife Society

PROJECT EXPERIENCE

Natural Resource Services

Georgia Mountain Community Wind Project, Milton, Vermont

As Project Manager for this proposed 4.5 megawatt wind project, Mr. Gravel coordinated a nocturnal migration study using X-band radar. He also provided support for the Section 248 process, including participation in meetings with Vermont Agency of Natural Resources biologists and development of a work scope for nocturnal radar surveys. Mr. Gravel prepared and submitted pre-filed testimony and responses to discovery requests, and he provided expert witness testimony during subsequent evidentiary hearings before the Vermont Public Service Board.

Adam J. Gravel

Project Manager, Certified Wildlife Biologist

Groton Wind Project, Grafton County, New Hampshire

Mr. Gravel is Project Manager for the proposed Groton Wind Project, which will consist of up to 25 2.0 MW turbines on the forested ridges of Tenney and Fletcher Mountains in the Sunapee Uplands of New Hampshire. He has coordinated numerous studies to address wildlife-related issues present in the vicinity of the project, including avian radar studies, acoustic bat surveys, and Breeding Bird Surveys (BBS) using the United States Fish and Wildlife Service BBS methods. Mr. Gravel worked with the New Hampshire Fish and Game Department to develop protocol and perform spring and fall raptor surveys, and collaborated with New Hampshire Audubon to conduct monitoring of peregrine falcons near the project area. He was involved in the drafting of an avian risk assessment that evaluated the potential impacts to birds and bats as a result of the project and provided expert witness testimony and support during the New Hampshire Site Evaluation Committee process.

Highland Wind Project, Somerset County, Maine

Highland is a proposed wind energy facility consisting of 48 turbines. Mr. Gravel acted as Technical Lead during the planning process and was responsible for wildlife studies including nocturnal radar migration surveys, acoustic bat surveys, raptor migration surveys, and rare threatened or endangered species surveys. He acted a liaison between the client and state and federal resource agencies to develop work plans and avoidance and minimization measures during the planning phase of the project. Mr. Gravel also assisted in generating permit application materials for the project.

Mars Hill Wind Farm, Aroostook County, Maine

Mars Hill is a 28 turbine wind energy facility situated on a low-elevation ridge in Aroostook County, Maine. Mr. Gravel acted as Technical Lead during the planning process and was responsible for avian and bat studies including nocturnal radar migration surveys, acoustic bat surveys, raptor migration surveys, and morning bird stopover surveys. He also assisted in the design of a post-construction avian and bat monitoring program.

Wind Farm Development Bird and Bat Surveys and Impact Studies, Mid-Atlantic, New England, Pennsylvania, Ohio, and New York

Mr. Gravel has managed and conducted pre-construction wildlife impact assessments at proposed wind energy projects at multiple sites in the Mid-Atlantic, New England, Pennsylvania, Ohio, West Virginia and New York. These assessments include habitat analyses, critical issues analyses, nocturnal migration surveys using marine radar, acoustic bat surveys, breeding bird surveys, raptor migration surveys, and ecological community characterizations. Mr. Gravel has effectively served as liaison between clients and regulatory agencies to ensure that studies and monitoring plans are in accordance with federal and state guidelines. Study results and determinations of risk have been provided to clients to assist with their project planning and permit applications in compliance with applicable local, state, and federal natural resource regulations. Mr. Gravel has also provided expert witness testimony for projects in Vermont and New Hampshire.

Hounsfield Wind Farm, Galloo Island, New York

As Project Manager for the nocturnal migration surveys conducted to determine site suitability for this proposed wind energy project located on Galloo Island in Lake Ontario. Mr. Gravel negotiated and designed a marine radar survey reflective of the unique location of this island site. Solutions to transport, maintenance, and site coverage were carefully determined in order to produce one of the most extensive migration surveys to date, successfully documenting avian abundance, flight patterns, and flight altitudes surrounding the site. Mr. Gravel and his project team were praised for their thoroughness and insights provided to state agencies.



Brett C. Hart, P.E.

Director of Engineering

Brett Hart joined the James W. Sewall Company in 1999 offering a strong background in site design and surveying. Mr. Hart brings to Sewall 15 years of experience in site development and permitting, traffic and transportation engineering, roadway and intersection design, stormwater management, and construction administration. Recently, Brett has been responsible for managing several wind turbine road and site design projects located within the State of Maine.

EDUCATION

B.S., Bio-Resource Engineering Technology, University of Maine, Orono
Traffic and Transportation Engineering Seminar, Northwestern University, Evanston Illinois

PROFESSIONAL LICENSES AND AFFILIATES

Licensed Professional Engineer, Maine #10658
Treasurer, American Council of Engineering Companies of Maine

RELEVANT EXPERIENCE

Oakfield Wind Project, Oakfield, Maine. Project Manager for civil road and site design for a 144-megawatt (MW) wind farm including 48 Vestas V112, 3-MW wind turbine generators. Responsible for value-engineering permit design to improve project constructability and reduce overall construction costs as well as oversight and development of final construction plans.

Blue Sky East LLC/Bull Hill, T16 MD, Maine. Project Manager for civil road and site design for a 34.2-megawatt (MW) wind farm including 19 Vestas V100 1.8-MW wind turbine generators. Responsible for oversight and development of permit and construction level civil design plans and associated Land Use Regulation Commission (LURC) permitting submittals. Review required by LURC and MaineDEP.

Rollins Wind Project, Lincoln, Lee, & Burlington, Maine. Project Manager for civil road and site design for a 60-megawatt (MW) wind farm including 40 General Electric 1.5-MW wind turbine generators. Responsible for value-engineering existing design to improve project constructability and reduce overall construction costs as well as oversight and development of final construction plans.

Hancock Wind LLC/T 22 MD, T16 MD, Maine. Project Manager for civil road and site design for a 54-megawatt (MW) wind farm including 18 Siemens 3.0-MW-113 wind turbine generators. Responsible for oversight and development of permit and construction level civil design plans and associated Maine Department of Environmental Protection (MaineDEP) permitting submittals. Review required by MaineDEP and LUPC.

Kibby Wind Power Project, Kibby & Skinner Townships, Maine. Project Manager for civil road and site design for the 132-megawatt (MW) wind farm including 44 Vestas V90 3.0-MW wind turbine generators. Initially responsible for value-engineering existing design to improve project constructability and reduce overall construction costs. Ultimately responsible for oversight and development of new design plans and Land Use Regulation Commission (LURC) permitting submittals for the Owner's revised turbine layout. Review required by LURC.

Record Hill Wind Project, Roxbury, Maine. Project Manager for civil road and site design for a proposed 50.6-megawatt (MW) wind farm including 22 Siemens SWT 2.3-MW wind turbine generators. Responsible for oversight and development of permit and construction level design plans and Maine Department of Environmental Protection (MaineDEP) permitting submittals. Review required by MaineDEP.

Passadumkeag Wind Project, Grand Falls TWP, Maine. Project Manager for civil road and site design for a proposed 42-megawatt (MW) wind farm including 14 Vestas V112 3.0-MW wind turbine generators. Responsible for oversight and development of project design plans and Maine Department of Environmental Protection (MaineDEP) permitting submittals. Review required by MaineDEP.

Highland Wind Project, Highland Plantation, Maine. Project Manager for civil road and site design for a proposed 128.6-megawatt (MW) wind farm including 48 wind turbine generators. Responsible for oversight and development of project design plans and Land Use Regulation Commission (LURC) permitting submittals. Review required by LURC and MaineDEP.

Bowers Wind, Carroll Plantation & Kossuth Township, Maine. Senior Review Consultant for civil road and site design for a proposed 48-megawatt (MW) wind farm including 16 Siemens SWT 3.0-MW-113 wind turbine generators. Responsible for oversight and development of permit and construction level design plans and Maine Department of Environmental Protection (MaineDEP) permitting submittals. Review required by MaineDEP.

Wind Component Transportation Route Study & Design. Project Manager responsible for identifying the transportation route and the civil design of the roadway/intersection improvements necessary for wind turbine component delivery for seven wind projects located in Maine. Projects included route analysis, civil design of roadway and intersection improvements for dozens of individual locations, obtaining MaineDOT Highway Opening Permits, as well as obtaining all required municipal approvals.

Traffic Impact Analysis. Performed numerous traffic impact analyses per municipal ordinance requirements for development projects located throughout the State of Maine.

Traffic Movement Permits. Drafted and contributed to numerous Maine Department of Transportation traffic movement permit application sections 1 through 6 and section 7 for projects located throughout the State of Maine.

Janine S. Murchison, P.E.

Project Manager, Engineering & Survey Division

Ms. Murchison joined James W. Sewall Company in 2007 with over 20 years of experience in the civil engineering field. Ms. Murchison has managed, designed, and monitored construction activities on a wide variety of projects including roadway, storm drain, water, and sewer systems. She also has practical experience with downtown revitalizations, airport improvements, pedestrian trails, landfill closures, boat landings, parking lots, site design, environmental permitting, and all aspects of construction services.

EDUCATION

B.S., Civil Engineering, University of Maine, 1986
M.S., Business, Husson College, Caribou, Maine 1995

PROFESSIONAL CERTIFICATIONS AND AFFILIATES

Registered Professional Engineer, Maine #7125
Trustee, Caribou Public Library
Trustee, Caribou Utilities District

RELEVANT EXPERIENCE

Passadumkeag Wind Project, Grand Falls, Summit, and Greenbush TWP, Maine. Managed the civil permitting design for a proposed 42-megawatt (MW) wind farm including 14 Vestas V112 3.0-MW wind turbine generators. Design included turbine micrositing, site layout, roadway plan and profile, stormwater management and erosion & sedimentation control plans. Assisted project team with civil site narratives and drawings for submission to the Maine Department of Environmental Protection for a Site Location of Development Act permit.

Bowers Mountain Wind Project, Penobscot and Washington Counties, Maine. Managed the civil design for a proposed wind farm which included up to 27 Siemens wind turbine generators. Design included turbine micrositing, site layout, roadway plan and profile, stormwater management and erosion & sedimentation control plans. Assisted project team with civil site narratives and drawings for development permit submittal to the Maine Land Use Regulation Commission.

Stetson II Wind Project, Washington County, Maine. Managed and prepared civil design for a 25MW wind farm including 17 GE 1.5MW wind turbine generators. Design included site layout, roadway plan and profile, stormwater management and erosion & sedimentation control plans. Assisted project team with civil site narratives and drawings for successful application of the Development Permit submission to the Maine Land Use Regulation Commission. Additionally, managed and prepared final design drawings and specifications for bidding and construction phases.

Twin Pine Camps, LLC Expansion Project, T1 R8 WELS, Maine: Managed and prepared successful application for an Amendment to Development Permit per Maine Land Use Regulation Commission (LURC) requirements. Assisted with site design of roads, driveways, and parking lots for the addition of nine (9) transient Cove Cabins and a library/sauna building. Coordinated the efforts of the owner, environmental, and architectural team members.

KTAADN Resorts, T1 R8 WELS, Maine: Currently in the final stages of managing and preparing a Development Permit application per Maine Land Use Regulation Commission (LURC) requirements for the 'Adventure Lodge' portion of the resort. Managed the site design development of the proposed access roads, the proposed Lodge, a hotel/restaurant/conference center, in addition to the proposed 21 transient Family Cabins adjacent to the Lodge. Coordinated the efforts of the owner, environmental, and architectural team members.

Downtown Master Plan, Presque Isle, Maine: Managed and prepared a 20-year master plan, with 5-year implementation strategies for the downtown's focus area. Conducted a downtown workshop to discuss strategies and priorities; managed land use analysis, branding recommendations, funding option recommendations, and conceptual designs; prepared transportation and parking analysis; updated goals, strategies, and action plans and broke information down based on the four-point approach for downtown development: organization, economic restructuring, design, and promotion. Presented the final report and design concepts at separate meetings with the downtown committee, the city council, and the planning board. Coordinated the efforts of the city and the downtown committee as well as the landscape architect and urban planner team members.

Prior to joining James W. Sewall Company, Ms. Murchison worked on numerous projects, primarily in the northern Maine area; several of which are outlined below:

Big Rock Ski Area; Mars Hill, Maine: Assisted with the preparation of a site location application for proposed improvements to include additional ski trail development, additional ski lift sites, base area building construction and renovations, and parking area expansions; managed design improvements to ski trail lighting system. Also prepared a Spill Prevention, Control, and Countermeasure (SPCC) Plan for the facility.

Allagash Road Reconstruction Project; Dickey, Maine: Designed and monitored the reconstruction of a portion of the Allagash Road (Rapid Road) between the Little Black River Bridge and the St. John River Bridge as a result of previous flooding. This project involved coordination with MDOT as both the Little Black River and St. John River Bridges were being reconstructed simultaneously with this project. The Maine DEP and the Army Corps of Engineers were also involved due to the road's proximity to the rivers and correlated flood plain wetland issues.

Presque Isle Boat Landing; Maine: Designed access road and boat launch on the Aroostook River; project included concrete launch planking, paved parking lot and access road; provided construction monitoring and construction services. Environmental permitting was also completed as required by the Maine DEP and the Maine Department of Inland Fisheries and Wildlife.

Caribou Downtown Revitalization Project, Phases I and II; Maine: Completed site topographical survey and managed Design Charrette for conceptual site and façade design master planning. Managed and prepared the preliminary and final designs of the Phase I Sweden Street portion of the project and the Phase II Downtown Mall portion of the project. Improvements included the removal of a 26' x 280' mall canopy and associated concrete sidewalks as well as the installation of sidewalk trees, historic lighting, decorative pole banners, and the removal and reuse of existing concrete sidewalk pavers. The project also included electrical coordination with Maine Public Service for the removal of an underground transformer and the subsequent replacement with an above-ground transformer, serving 32 businesses. Provided construction monitoring and administrative services for both phases of the project. Each portion was funded, in part, by CDBG.



John Phillips

Assistant Project Manager

Responsibilities

As an Assistant Project Manager, John Phillips assists with prequalification of subcontractors, selection of contractors, preparing project estimates, and developing baseline project schedules. John is involved with preconstruction design activities and with developing the Project Quality Execution Plan. During the execution of the project, John is directly involved with overseeing Project QC personnel and ensuring Quality activities are being completed according to the Quality Plan. John is also involved with tracking project costs, production rates, and schedule progress.

Experience

Reed & Reed, Inc.
June 2003 - Present

- Assistant Project Manager: Bull Hill Wind Project
- Quality Control Manager: Kingdom Community Wind Project, Record Hill Wind Project, Bull Hill Wind Project
- Project Engineer: Mars Hill Wind Farm, Stetson Wind Project, Rollins Wind Project
- Field Engineer: Beaver Ridge Wind Project, Augusta Third Bridge and Mack Point Cargo Pier. Traveling to various projects, to perform layout when needed. Assist Project Managers in preparing bid packages. Assist with Quality Control of concrete, mixing trucks on site, testing concrete, and keeping records during placements. QC Plan Administrator on placements at the Prospect-Verona Bridge Project.

Maine Department of Transportation
Summer 2002

- Transportation Aide, Multimodal Division. Inspected work on a railroad reconstruction project to ensure quality control and billing accuracy

Education

- Bachelor of Science in Construction Management, University of Maine at Orono, 2003

Licenses / Certifications / Affiliations / Special Training

- Engineer Intern # 5308
- ACI Concrete Field Testing Technician-Grade 1 #00073024
- ACI Concrete Plant Certification #91

James B. Fuller, PE, LEED AP Vice President



Education

Clarkson University, NY/ B.S./ Electrical Engineering/ 1992

Professional Registration

PE-AZ, AR, CA, CT, DC, DE, FL, GA, IL, IN, LA, MA, MD, ME, MI, NC, NJ, NY, OK, PA, RI, SC, TX, VA, VT, WI

LEED Accredited Professional

Institute of Electrical and Electronics Engineers

National Council of Examiners for Eng. & Survey

Mr. Fuller is CHA's Market Segment Manager for renewable generation projects. He has over 20 years of experience and has developed expertise in a wide array of electrical systems for utilities, wind, solar, industrial, municipal, commercial, and institutional facilities. His experience includes electrical system studies and design of power distribution, lighting, control and automation systems, fire alarm systems, emergency power generation systems, and telecommunications systems for various facilities. Representative project experience includes:

- **Reed & Reed, Inc.**, Bull Hill Wind Farm.
- **Reed & Reed, Inc.**, Arc Flash Study for Rollins Wind Power Project.
- **Northline Utilities**, Berkshire Wind Farm.
- **New York State Thruway Authority**, Buffalo Wind Turbine Installation Project.
- **Iberdrola**, Crescent Ridge II Wind Farm.
- **Brookfield Renewable Power**, Wind Feasibility Study: Western NY & PA.
- **Monroe County**, GRIA, Renewable Energy Wind and Solar Energy Study.
- **Iberdrola**, Lempster & Locust Ridge Wind Farms Electrical Design.
- **Enercon**, HMS Host Delaware Wind Turbine Feasibility Study
- **Noble Environmental Power**, Wind Farm Engineering Services.
- **Massachusetts Municipal Wholesale Electric Co.**, Preparation of ISO-NE NX-12D Form for the Berkshire Wind Power Project.
- **Iberdrola**, Providence Heights Wind Farm - MV Grounding Transformer for Substation.
- **Ulteig Engineers, Inc.**, Quality Wind Project, British Columbia Review Services for Electrical Collector System and Transmission Line.
- **Northline Utilities**, Stetson II Wind Power Project- WTG Grounding System Modeling.
- **Reed & Reed, Inc.**, Arc Flash Study for Stetson Wind Power Project.
- **Confidential Client**, Wind & Ballast Calculations.
- **Northline Utilities**, Wind Farm Collector System Value Engineering.
- **Confidential Client**, Wind Farm Engineering Services-Power Room - Building Services Design.

Kevin Fuller, P.Eng. Substation Electrical Engineer



Education

McMaster University, Hamilton,
Ontario/ B.A./ Electrical Engineering/
1989

Professional Registration

PEng-ON
APEGBC-BC

Kevin Fuller has over 20 years of design, construction and project management experience in low, medium and high voltage electrical systems required for substation, distribution system and generation projects. As part of this work, his responsibilities have included extensive system modeling activities and the design of numerous protection, metering, load management and SCADA systems. He has been involved in several wind farm projects, solar projects and other generation projects as lead engineer for substation and protection and controls design. Representative project experience includes:

- **Ulteig Engineers, Inc.**, Blackspring Ridge Wind Project in British Columbia.
- **Ulteig Engineers, Inc.**, Quality Wind Farm Design in Alberta, BC.
- **Reed & Reed, Inc.**, Bull Hill Wind Farm Project.
- **Northline Utilities**, Berkshire Wind Farm.
- **N-SCI Technologies, Inc.**, 130MW PS.
- **North Battleford Power LP**, Northland Power-NBEC Engineer Sup.
- **DiFazio Power & Electric**, York Energy Centre Generator Construction
- **Albany Medical Center Hospital**, Cogeneration Plant.
- **University of Rochester**, New Electrical Substation.
- **University of Massachusetts Building Authority**, Utility Supply Study.
- **Albany Medical Center Hospital**, 5/6.25 MVA Transformer Engineering.
- **University of Vermont**, Clean Energy Fund Renewable Energy Feasibility.
- **Iberdrola USA Management Corp.**, Columbus Substation Project.
- **Confidential Client**, Engineering Project.
- **University of Rochester**, Electrical Operation Diagram Drawing Up.
- **Algonquin Power Co.**, Gas Turbine Generator Restart Engineering Assistance.
- **Vale**, Miscellaneous Engineering Services.
- **University of Rochester**, New South Substation & Phase 1 Dist.
- **Northland Power Inc.**, SK Cogen Development.
- **University of Massachusetts Building Authority**, DPU Technical Conference.
- **DiFazio Power & Electric**, YEC Protection Coordination Review & Study.

Thomas J. Turo, PE Senior Electrical Engineer



Education

Syracuse University, NY/ B.S./ Electrical Engineering/ 1976

Rensselaer Polytechnic Institute, NY/
M.B.A./ 1984

Professional Registration

PE-NY

Mr. Turo is a Senior Electrical Engineer in CHA's Power and Energy Market. He has a wide range of experience in electrical engineering including utility systems, metering and alternative energy generation such as photovoltaics, wind generation and landfill gas generation. He is very knowledgeable of NEC and NESC codes and economic analysis of systems. Prior to joining CHA, Mr. Turo worked for more than 30 years with National Grid (formerly Niagara Mohawk) in a variety of positions, including distribution, transmission and metering. Representative project experience includes:

- **Reed & Reed, Inc.**, Arc Flash Study for Rollins Wind Power Project.
- **Northline Utilities**, Berkshire Wind Farm.
- **New York State Thruway Authority**, Buffalo Wind Turbine Installation Project.
- **Reed & Reed, Inc.**, Bull Hill Wind Farm.
- **Noble Environmental Power**, Commissioning Design, Various Wind Farm Sites.
- **Brookfield Renewable Power**, Wind Feasibility Study: Western NY & PA.
- **Iberdrola**, Lempster & Locust Ridge Wind Farms Electrical Design.
- **Confidential Client**, Preliminary Engineering Services on the Mariah Wind Power Project in Parmer County, TX.
- **Massachusetts Municipal Wholesale Electric Co.**, Preparation of ISO-NE NX-12D Form for the Berkshire Wind Power Project.
- **New York State Dept. of Correctional Services**, Wind Turbine Engineering Services.
- **Iberdrola**, Providence Heights Wind Farm - MV Grounding Transformer for Substation.
- **Reed & Reed, Inc.**, Rollins Wind Project.
- **Northline Utilities**, Stetson II Wind Power Project- WTG Grounding System Modeling.
- **Reed & Reed, Inc.**, Arc Flash Study for Stetson Wind Power Project.
- **Northline Utilities**, Wind Farm Collector System Value Engineering, Northern NY State.
- **Confidential Client**, Wind Farm Engineering Services.
- **West Point Academy**, Wind Power Feasibility Study.
- **Stratton Air National Guard Base**, Wind Turbine Feasibility Study.

Keith Blanchard
72 Main Street
Bangor, Maine 04401
Kblanchard@wemapit.com
207-947-0019

PROFILE

- Professional Land Surveyor since 2006.
- 15 years of land surveying experience 13 of those years as Survey Crew Chief.
- Employed full time with Plisga & Day Land Surveyors since 1999.
- Worked in the field of construction since 1994
- U.S Navy active duty 1992-1994

EDUCATION

Land Surveyor in Training (University of Maine required classes) - 2003

Associates degree - Eastern Maine Community College 1999

2 year Diploma - Welding technology - Eastern Maine Community College 1996

WORK RELATED EXPERIENCE

- 5 years of experience in the surveying of wind farm projects.
- Survey Manager of the Blue Sky East and Hancock Wind projects in Township 16MD, Township 22MD and Osborn.
- Boundary analysis and retracement
- Proficient in static and kinematic GPS methods.
- Proficient in ALTA surveys.
- Proficient in the use of total stations and data collectors
- 16 years of experience using AutoCad.
- Subdivisions of land in local municipalities and LUPC.

RESUMES

Aerial Survey & Photo, Inc.

F. Roderick Stevens, PRESIDENT; B.S./1981 Mathematics and Geography. Mr. Stevens, "Rod" has over 30 years experience in all phases of photogrammetry, municipal mapping and aerial photography. He began his career in 1978 as a cartographer for S.L.F., Inc. working on tax maps. In 1981, he joined Aerial Survey & Photo, Inc. (ASP). His duties included interpreting aerial photography, plotting property lines, compiling information from deed research and drafting final ink drawings. In 1986, he became vice-president of the mapping division for ASP. Additional duties included estimates for photogrammetric projects, layout of control requirements and flight lines and preparation and negotiating of proposals. Throughout his career he has combined his depth of knowledge with proven leadership. He has been project manager of over 60 municipal projects while employed at ASP.

Rod is responsible for all office operations at ASP, overseeing the photography projects, photogrammetric projects, tax mapping projects, and financial operations. This includes the planning and organization of the work, coordinating the processing and printing of the aerial film and digital data to secure efficient and timely delivery to the client. Also, Rod is responsible for business development and has participated in various conferences and seminars. He is a member of the American Society of Photogrammetry and Remote Sensing.

Paul L.J.Belanger, Photogrammetric & Production Manager, 1992 Mechanical Engineering Technology, University of Maine. Mr. Belanger, "Paul" began his career with Aerial Survey & Photo, Inc. (ASP) in 1995. Since joining ASP he has gained experience in digital mapping and all phases of photogrammetric mapping, including planimetric base mapping, contour and DEM/DTM compilation and orthophotography. He has worked as a stereoplotter operator, trainer and supervisor on analog, analytical and digital stereo compilation instruments. Paul also has experience with all phases of photographic reproduction and image scanning. He is experienced with AutoCAD, CADMAP, DAT/EM Summit Evolution and Capture, Terramodel, Adobe Photoshop INPHO OrthoVista and other softwares. Paul is responsible for production of all photogrammetric projects from flight planning to delivery.

Douglas W. Allen, CAD Operator B.S/1979 FORESTRY. Mr. Allen, "Doug" has over 30 years experience employed at Aerial Survey & Photo, Inc. (ASP). When he first joined ASP, Doug spent 2 years working as a photo lab technician. In 1987, he began working on digital mapping with AutoCAD mapping software. Since 1987 he has been responsible for editing all mapping projects.

Robert D. O'Neal, CCM, INCE Bd. Cert.

Principal

EDUCATION

M.S., Atmospheric Science, Colorado State University

B.A., Engineering Science, Dartmouth College

PROFESSIONAL REGISTRATION

Certified Consulting Meteorologist, #578

INCE Board Certified

PROFESSIONAL MEMBERSHIPS

American Meteorological Society

Air and Waste Management Association

Institute of Noise Control Engineers (INCE)

Acoustical Society of America

A Principal of the firm, Mr. O'Neal is a Certified Consulting Meteorologist with over 25 years of experience in the areas of community noise impact assessments, meteorological data collection and analyses, and air quality modeling. Mr. O'Neal's noise impact evaluation experience includes design and implementation of sound level measurement programs, modeling of future impacts, conceptual mitigation analyses, compliance testing, and expert witness testimony.

Rob has performed noise measurement and modeling assessments for wind energy and fossil fuel power generation facilities in the Northeast, the Mid-Atlantic region, the Midwest, and the Southwestern U.S. Other industries served include hard rock quarries, aggregate handling, asphalt and concrete plants, C&D processing facilities, landfills, real estate development, and mobile sources.

He has also provided expert witness testimony on noise impact studies and air pollution modeling in front of local boards, courts of law, and adjudicatory hearings. His air quality background involves applying air quality dispersion models for regulatory permitting applications, as well as for general air quality impact evaluations. He has experience with the CALMET/CALPUFF modeling system used to evaluate visibility and acid deposition impacts in Class I areas.

Mr. O'Neal is active on siting and environmental committees associated with the wind and materials handling industries. He has presented the results of wind turbine low frequency noise and infrasound research at major conferences and peer-reviewed scientific journals. In addition, Rob has been an invited speaker at conferences on a variety of noise and meteorological topics.

PROFESSIONAL EXPERIENCE

Wind Energy Projects

◆ *Iberdrola Renewables – Groton Wind, Groton, NH.* Mr. O'Neal developed an extensive sound level measurement and modeling program for a proposed 48-megawatt (MW) wind farm. Concurrent sound level data and meteorological data were collected and analyzed and the results were presented as expert witness testimony at community open houses and during the Site Evaluation Committee public hearings.

◆ *FPL Energy – Horse Hollow Wind Energy Center, Taylor County, TX.* Mr. O'Neal developed and executed an extensive sound level measurement program for a 735 MW wind farm. Concurrent sound level data, meteorological data, and wind turbine power output data were collected and analyzed and the results were used in legal proceedings as part of expert witness testimony in the case.

Linear Siting and Transmission Projects

◆ *NSTAR 345 kV Transmission Reliability Project, Stoughton, Canton, Milton, Boston, MA.* Mr. O'Neal was responsible for the noise impact assessment for this 18-mile multi-circuit underground 345 kV project. Construction noise impacts along the route and operational noise from substations in Hyde Park and South Boston were analyzed and expert testimony before the EFSB was provided.

◆ *Weaver's Cove Energy, Fall River, MA.* This project proposed a new liquefied natural gas (LNG) import terminal and natural gas pipeline to be located on the Taunton River. Mr. O'Neal managed the implementation of an extensive existing condition sound level measurement program including long-term continuous and short-term measurements. Expected future sound level impacts from operation of the LNG import terminal were calculated and community sound level impacts from associated dredging were also evaluated. The Federal Energy Regulatory Commission Resource Report 9 section on noise impacts was prepared.

Industrial/Commercial Projects

◆ *General Electric Company, Hudson River PCBs Superfund Site, Hudson River, NY.* Mr. O'Neal prepared the Noise Impact Assessment for dredging, processing, and construction activities associated with Phase 1 of the Final Design Report. Source-specific sound level measurements of key sources were made and sound level monitoring was done during Phase 1 dredging and processing of the sediment to determine compliance with the Quality of Life Performance Standards.

Richard M. Lampeter, INCE

Senior Consultant, Acoustics

EDUCATION

B.S., Environmental Science, Lyndon State College

PROFESSIONAL MEMBERSHIPS

Institute of Noise Control Engineering (INCE)

Air & Waste Management Association

Mr. Lampeter is a senior consultant with over 10 years of experience in conducting community sound level impact assessments. His areas of expertise include the measurement of ambient sound levels, modeling sound levels from proposed developments, evaluation of conceptual mitigation, and compliance sound level measurements. Mr. Lampeter has conducted impact assessments for power generating facilities, commercial developments, industrial facilities, and transfer stations. Richard's understanding of acoustical standards and modeling software has allowed him to provide accurate and reliable modeling results to developers and communities.

Mr. Lampeter utilizes his diverse skill set as he serves in a variety of rolls on projects, ranging from project manager, to modeler, to field scientist. Richard is adept at using Larson Davis, Norsonic, RION, and CEL sound level meters and various modeling software packages including, Cadna/A and WindPRO.

Since 2004, Mr. Lampeter has been involved in wind energy projects. In addition to performing numerous sound level impact assessments for wind energy facilities, Mr. Lampeter has conducted shadow flicker analyses for wind energy projects from Massachusetts to California. Mr. Lampeter routinely presents the key aspects of impact assessments to local boards and has provided expert testimony on shadow flicker.

Mr. Lampeter also has experience in air quality modeling and meteorological monitoring. Richard has used a range of air dispersion models including CAL3QHCR, AERMOD, and CALPUFF and has displayed expertise in working with HOBO and NovaLynx portable weather stations.

Mr. Lampeter has co-authored several papers ranging in topics from wind energy to metal shredders, one of which appeared in a peer-reviewed journal. Mr. Lampeter has spoken at CanWEA's annual conference on the topic of low frequency noise from wind turbines and presented shadow flicker guidance and a regulatory update in a New England Wind Energy Education Project webinar.

PROFESSIONAL EXPERIENCE***Noise Impact Assessment – Power Projects***

◆ *NextEra Energy Resources – Tuscola Bay Wind Energy Center, Tuscola, Bay, & Saginaw Counties, MI.* Managed a sound level impact assessment project for a proposed 120 megawatt (MW) wind power generation facility composed of 75 wind turbines. Modeling was performed in order to demonstrate compliance with the sound level limits in each community. During multiple public hearings, Mr. Lampeter responded to questions and comments. Following construction, operational sound levels were measured as required by the township's ordinance.

◆ *NextEra Energy Resources – Horse Hollow Wind Energy Center, Taylor County, TX.* Assisted in the development and execution of multiple sound level measurement programs for the 735 MW wind farm which at the time of its in-service date it was the world's largest wind farm. Analyzed sound level data in conjunction with power output data provided by NextEra Energy Resources and assisted in the preparation for legal proceedings.

Shadow Flicker

◆ *Iberdrola Renewables – Desert Wind, Perquimans and Pasquotank Counties, NC.* Managed a shadow flicker impact assessment for a proposed wind power generation facility to be located in North Carolina. Shadow flicker from the 150 Gamesa G97 2.0 MW wind turbines was calculated. Separate reports were prepared for each county. Gave sworn testimony to the Board of Commissioners in each county.

◆ *State of New Hampshire, Concord, NH.* Conducted an independent review of the shadow flicker analysis for the proposed 24 MW Lempster Mountain Wind Power Project in Lempster, NH. Calculated the duration of shadow flicker using WindPRO software and compared the results to the developer's analysis.

PUBLICATIONS

"Low frequency sound and infrasound from wind turbines." Noise Control Engineering Journal, Institute of Noise Control Engineering, Volume 59, Number 2, March-April 2011. O'Neal, R.D., Hellweg, Jr., R.D. and R. M. Lampeter.

PRESENTATIONS

"Shadow Flicker Regulations and Guidance: New England and Beyond." New England Wind Energy Education Project Webinar, February 10, 2011.

TERRENCE J. DEWAN, ASLA
Principal

Terry DeWan has over 35 years of professional experience in landscape architecture, visual resource assessment, site planning, design guidelines, 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 community planning, visual impacts, recreation planning, water access, and highway corridor redevelopment.

Maine Licensed Landscape Architect #6

EDUCATION

State University of New York, School of Environmental Sciences and Forestry, cum laude

VISTA Training, University of Colorado

Visual Assessment Procedures, University of Southern Maine

PROFESSIONAL EMPLOYMENT

1988-Present	TJD&A, Yarmouth, ME Principal
1977-1988	Mitchell-DeWan Associates Portland, ME Partner
1976-1977	Center for Natural Areas South Gardiner, Maine Landscape Architect
1973-1976	Moriece and Gary of Maine Portland, ME Landscape Architect
1971-1973	The Architects Workshop Philadelphia, PA VISTA/Landscape Architect
1969-1970	Rocky Mountain Development Council, Helena, Montana VISTA Volunteer
1968-1969	Peter G. Rolland and Associates, Rye, NY

PROFESSIONAL AFFILIATIONS

Maine State Board for Licensure of Architects, Landscape Architects, and Interior Designers, 1986-present, Secretary
 Public Art Committee, Maine Arts Commission
 American Society of Landscape Architects
 Boston Society of Landscape Architects
 LAAB: Landscape Architectural Accreditation Board, CLARB representative

SELECTED PROJECT EXPERIENCE

VISUAL IMPACT ASSESSMENT

Spruce Mountain Wind Project, Patriot Renewables, Woodstock, ME.

Prepared Visual Impact Assessment for proposed 11 turbine wind project.

Saddleback Mountain Wind Project, Patriot Renewables, Carthage, ME. Visual Impact Assessment for 19 turbine wind project.

Maine Power Reliability Program. Visual Impact Assessment (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, Evergreen Wind V, LLC, Washington County, ME. Prepared Visual Impact Assessment including 3D Modeling and photosimulations for a 28 turbine wind project and 17 turbine expansion.

Pinnacle Wind Project and Liberty Gap Wind Project, West Virginia. Visual reports in support of state permitting applications for US Wind Force.

Cape Wind Energy Project, Nantucket Sound, MA. Peer review of Draft Environmental Impact Statement prepared by MMS.

Maine Governor's Task Force on Wind Power Development. Consultant to Task Force on scenic issues.

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. Hudson River Heritage.

St. Lawrence Cement, Hudson, NY
 Evaluation of visual impacts of proposed cement plan in a historic Hudson Valley community for Scenic Hudson, The Olana Partnership, and Hudson Valley Preservation.

Black Nubble Wind Farm, Redington Township, ME. VIA for 18 wind turbine project near Sugarloaf and Saddleback Mountains for Maine Mountain Power.

Scenic Inventory, Mainland Sites of Penobscot Bay. ME State Planning Office Critical Areas Program.

Scenic Inventory, Islesboro, North Haven, Vinalhaven, Maine. ME State Planning Office Critical Areas Program.

Downeast LNG, Robbinston, ME. VIA for LNG terminal. Downeast LNG, Inc.

Maine DEP: West Old Town Landfill. Peer review of VIA for an expanded landfill.

MaineDOT: Bath-Woolwich Bridge. Assessment of potential visual impacts to the historic U.S. Custom House in Bath.

Bath Iron Works, Land Level Transfer Facility, Bath, Maine. VIA and mitigation plan for BIW's \$250M modernization plan.

Bangor Hydro-Electric. 345 kV Transmission line from Orrington, ME to New Brunswick.

New England Wind Energy Station, Boundary Mountains of Western Maine. Kenetech Windpower, Livermore, California.

Stiles Road Quarry, Torrington, CT. VIA of a proposed quarry expansion in an historic community in southern Connecticut.

Recreation Plan, Visual Assessment, and Relocation Study for Golden Road, 'Big A' Hydroelectric Facility, Great Northern Paper, Millinocket, Maine.

Recreation, Land Use, and Visual components for Relicensing of Ripogenus Dam and Penobscot Mills, Great Northern Paper, Millinocket.
AES-Harriman Cove Co-generation Project, Bucksport, Maine. Visual assessment of a coal-fired power plant on Penobscot River.

Route 27 Scenic Byway Corridor Management Plan. MDOT. Long-term plan for 45 miles of Route 27 between Kingfield and Canada.

Preliminary Facilities and Interpretive Media Plan, Kancamagus Scenic Byway. White Mountain National Forest. Demonstration forest, hiking trails, interpretive exhibits, overlooks, outdoor amphitheater.

SELECTED PUBLICATIONS

DeWan, Terrence J. **Scenic Assessment Handbook.** Maine State Planning Office. 2008.

DeWan, Terrence J. **A Vision for the Moosehead Lake Region.** Natural Resources Council of Maine. 2006.

DeWan, Terrence J., and Brian Kent. **The Great American Neighborhood, A Guide to Livable Design.** Maine State Planning Office. 2004.

DeWan, Terrence, J. **Scenic Inventory, Islesboro, North Haven, Vinalhaven, Maine.** ME State Planning Office Critical Areas Program. 1992.

DeWan, Terrence, J., and Don Naetzer. **Scenic Inventory, Mainland Sites of Penobscot Bay.** ME SPO. 1990.

SELECTED PRESENTATIONS

Scenic Inventory Training. Maine State Planning Office. 2009.

Halifax Regional Municipality Planning Presentation. 2008.

Photoshop as a Design Tool. American Society of Landscape Architects Annual Meeting. Portland, OR. 1998.

Chattahoochee Riverway Plan. American Society of Landscape Architects Meeting. Atlanta. 1997.

Los Angeles River Plan. American Society of Landscape Architects Annual Meeting. Los Angeles. 1996.

Cleveland Computer Design Charrette. American Society of Landscape Architects Annual Meeting. Cleveland. 1995.

Scenic Assessments Methods along the Maine Coast. 20th Annual Natural Areas Conference, Orono, Maine. 1993. Moderator.

Visual Assessment Standards and Technology Conference: Case Studies in Visual Assessment Techniques. SUNY, Syracuse, New York 1992.

Scenic Inventories, Maine Coast Scenic Workshop, Maine State Planning Office, Bar Harbor 1990.

AWARDS AND DISTINCTIONS

Council of Landscape Architects Registration Boards. Presidents Awards

Boston Society of Landscape Architects Excellence Award for outstanding professional practitioner
Merit Award for Planning: 'From the River to the Bay' A Parks, Recreation, and Open Space Plan for Brunswick, Maine
Merit Award for Landscape Analysis and Planning – Park Planning: Coastal Maine Botanical Gardens, with EDAW

North American / United Kingdom Stewardship Exchange, Exmoor National Park, North Devon, England

American Planning Association, NNE Chapter: Outstanding project of the year award:
Kancamagus Scenic Byway Facilities and Interpretive Plan (with White Mountain National Forest).
Knightville-Mill Creek Vision Plan, South Portland
A Guide to Livable Design

American Society of Landscape Architects Merit Award for Communications: Los Angeles River Project and Chattahoochee River Greenway, Atlanta

AMY BELL SEGAL, ASLA
Associate, Landscape Architect

Amy's twenty one years of experience include visual resource assessment, computer-generated modeling and photosimulations, recreation and trail planning, nature based playspaces, urban agriculture, site planning for residential, commercial, and industrial properties, and permitting and construction management.

Maine Licensed Landscape Architect #2265

EDUCATION

BSLA Cornell University
 Denmark International Study Program

SPECIAL TRAINING

- MEDEP Low Impact Development Stormwater BMP training
- Courses in ADA standards, Complete Streets, Sustainable Sites (ASLA LEED equiv)

PROFESSIONAL EMPLOYMENT

1992-Present	TJD&A, Yarmouth, ME Landscape Architect Associate/Project Manager
1990-Summer	Roger Trancik, FASLA, Ithaca, NY Landscape Design, Graphics
1988-1992	Bell & Spina Architects Camillus, NY Landscape Design

SELECTED PROJECT EXPERIENCE
Terrence J. DeWan & Associates

Bull Hill and Hancock Wind Projects, Blue Sky East LLC, Hancock County, ME. Visual Impact Assessment for adjacent wind projects with total of 37 turbines.

Spruce Mountain Wind Project, Patriot Renewables, Woodstock, ME.
 Prepared Visual Impact Assessment for proposed 11 turbine wind project.

Saddleback Mountain Wind Project, Patriot Renewables, Carthage, ME. Visual Impact Assessment for 12 turbine wind project.

Maine Power Reliability Program. Visual Impact Assessment for 352 miles of new 115 kV and 345 kV transmission line corridor system upgrades in 82 Maine towns, for Central Maine Power.

Lempster Mountain Wind Power Project, Community Energy, Lempster, NH.
 Photosimulations for a 12 turbine wind project.

Stetson I & II Wind Project, Evergreen Wind V, LLC, Washington County, ME. Visual Impact Assessment including 3D Modeling and photosimulations for a 38 turbine wind project.

Jamer Materials, Ltd. Bayside, New Brunswick, Canada. Visual Assessment for proposed quarry expansion and conceptual design of Eco-Industrial Park.

Record Hill Wind Project, Roxbury, ME. Visual Impact Assessment for a 22 turbine wind project submitted to MEDEP.

Downeast LNG, Robbinston, ME. Visual Impact Assessment for LNG terminal submitted to Maine DEP for Downeast LNG, Inc.

Methuen Compressor Station, Duke Energy, Methuen, MA. Created 3D Model and photosimulations to illustrate visibility of proposed project and possible buffering options.

Public Service Company of New Hampshire Northern Wood Power Project Portsmouth, NH. Assisted with local permitting for proposed wood fired boiler and associated improvements. Developed photosimulations of facility and screening options.

Black Nubble Wind Project, Redington Township, ME. Visual Impact Assessment and photosimulations of proposed 18 wind turbines as seen from various viewpoints, including the Appalachian Trail, for Maine Mountain Power.

Richmond Compressor Station, Maritimes and Northeast Pipeline, Richmond, ME.
 Photosimulations and buffer plan for the Pitts Center Road compressor station.

Bypass Visualizations, Wiscasset, ME. MEDOT. Photosimulations of proposed Route One bypass options. Images used for evaluation of options, public meetings, and website.

Bath Iron Works, Naval Security Planning, Bath, ME. New security access, fencing and parking lot improvements.

Bath Iron Works, Land Level Transfer Facility, Bath, ME. Visual Impact Assessment and photosimulations for BIW's new shipbuilding facility on the Kennebec River.

Washington Street Plantings, Bath, ME. Bath Iron Works was required for LLTF permitting with City and State to develop site specific buffer and enhancement plan for Washington Street.

Dragon Products, Thomaston, ME.

A landscape enhancement plan for a one-mile stretch of coastal Route One adjacent to a large open pit mine.

Saddleback Mountain, Rangeley, ME. National Park Service. Photosimulations of ski area expansion plans to show potential impact on Appalachian Trail.

New England Wind Energy Station, Boundary Mountains, ME. Kennetech Windpower, Livermore, CA. Visual Impact Assessment and photosimulations for an industrial scale wind energy facility planned for 250,000 acres in western Maine.

Sawyer Environmental Landfill, Hampden, ME.

Photosimulations of landscape treatment and landform adjustments for the expansion of a highly visible landfill adjacent to the Maine Turnpike.

Liquefied Natural Gas Facility, Wells, ME. Visual impact assessment and photosimulations of a proposed LNG tank in rural Wells.

Visual Resource Assessment, Rt. 27

Carrabassett Valley, ME, MEDOT. Visual resource assessment and improvements to one of Maine's Scenic Byways.

Stiles Road Quarry Expansion, O&G Industries, Woodbury, CT. Photosimulations showing the visual impact of a major quarry expansion adjacent to an historic New England village.

Hallowell Interpretive Turnout, MEDOT. Lead design team in production of construction documents for the first turnout to be installed along the Kennebec Chaudière Corridor. Site includes interpretive panels, railing, seating and paving, and landscaping.

Kennebec Chaudière International Corridor, Skowhegan to Popham, ME. MEDOT Site plans for 10 interpretive turnouts along the lower 75 miles of the corridor.

Commercial St. Extension Improvement Plan Bath, ME. Master plan for multimodal development along the Kennebec River including a 1/2 acre riverfront park.

Kancamagus Scenic Byway, White Mountain National Forest, Conway to Lincoln, NH. Preliminary Facilities and Interpretive Media Plan.

Redesigning Cleveland Digitally, Cleveland, OH. Site planning and computer illustrations for a former mill site in Cleveland. Presented at the 1995 Annual Meeting of ASLA.

Los Angeles River Study, Los Angeles, CA. A study of aesthetic treatments for the 50-mile concrete channel lining the Los Angeles River. Illustrations of murals, parks, walkways, and gardens. Presented at the Computer Design Charrette at the 1996 ASLA Annual Meeting.

Chattahoochee Riverway, Atlanta, GA.

A Landscape Architecture Foundation-sponsored project to improve public access along a 12-mile river corridor and reclaim adjacent industrial sites for recreation and open space.

AWARDS AND DISTINCTIONS

*American Society of Landscape Architects
Merit Award for Communications
Los Angeles River Study.*

*American Society of Landscape Architects
Merit Award for Communications
Chattahoochee River Greenway, Atlanta, GA.*

*National Association for Interpretation
Interpretive Media Award
Great Bay National Estuarine Research Reserve,
Sandy Point, NH.*

PROFESSIONAL ORGANIZATIONS

Executive Board of the Maine Section of the Boston Society of Landscape Architects, 2002- present

PRESENTATIONS

Co-Presenter, *Using Photoshop as a Design Tool*, ASLA, Portland, OR 1998

Co-presenter at LABASH, *Creating Visualizations with Computers*, University of West Virginia, 1998

Co-Presenter, *Creating Visualizations with Computers*, AEC Conference, Philadelphia, 1997

Brian Robertson

Education

Ph.D. University of Utah	Anthropology	1999
B.S. University of Utah	Anthropology	1991

Employment

Market Decisions, LLC	Research Director	2000-present
Valley Research, Inc.	VP, Director of Research	1995-1999
University of Utah Survey Research Center	Project Manager	1986-1996

Experience

Dr. Robertson has over 25 years of research experience, with hands on experience managing survey research centers, designing surveys, conducting statistical analyses and reporting the results. Dr. Robertson was employed at the University of Utah Survey Research Center for ten years, initially as a research analyst then as a project manager and finally as acting manager. His private research experience includes five years as Vice President and Director of Research at Utah's largest research company, Valley Research. Dr. Robertson has helped design and manage over 200 studies during the past five years, including large-scale mail and telephone surveys.

Dr. Robertson has experience in a full range of marketing and public policy research areas. His areas of expertise include overall research design, survey design, sampling methodology, survey project management, statistical analysis of data, preparation of reports based on collected data, and development of policy goals and objectives.

Dr. Robertson has a Ph.D. in Anthropology and a Bachelor of Science from the University of Utah. He is a member of the Market Research Association, and the American Association for Public Opinion Research (AAPOR). He is a former president of the New England Chapter of the American Association for Public Opinion Research.

Computer Skills

Analytical Software: SPSS, SAS, BMDP, SUDAAN

Expertise in CATI/CAPI programming: Ci3/CATI and CASES.

Sampling Software: GENESYS Sampling Systems Sample Generation Software

Professional Affiliations

AAPOR (American Association for Public Opinion Research)

NEAAPOR (New England Chapter, American Association for Public Opinion Research)

MRA (Market Research Association)



R. Scott Bodwell, P.E.

Principal

Bodwell EnviroAcoustics, LLC

Summary

R. Scott Bodwell, P.E. is the founder and principal of Bodwell EnviroAcoustics, LLC, an engineering consulting firm that services the energy and industrial sector and specializes in Environmental Acoustics.

Professional Experience

Mr. Bodwell has over 25 years of experience in environmental assessments, project engineering and design, and regulatory permitting for major utility, energy production, and transmission projects in the northeast United States.

As a consulting engineer in Maine since 1987, Mr. Bodwell has conducted acoustic studies on over 300 industrial development projects and is recognized as a leading authority on Environmental Acoustics in Maine. Mr. Bodwell was the lead acoustical engineer on the first two utility-scale wind energy facilities in Maine at Stetson Mountain in Washington County and Mars Hill Wind Farm in Aroostook County. He also conducted the acoustic study for the wind turbine installation at University of Maine at Presque Isle.

Mr. Bodwell has worked closely with the Maine Department of Environmental Protection and Maine Land Use Regulation Commission and independent acoustical consultants to develop and refine procedures and methods for assessment and measurement of sound from wind turbines. Specialized measurement techniques were developed based on several hundred hours of sound testing for operating wind turbines in Maine and are considered to be some of the most advanced and thorough testing procedures in the United States.

Mr. Bodwell has provided expert testimony at state hearings and municipal reviews in successful support of major industrial and energy projects in Maine including Stetson Wind Project, Rollins Wind Project, Maritimes & Northeast Pipeline, Bath Iron Works, Maine Medical Center, Stratton Power Project, St. Joseph's College of Maine, and Waste Management of Maine. He also developed and conducted an Environmental Acoustics seminar for project managers and technical staff at the Maine Department of Environmental Protection.

Mr. Bodwell has conducted peer reviews of environmental assessments by others for the Maine DEP, the Saco River Corridor Commission and several municipalities in Maine, and assisted municipalities with the development of noise control ordinances.

Education and Credentials

Mr. Bodwell is an Engineering Sciences graduate of Dartmouth College and has completed numerous graduate and continuing education courses in engineering and acoustics.

Mr. Bodwell has been a licensed professional engineer in Maine since 1994.

RICHARD T. WILL, PH.D.

EDUCATION

Ph.D., Anthropology, University of Alberta, 1985
M.S., Quaternary Sciences, University of Maine, 1981
B.A., Anthropology, University of Arizona, 1976

PROFESSIONAL REGISTRATIONS

Register of Professional Archaeologists, 1999
List of Approved Archaeologists, Maine, 1987
List of Approved Archaeologists, New Hampshire, 2000
List of Approved Archaeologists, Vermont, 2005

AREAS OF EXPERTISE

Dr. Will has over 20 years of experience encompassing:

- Business Management
- Large and Small Scale Archaeological Surveys
- Archaeological Site Data Recovery
- Cultural Resources Management Plans
- Native American Consultation
- Lithic and Faunal Analysis
- Report Writing and Editing
- Public Education

REPRESENTATIVE EXPERIENCE

Dr. Will has been a professional archaeologist since earning his Doctorate in Anthropology in 1985. Since then, he has been employed as a social science researcher in criminology and archaeology. Dr. Will is an Adjunct Professor of Quaternary Sciences at the University of Maine where he occasionally teaches classes and advises graduate students. In 1989, he founded a small business to serve Maine companies with their cultural resources management needs as required by state law and Section 106 of the National Historic Preservation Act. Dr. Will had been the project director on numerous small and large-scale cultural resources management projects that have involved cost-effective and timely solutions to sometimes-complex issues ranging from survey design to Native American consultation. Currently, Dr. Will is Operations Manager for the TRC Northeast sector of cultural resources management.

Business Management (CEO, 1989–2003)

Archaeological Research Consultants, Inc. was incorporated in Maine in 1989 to provide cultural resources management consulting to the business community. It additionally competed for and won grants to undertake scientific research and publication in archaeology. Its client base grew from a few local businesses to include Bangor Hydro, Bowater International, Central Maine Power, Florida Power and Light, International Paper, and Pennsylvania Power and Light to name but a few. TRC acquired Archaeological Research Consultants in 2003.

Large and Small Scale Archaeological Surveys

Dr. Will is the principal investigator on numerous projects, including linear transmission and hydropower that require cultural resources management studies.

- **Cultural Resources Management of the Federal Relicensing of the Niagara Power Project, Western NY (Principal Investigator: 2005–2008).** This multiyear project was initiated by the New York Power Authority. Dr. Will directed and completed all phases of cultural resources management investigations on this project including Native American consultation.
- **Phase IA and IB Archaeological Studies of the St. Lawrence Wind Farm Project, Western NY (Principal Investigator: 2006–2007).** Dr. Will successfully conducted consultation with the New York Office of Parks, Recreation and Historic Preservation to define and implement a scope of work to identify and assess archaeological sites within this large proposed wind farm undertaken by Acciona Energy, NA
- **Cultural Resources Management Studies of the Maine Portion of the Maritimes & Northeast Natural Gas Pipeline Project (Project Director and Principal Investigator: 1998–2000).** This project was completed for Maritimes and Northeast, LLC. It involved archaeological sampling and survey of approximately 350 miles of natural gas pipeline corridor beginning at the St Croix River (Maine Canadian boundary) and ending at the Piscataqua River (Maine-New Hampshire boundary). More than 40 personnel were involved in this multiyear project, which completed on time and within budget.
- **Cultural Resources Management Studies for the Federal Licensing of the Moosehead Lake Outlet Dams (FERC no. 2671) (Project Director and Principal Investigator: 1992–2004).** This multi-year project was initiated for Central Maine Power Company and is being completed for FPLE Maine Hydro. It began in 1992 with survey of more than 200 prehistoric archaeological sites along 350 miles of shoreline. Additional fieldwork has involved data recovery on eight sites eligible for listing in the National Register of Historic Places.

Archaeological Site Data Recovery

Dr. Will has been principal investigator on more than a dozen large-scale data recovery projects involving more than 700 square meters of excavation, analysis, and reporting. Many of these data recovery studies have been the basis of research articles in a variety of professional journals.

- **Phase III Study of the Clark I Site (Project Director and Principal Investigator: 2000).** This data recovery project was completed for FPLE Maine Hydro under a contract originally awarded by Central Maine Power Company. Excavation in river alluvium in Norridgewock, Maine proceeded to more than 1.5 meters below the ground surface and yielded a sequence of human occupations spanning 6,000 years. Results of this study were published in the *Archaeology of Eastern North America* in 2002.
- **Phase III Study of the Chan Site (Project Director and Principal Investigator: 1996).** This project was completed for the Maine Public Service Company in Caribou, Maine. The site yielded a variety of data from a geographic area of Maine that is not well known. A report of the project was published in the *Bulletin of the Maine Archaeological Society* in 1997.
- **Phase III Study of the Bombazee West Site (Project Director and Principal Investigator: 2000).** This project was completed for FPLE Maine Hydro and involved excavation of a Woodland Period site to a depth of 2.0 meters along the Kennebec River in Norridgewock, Maine. A report of the project was published in the *Bulletin of the Maine Archaeological Society* in 2001.

Historic Properties Management Plans (HPMP)

Dr. Will has written Historic Properties Management Plans (HPMPs) as required under Section 106 of the National Historic Preservation Act (1966) for a number of clients. These plans have been reviewed and approved by State Historic Preservation Officers, the Advisory Council on Historic Preservation, the Federal Energy Regulatory Commission, and the Department of Defense.

- **Historic Properties Management Plans for the Ripogenus and Penobscot Mills Projects (1999).** The plans for these northern Maine, federally licensed dams were prepared for Bowater International and are now being implemented by Brookfield Power, the current owner of the projects. The plans involve archaeological site investigations phased in over a 7-year period and public education initiatives.

Kathleen Wheeler, Ph. D.

Director & Principal Investigator

Dr. Wheeler has authored or co-authored hundreds of technical reports for projects completed in the New England over the last 30 years. She designs and directs archaeological field projects, performs in-depth analysis and presents the results of her research to professional associations and the general public.

EDUCATION

Ph. D., 1992, Anthropology,
University of Arizona

B.S., 1981 Anthropology,
University of New Hampshire

CERTIFICATIONS

- Member Register of Professional Archaeologists (RPA)
- Meets Secretary of Interior 36-DFR-61 Standards for Archaeologists
- Approved Archaeologist in New Hampshire, Vermont, and Maine - Level 2 Certified Historical Archaeologist
- 40-hr HAZWOPER certified



PROJECT ROLE: Maine Certified Level-2 Historic Archaeologist; Principal Investigator for all phases of archaeological survey

Central Maine Power, Maine Power Reliability Project - Section 106 Compliance. Principal Investigator for multi-year Maine Power Reliability Project, where Wheeler prepared site predictive models and designed sampling strategies for Phase I and II survey efforts. Project took place starting in 2008, advancing from design to construction phase. Project resulted in the discovery, documentation, and evaluation of 24 Euroamerican Maine farmsteads, as well as an overall view of the history of Maine farming through the 19th century.

Portsmouth Naval Shipyard, Kittery, ME - U. S. Navy.

Principal Investigator for multiple projects at the shipyard since 1995. Projects include sensitizing and monitoring ATV lines, natural gas lines, survey for Revolutionary War era Fort Sullivan, and an 1820s powder magazine overlooking Kittery's Back Channel, among others.

Bangor Hydroelectric Company, Downeast Reliability Project and the Hancock County Reliability Project –

Section 106 compliance (2007-2010). Principal Investigator for several Phase 0 through Phase II investigations for transmission corridor improvements as part of the. Completed Phase II investigations of three 19th-century farm sites.

Central Maine Power, Middle Street Substation, Section

255, Lewiston, Maine – Section 106 compliance (2013). Principal Investigator for Phase I survey for proposed substation near the Androscoggin River, where Lewiston's earliest hydro-powered mills were established in the late eighteenth century.

Public Service of New Hampshire, Eliot Substation, Eliot,

Maine - Section 106 compliance (2010). Principal Investigator for Phase 0 and Phase I intensive investigation survey of 17-acre lot in highly archaeological area along the Piscataqua River shoreline.

Maritimes & Northeast Natural Gas Pipeline – Section 106 Compliance (1996-2000). Multi-year and multi-phase linear corridor project for gas pipeline in existing CMP corridor as well in virgin right-of-way. Completed Phase 0 assessments to predict site location, confirmed in Phase I reconnaissance, and evaluated in Phase II studies.

Education

MPS, Preservation Studies,
Tulane University, LA, 2009

BA, History & Studio Art,
University of Vermont, VT,
2003

Professional Affiliations

National Trust for Historic
Preservation

US/ICOMOS

Awards

Student Project Award, National
Council on Public History, 2006

Presentations

US/ICOMOS International
Exchange, *Significance of Place:
A Case Study of Proposed
Changes in the Language of
Authenticity and Integrity*, August
2009

Experience

6 years

Kate Willis

Architectural Historian

Ms. Willis is a Secretary of the Interior qualified Architectural Historian with a variety of experience working with historic resources. She has expertise in the history of national and local architectural styles of both industrial and residential developments. She is experienced in surveying in accordance with Section 106 of the National Historic Preservation Act and Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER). Ms. Willis has inventoried over 1,500 properties for Municipal and Transportation related projects. In 2009, Ms. Willis was selected to the Young Professionals Program of the International Council on Monuments and Sites (ICOMOS).

Project Experience

Sarah Mildred Long Bridge Replacement Project, Section 106 Compliance, New Hampshire and Maine

Ms. Willis worked closely with MaineDOT and FHWA to provide comprehensive strategic direction for compliance for this \$158.5 million interstate bridge replacement, one of MaineDOT's largest replacement projects in its history. Kleinfelder was the lead cultural management services consultant for compliance focusing on New Hampshire SHPO, limiting adverse impacts, and developing a fiscally conservative mitigation package. She was responsible for analyzing the complex significance and integrity of a Post-WWII Subdivision as well as for a National Historic Landmark and an adjacent park. Her other responsibilities included coordinating archaeological sub-consultant work.

Town of Bradford, New Hampshire, National Environmental Policy Act Compliance

Ms. Willis has completed the NEPA Categorical Exclusion (CE) checklist including a US Army Corps of Engineers Individual 404 Permit, triggering Section 106 of the NHPA compliance. Ms. Willis undertook the work effort for the determination of eligibility of a c.1940 bridge at the site of a 200+ year old river crossing. Ms. Willis has also completed a CE, including Section 106 compliance, for a Transportation Enhancement funded project on East Main Street in Bradford that included two National Register-eligible historic districts.

Merrimack Valley Regional Transit Authority Section 106 Compliance, Newburyport, Massachusetts

Ms. Willis evaluated the National Register eligibility of properties within a proposed site for an intermodal parking facility. The site is located in the Newburyport Historic District, a district with a period of significance of over 200 years with nearly 2000 properties. The project was complex due to the awareness of the project with the local historic commission. Ms. Willis worked with the client and FTA to gain the commission's agreement with a determination made for the buildings before beginning consultation with the State Historic Preservation Office.

National Register Nomination, Lewiston Mills and Canal System, Lewiston, Maine

Ms. Willis prepared the National Register nomination for the Lewiston Mill and Canal System Historic District. This nomination included redefining district boundaries, surveying the potential district, and researching the district's contributions of the city of Lewiston and the state of Maine. The district covers approximately 720 acres. It consists of over 150 structures including ten mill complexes.

Division of Capitol Asset Management and Maintenance – Historic Structures Feasibility Study, Cambridge, Massachusetts

Ms. Willis was part of a team to study the feasibility of the adaptive reuse of two NR-listed buildings for law enforcement barracks. The site is considered one of the most prominent within the Charles River Basin in Boston and

Cambridge. Ms. Willis was responsible for identifying areas that may be of concern for the State Historic Preservation Office and regulatory compliance strategy as well as how to incorporate the Secretary of Interior's Standards for the Treatment of Historic Properties into the project.

Maine Section 106 Surveys, Various (ME)

Ms. Willis has completed the surveys, requisite reporting and eligibility determinations for bridge, highway and multimodal projects in accordance to Section 106 on behalf of the Maine Department of Transportation. The surveys, to date, include over 1000 properties including numerous National Register listed or eligible properties.

Sample Maine Section 106 Surveys

Windham, Maine Section 106 Survey

Ms. Willis is completing a re-survey of River Road in Windham to include mid-20th century residences as well as historic barns. Completion also required the complex designation of historic farmsteads in the online database. This survey included 98 properties.

Lewiston, Maine Section 106 Surveys

Ms. Willis has conducted multiple surveys of historic structures, including two eligibility determinations, in accordance with Section 106 on behalf of the Maine Department of Transportation. To date, she has surveyed 184 historic resources in the city of Lewiston.

Hawthorne School, Sanford, Maine – Maine Historic Building Recordation

Ms. Willis has completed the recordation of the Classical Revival-style school in Sanford, Maine on behalf of Maine Department of Transportation. This documentation mirrored the standards of HABS Level II documentation and included large format photographs and a historic narrative.

Gilead Village School, Gilead, Maine – Maine Historic Building Recordation

Ms. Willis has documented the Gilead Village School for the Maine Department of Transportation required for compliance with Section 106. This project includes sketch plans, large format photographs of exterior and interior views, and written data. The requirements of this project those of HABS Level II documentation.

Outside Projects

Blockmaker's House, Stockholm City, Sweden – HABS Recordation

Ms. Willis recorded the Blockmakarens (Blockmaker's House) for the Stockholm City Museum. At the request of the organization, the project was HABS/HAER Level III documentation. The museum will use this documentation to monitor the movement of the 15th century structure. This project was the first of its kind for the Stockholm City Museum as well as the first in depth documentation of the structure.

Preservation Plan, New Orleans and Arabi, Louisiana

Ms. Willis was part of a team that developed a comprehensive redevelopment plan for the neighborhoods that encompass Jackson Barracks, the nation's longest continually used military base. Planning included resident consultation, recommendations for zoning changes, and addressed infrastructure and green space in an area along the Industrial Canal and Mississippi River.

Jackson Barracks, New Orleans, LA – HABS Recordation

Ms. Willis was part of a team that documented two Greek Revival-style buildings at Jackson Barracks in New Orleans, Louisiana. This was HABS/HAER Level I documentation with a full set of measured drawings depicting existing and historic conditions, large format photographs of exterior and interior views, and historic views as well as a written history and description. The two buildings have a combined approximate area of 15,000 square feet. Jackson Barracks is believed to be the longest continually running military outpost in the nation and widely considered the best national example of a collection of Greek Revival-style buildings.

Education

MA, Public History, Indiana University-Indianapolis, IN, 2009

BA, History & International Affairs, Muskingum College, OH, 2004

Professional Affiliations

National Trust for Historic Preservation

WTS, Maine Chapter

Awards

Student Project Award, National Council on Public History, 2006

Presentations

Indiana Association of Historians, "Public Commemoration of a Centenary: Indiana and the Legacy of Eugenics, 1907-2007," 2007

Experience

8 years

Amanda C. Taylor Architectural Historian

Ms. Taylor is a Secretary of the Interior qualified professional architectural historian with significant experience evaluating historic resources. She has worked for a variety of historic preservation entities, where she coordinated large county-wide historic resources inventories and assisted with National Register of Historic Places nominations. Ms. Taylor also has extensive experience working with Section 106 of the National Historic Preservation Act and Section 4(f) of the US Department of Transportation Act. Finally, as an academically trained historian, Ms. Taylor also has broad experience synthesizing primary and secondary sources into concise narratives.

Project Experience

Sarah Mildred Long Bridge Replacement Project, Section 106 Compliance, New Hampshire and Maine

Ms. Taylor is currently participating in Section 106 compliance on behalf of the Maine Department of Transportation for the Sarah Mildred Long Bridge replacement project. The bridge spans between Kittery, ME, and Portsmouth, NH. The project is complex by nature, from the presence of a wide variety of historic resources, including four National Historic Landmarks (NHLs), and coordinating with multiple state and federal agencies and consulting parties. The project also required extensive avoidance and minimization efforts to limit effects to the National Historic Landmark-designated USS Albacore. As part of a team, Ms. Taylor is working to provide determinations of eligibility and effects for New Hampshire resources, full Section 4(f) documentation, and strategic direction for consulting parties meetings and appropriate mitigation levels. Currently, she is completing resulting mitigation tasks. (2011-present)

Peaslee Road Bridge Replacement Mitigation Project, New Hampshire

Ms. Taylor is currently preparing measures to mitigate the replacement of the National Register-eligible Peaslee Road Bridge in Weare. The Beam Girder bridge is one of five located in NH. Mitigation measures include documentation and recordation of the bridge, including a narrative of the bridge's history and design and large format photographs. An additional mitigation task includes preparing a booklet for the Town of Weare about the bridge's history and significance. (2012-present)

Waldo-Hancock Bridge Replacement Mitigation Project—*Historic Bridges of Maine: 350 Years of Bridge and Roadway Design*

As part of the mitigation package for the removal of the nationally significant Waldo-Hancock suspension bridge, Ms. Taylor participated in the development of the publication, *Historic Bridges of Maine: 350 Years of Bridge and Roadway Design*. The publication discusses the evolution of bridge building in Maine, while highlighting specific bridge types and construction and notable individual bridges in Maine. Ms. Taylor's role in the publication project is as an assistant editor, co-author, and layout coordinator. (2012-2013)

Martin Memorial Bridge Section 106 Compliance and Section 4(f) Project, Rumford, Maine

Ms. Taylor completed the Determination of Effect, full Section 4(f) evaluation, and final Section 4(f) statement for the replacement of the steel truss Martin Memorial Bridge project, which resulted in an adverse effect on the National Register-eligible Rumford Point Historic District. In addition, Ms. Taylor completed the required tasks related to mitigating the project's adverse effects. These measures included digitally photographing over 160 historic properties in Rumford and completing scale, measured drawings of all elevations of a historical blacksmith shop within the Rumford Point Historic District. (2012-2013)

Maine Section 106 Architectural Inventories, Various

Ms. Taylor has completed the surveys, requisite reporting, and eligibility determinations for bridge, highway, and multi-modal projects in accordance to Section 106 on behalf of the Maine Department of Transportation. These projects include field survey, determinations of eligibility, project reports, and a matrix of properties. These determinations of eligibility require placing individual sites and historic districts into national, regional, and local contexts. The surveys, to date, include over 2,000 properties including numerous National Register-listed or -eligible properties. Several examples are provided below. (2011-present)

East Machias Section 106 Architectural Inventory

Ms. Taylor completed the survey, requisite reporting, and eligibility determinations in accordance with Section 106 related to the replacement of the 1937 Warren pony truss Jacksonville Bridge No. 3219. The survey included the evaluation of three historic resources, including the 1937 bridge. This survey required further research into a New England Telephone and Telegraph building located within the Area of Potential Effect (APE). (2014)

Bath Section 106 Architectural Inventory

Ms. Taylor completed a survey, requisite reporting, and eligibility determinations related to the rehabilitation of Bridge No. 3838. The survey included the National Register-listed U. S. Customs House and Bath Historic District and National Register-eligible Bath Railroad Station. The survey included 74 historic resources within a large APE based on the high visibility of the 1958 Bridge No. 3838. (2011-2012, 2014)

Woodstock Section 106 Architectural Inventory

Ms. Taylor completed the survey, requisite reporting, and eligibility determinations in accordance with Section 106 on behalf of the Maine Department of Transportation. The survey included the evaluation of 91 properties in relation to preliminary engineering for the rehabilitation of Route 26 in Woodstock. This survey area included the village of Bryant Pond. A large historic district based around the village's commercial center and related residential neighborhoods was determined eligible for the National Register. (2013-2014)

Dexter Section 106 Architectural Inventory

Ms. Taylor completed the survey, requisite reporting, and eligibility determinations in accordance with Section 106 on behalf of the Maine Department of Transportation. The survey included the evaluation of 103 properties in relation to the reconstruction of 1.6 mile long stretch of Route 7 in Dexter. Four sites were determined eligible for the National Register. (2012)

Outside Projects

Georgetown Historic District, National Register of Historic Places Nomination

Ms. Taylor participated in the completion of a National Register nomination by H & H Associates, LLC for the Georgetown Historic District in Floyd County, Indiana, on behalf of the Town of Georgetown and Indiana Landmarks. The Georgetown Historic District's significance is rooted in its pre-statehood development due to its close proximity to the Ohio River and inland travel routes. The nomination included determining the district's boundaries, surveying all structures, and conducting primary and secondary research. The district includes over 160 contributing structures and was listed in 2013. (2011)

Greenfield Residential Historic District, National Register of Historic Places Nomination

Ms. Taylor, as part of a team, completed a National Register nomination by H & H Associates, LLC for the Greenfield Residential Historic District in Hancock County, Indiana. The historic district numbered over 520 properties in downtown Greenfield. The nomination sets Greenfield's development in the context of nationally significant events, such as the construction and evolution of the National Road, with more regional and local events, including the natural gas boom of the late nineteenth century. Ms. Taylor participated in the determination of the historic district's boundaries, survey of properties, and drafting of the nomination's narrative. The historic district was listed in the National Register in 2011. (2010-2011)

Indiana Historic Sites and Structures Inventory, County Survey Program

As part of the Indiana Division of Historic Preservation and Archaeology's survey program, Ms. Taylor coordinated numerous county-wide historic resource inventories for Indiana Landmarks and Ball State University's Center for Historic Preservation in the City of South Bend and Crawford, Bartholomew, Benton, Carroll, Floyd, Franklin, Newton, Parke, Pulaski, Tipton, Union, Warren, and Washington counties. The surveys recorded all contributing historic resources on a survey form complete with photographs, architectural and historical information, UTM coordinates, and National Register eligibility. Ms. Taylor then compiled the information into published illustrated county interim reports. (2006-2011)



IAN N. BROADWATER, MECSS/NHCWS/MESE Senior Scientist & Project Manager

Mr. Broadwater has over 28 years of experience in environmental evaluation and consulting. His areas of expertise are wetland science and soil evaluation. Ian has provided permit consulting and wetland delineation for a variety of clients including large commercial clients in the Northeast, residential developers, and property owners. He has designed or co-designed over 150 acres of created, restored, or enhanced wetland. During his career, Ian has coordinated with large stakeholder groups on complex projects to help ensure a successful applications for clients. He also is licensed to design subsurface wastewater disposal systems in Maine and has completed designs on a variety of system types, from an engineered system for a large commercial building to smaller residential systems. Additionally, Ian is a proficient soil scientist and has conducted numerous soil surveys in Maine and Connecticut.

SELECTED PROJECT EXPERIENCE

RCRA Corrective Action, Woodard & Curran, Inc., Groton, CT (2012 - Present). Normandeau was retained by Woodard & Curran, Inc. to characterize wetlands and assist with permitting at a historic facility formerly owned by confidential client. Woodard & Curran was tasked with designing and implementing a clean-up of residual materials left at the site. Two areas of focus were a freshwater pond and the bank of a tidal river. At each of these locations, wetland delineations and function/value assessments were completed. In support of the planned remedial action, Normandeau prepared permit applications for the Town of Groton, the U.S. Army Corps of Engineers, and the State of Connecticut. Mr. Broadwater attended local hearings on the permit application to address questions on the restoration. Based on current regulatory guidance, Normandeau developed restoration plans needed for local, state, and federal permit applications. Construction began in October of 2013 and Mr. Broadwater has provided on-site consulting services during restoration activities. Senior Permitting Specialist/Project Manager.

Permit and Restoration Support, AMEC Infrastructure and Environment, Windsor, CT (2009 - Present). Normandeau was retained by AMEC to provide wetland and ecological technical support for a series of remediation projects at property in Windsor, Connecticut. Mr. Broadwater coordinated the environmental permit applications for two remediation projects at

EDUCATION

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

PROFESSIONAL EXPERIENCE

2008-Present Normandeau Associates
2005 to 2008 Broadwater
Environmental, Inc.
President/Owner
1985 to 2005 MACTEC Engineering and
Consulting, Inc.

PROFESSIONAL CERTIFICATIONS

- Maine Certified Soil Scientist #305
- NH Certified Wetland Scientist #162
- Maine Licensed Site Evaluator #230

PROFESSIONAL AFFILIATIONS

- Maine Association of Professional Soil Scientists
- Maine Association of Wetland Scientists
- Maine Association of Site Evaluators
- New Hampshire Association of Natural Resource Scientists
- Society of Soil Scientists of Southern New England
- Massachusetts Association of Wetland Scientists

the site. The projects were undertaken as part of decommissioning that was mandated by the Nuclear Regulatory Commission. Both projects at the site involved obtaining local Inland Watercourses and Wetlands Commission (IWWC) permits. Mr. Broadwater was the principle author of the local application narratives and provided testimony at the Windsor IWWC hearings on the projects. One project required an Individual 404 permit from the U.S. Army Corps of Engineers and an accompanying 401 Water Quality Certification Permit from the State of Connecticut. Mr. Broadwater coordinated the synthesis of technical information including the remedial design into the permit application and met with regulatory agency personnel to discuss various aspects of the application and design. A 401 permit and a 404 permit were issued by CEDEEP and the Corps, respectively, in January of 2011. In the fall of 2011, Mr. Broadwater provided on-site technical oversight of the restoration projects and monitoring of the restorations was initiated in 2012. Annual monitoring reports have been prepared by Normandeau and submitted to the Corps for review for the past two years. Senior Scientist.

Lowe's Regional Distribution Center, Lowe's Home Centers, Inc., Plainfield, CT (2003 - Present). Mr. Broadwater assisted Lowe's with site search and selection for a Regional Distribution Center. As part of the process, Mr. Broadwater conducted wetland delineation and a function/value assessment on a 300-acre site. He also located wetland boundaries using a differentially-corrected global positioning system. Mr. Broadwater was the main author and coordinator of successful applications for a 404 Individual Permit and 401 Permit on a site that contained State-listed threatened species. Mr. Broadwater represented the client at public hearing and regulatory meetings and coordinated additional scientific experts to support permitting. He assisted Lowe's in preparing a bid for wetland mitigation and conducted monitoring required by the permit conditions. Senior Permitting Specialist.

Reconstruction of Historic Grist Mill, Kennebunkport Conservation Trust, Kennebunkport, ME (2011 - 2013). Coordinated field investigation and data collection and completed permit applications for the construction of a historically correct, tidal powered grist mill. The project involved submitting applications under the Maine Waterways Conservation and Development Act and the Clean Water Act (i.e., an Army Corps of Engineers Category 2 General Permit). In February of 2013, permits were issued by the Corps and MDEP. Project Manager/Permitting Specialist.

Wetland Characterization and Permitting Services, Mercy Hospital Portland, ME (2010 - 2013). As Senior Project Scientist, Mr. Broadwater was a primary author of the Individual Permit Application to the U.S. Corps of Engineers and a Tier III Maine Natural Resource Protection Act Permit Application. The applications were made to fill a wetland on the Mercy Hospital Fore River Campus for the purpose of consolidating operations from other locations. As part of the application, a wetland mitigation site search was conducted. The conclusion of the search was that an in-lieu fee payment would be made for the wetland impact. A turtle relocation plan was created for the wetland and will involve capturing turtles in the wetland to be filled and releasing them in a city park wetland. Construction of the hospital complex is expected to begin in 2015. Senior Scientist.

Maine Power Reliability Project, Peer Review of Fieldwork and Permit Application for the MDEP (2009 - 2010). Working for the Maine Department of Environmental Protection (MDEP),

Mr. Broadwater coordinated the review of over 80 percent of the proposed power line corridors in which new or upgraded lines were proposed. As Project Manager, Mr. Broadwater coordinated up to three crews to complete the field reviews. Discrepancies in field mapping were noted and located with a Global Positioning System (GPS). For each line segment, reports were created to summarize discrepancies and map the location of the discrepancies. An electronic file was provided to the MDEP and the applicant for the purpose of locating identified discrepancies. A desktop review of mapping was also completed, which resulted in the designation of additional freshwater wetlands of special significance. Project Manager.

Northern Pass Project, NH Public Service and Gas, NH (2012 - 2013). Conducted wetland delineation and function and value assessments for this large scale transmission project. Completed U.S. Army Corps of Engineers pair plots to support delineation documentation. Tracked project progress and conducted health and safety meetings with team members. Senior Scientist.

Soil Mapping, and Wetland Delineation, Boothby Road Subdivision, Mr. Charles Spaulding, Kennebunk, ME (2003 - 2004). Completed a wetland delineation and high intensity soil map for a proposed subdivision. The project included mapping the boundary between Palustrine and Estuarine wetlands which played a role in the configuration of lots in the subdivision. Project Scientist.

SPECIAL TRAINING

Land Use & Development Planning Near Transmission Pipelines

Stream-Smart Road Crossing Field Training Workshop, Phase II

Floodplain and Riparian Issues Professional Development Conference

Anatomy of a Drumlin Workshop

Urban/Altered/Disturbed Soil Workshop

Maine Association of Wetland Scientists Vernal Pool Regulatory Workshop

Interim Regional Supplement to the 1987 Wetland Delineation Manual Workshop

Wetland Delineation and Identification and Site Evaluator Soil Pit Classification Workshop

MAPSS Natural Resource Identification Workshop

Wetland Construction Design, Rutgers University (Cook College)

Consultants Permitting Workshop, Maine Department of Environmental Protection