SECTION 4.
TECHNICAL ABILITY

The team assembled for the Number Nine Wind Farm (Project) has experience in the development, permitting, and construction of multiple grid-scale wind power projects in Maine and in other states in the Northeast and across the country.

Each consultant was selected based on their extensive experience and expertise in their respective disciplines.

4.1 PROJECT TEAM

EDP Renewables North America LLC (EDPR NA) through its affiliates, develops, constructs, owns and operates wind farms throughout North America. Based in Houston, Texas with 30 operating wind farms across the United States, EDPR NA has developed and operates over 3,800 MW of wind farms. With nearly 300 employees EDPR NA's highly qualified team has a proven capacity to execute projects and achieve goals.

The team includes EDPR; Fisher Associates (civil engineering, stormwater analysis); SGC Engineering, LLC (electrical engineering); Dashiell Corporation (electrical engineering); Stantec Consulting Services, Inc (natural resource assessments, wildlife studies, shadow flicker assessment, permitting); Bodwell Associates (sound assessment); WEST (wildlife studies); TRC/Northeast Cultural Resources (prehistoric archaeological resources), Independent Archeological Consulting (historic archaeological resources), Public Archeology Lab (historic architectural resources); Albert Frick Associates, Inc. (soils); Terracon Consultants, Inc (blasting); James W. Sewall Company (decommissioning and survey); Terrence J. DeWan and Associates (visual impact analysis); Todd M. Gabe, Ph.D. (economic impact analysis); and Eaton Peabody PA and The Sells Law Firm LLC (legal counsel).

4.1.1 Resumes

Resumes of key personnel are included in Exhibit 4-A.

EXHIBIT 4-A RESUMES

Ryan Brown
Executive Vice President – Eastern Region of EDPRNA

Executive Summary

EDPR is the third largest wind energy owner/operator in the United States with wind farms in California, Indiana, Kansas, New York, Iowa, Minnesota, Washington, Oklahoma, Ohio, Oregon, Texas and Illinois. Ryan Brown has extensive experience in the full lifecycle development of wind farm projects including site identification, meteorological investigations, interconnection management, land acquisition, lease negotiations, permitting and multistate project management. Mr. Brown is also responsible for cultivating and managing relationships with landowners, regulators, independent system operators, off-takers, and federal, state and local agencies. As Executive Vice President of EDPR NA's Eastern Region, Ryan has P&L responsibility for over $3.7 billion dollars of operating assets. He manages a diverse group of cross functional internal teams and is also responsible for sourcing new growth opportunities across the region.

Career Highlights

Over Mr. Brown's nine years of experience, he was also the Director of Development – Canada, Toronto, Senior Project development Manager, and Project Development Manager. Mr. Brown is responsible for project planning and develpment of 829MW, including Ohio's first wind farm, and he was involved in securing 1,500MW in the US and 500MW in Canada in greenfiled wind planning and development experience.

EDUCATION

Finance for Executives, Unv. of Chicago Booth School of Business Executive Education, 2013

Economics, University of Chicago, B.A., 2001

AWARDS AND RECOGNITION

- Selected for EDPR's Global Executive Development Program (2012-13)
- Named Advisory Board Member of Senator Richard G. Lugar Center for Renewable Energy (2010)
- U.S. Department of Energy Wind Powering America Outstanding Young Wind Advocate Award (2008)
- Indiana Governor's Public Service Achievement Award (2006)

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Kenneth A. Ripper, PE
Executive Vice President - Technical

Executive Summary

Executive Vice President - Technical Department Officer for over seven years, Ken Ripper is responsible for the departments providing Engineering Services, Health & Safety and Construction Project Management for new build construction projects and projects currently in operation.

Career Highlights

As a member of the Executive Team, works closely with the officers and directors of EDP Renewables North America, LLC, to ensure proper planning, preparation, communication and execution of the business plan, commitment to the Vision, Mission and Values of the Company, and the successful execution of those objectives. As the current Executive Vice President - Technical and former Director of Engineering, responsible for new wind farm project and solar installations in North America and Canada, successfully managed and provided direction and oversight to over 4,200 MWs of growth in capacity from 2006 to 2014, with currently 399 MWs of wind generation under construction in 2015.

Prior to joining Horizon Wind Energy in 2006, the predecessor company of EDPR, was Western Region Technical Director for Reliant Energy, LLC. Experience at Reliant, included project management of domestic, combined-cycle and simple-cycle projects.

Other experience has included project engineering, site construction management and the supervision of power plant improvement, transmission and distribution design teams. Proficiency in the Electric Power Industry, includes both Utility and Merchant/IPP work experience.

EDUCATION

Civil Engineering, University of Houston, B.S.

Advanced Management Program, University of Chicago- Booth School of Business

REGISTRATION

Registered Professional Engineer – Texas

PROFESSIONAL

Member American Society of Civil Engineers

Bernardo F. Goarmon
Executive Vice President of Finance

Executive Summary

Bernardo Goarmon reports to the CEO, being responsible for all aspects of Finance at EDPR North America (c. $8B assets, $500M EBITDA, $890M capital plan). Mr. Goarmon supervises Finance & Treasury, FP&A, Tax, Accounting & Insurance, IT and Internal Controls.

Career Highlights

Mr. Goarmon was the Director of Corporate FP&A, Tax Planning and Corproate Controller for EDPR Europe for five years. During that time, he was responsible for Financial Planning & Control for all 11 geographies where EDPR operate, leading all financial reporting to management (c. 950M€ EBITDA and c. 100M€ Net Income) and financial control of capital investment plan (c. 2B€). Lead company's Business Plan, Budget and Forecast processes. Mr. Goarmon was also responsible for Corporate Tax Planning and coordination of EDPR financial Consolidation and statutory reporting.

EDUCATION

MBA, Darden School of Business, UVA, Charlottesville, VA., 2006

Integrating Finance and Strategy for Value Creation, Wharton School, Philadelphia, PA 2012

Advanced Corporate Finance, London Business School, London, 2010

Leadership for High People Skills, London Business School, London, 2010

Advanced Program for Management of Financial Institutions, Universidade Católica Portuguesa – UCP, Lisbon, Portugal, 2003

Business and Administration, Universidade Católica Portuguesa – UCP, Lisbon, Portugal BA/MS 1999

OTHER

Proficient in English; fluent in Spanish, some knowledge of French. Native in Portuguese.

Certified Public Accountant

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Jana Waterhouse Green
Associate General Counsel

Executive Summary

Ms. Green has been in-house counsel with EDPR NA since 2005. She has been Associate General Counsel for the last eight years. Her responsibilities include the legal matters associated with development, acquisitions, operations, construction and financing of all renewable projects. She is directly responsible for all real estate matters associated with development, acquisitions, operations, construction and financing of all renewable projects and the supervision of the real estate division of the legal department.

Career Highlights

Over Ms. Green's 39 years of practicing law in the areas of project development, construction, permitting, real estate, acquisition and financing, Ms. Green has 22 years of experience devoted to the acquisition, development, permitting, construction, operation and financing of all types of renewable energy projects. During Ms. Green's 10 years with EDPR NA she has been involved in 10,561 MW of renewable projects in the United States, Canada and Mexico. Ms. Green has also participated in numerous tax equity financings totaling 3,218 MW for EDPR NA.

EDUCATION

Thomas Jefferson College of Law of Law. San Diego, California, J.D. December, 1975
Thomas Jefferson College of Law, San Diego. California, B . S . L . December, 1973
Member California State Bar, June 25, 1976 State Bar #68954

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Erin Bowser
Director of Project Management – Eastern Region of EDPRNA

Executive Summary

As a Director of Project Management, Erin Bowser has overseen late stage development and construction of more than 400MWs of EDPR NA's operating fleet of wind farms in New York and Indiana and will serve in the same capacity through the development and construction of Number Nine Wind Farm LLC.

Career Highlights

Prior to Ms. Bowser's five years as a Director of Project management, she was a Project Manager. During her three years as a Project Manager, she led the development of Timber Road Wind Farm, Ohio's first utility scale wind farm.

Before she joined the EDPRNA team, she was the Director of Environment Ohio, a non-profit energy advocacy organization based in Columbus, Ohio.

EDUCATION

Political Science, Ohio University, M.A., 1998

Bachelor of Arts, Clarion University of Pennsylvania, 1997

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Christina Calabrese
Director, Permitting and Environmental Affairs

Executive Summary

Christina Calabrese oversees environmental strategy, permitting, and compliance for EDP Renewables' projects, from development to operations, throughout North America and Mexico.

Career Highlights

Christi Calabrese has eight years of experience working in the renewable energy industry, primarily on environmental and siting issues related to wind energy projects across the U.S.

Her previous experience includes environmental manager positions at Duke Energy and BP Wind. Prior to working in the renewable energy industry, she was an environmental consultant with Environmental Resources Management, working primarily on environmental impact assessments.

Among her wind energy career highlights, Ms. Calabrese has managed dozens of wind projects from the strategic level through implementation in the eastern, central, and western regions of the U.S and Mexico. Most recently, she led the environmental permitting for the first project going through the Article 10 permitting process in New York. Ms. Calabrese also managed the development of one of the first wind energy Habitat Conservation Plans (HCP) for the Indiana bat for a wind project in Indiana.

As Director of Permitting and Environmental Affairs, Ms. Calabrese and her team are involved in advising EDPR's various teams in the environmental permitting and permit compliance of EDPR's projects from planning phases through implementation and operations, including developing strategies to avoid and minimize environmental impacts. In addition, Ms. Calabrese develops environmental corporate standards and procedures for EDPR and advises EDPR's CEO and Executive Team on environmental regulations and policy issues pertaining to wind energy development and operations.

Ms. Calabrese currently serves as co-chair for the American Wind Energy Association Siting and Environmental Compliance Committee and is one of the wind industry leaders in the development of two regional habitat conservation plans for wind energy projects, the Great Plains Habitat Conservation Plan and the Midwest Wind Energy Multi-Species Habitat Conservation Plan.

Education

Master of Science, Marine Resources Management , Texas A&M Galveston, Galveston, TX

Bachelor of Science, Zoology, University of Florida, Gainesville, FL

Katie Chapman
Project Manager

Executive Summary

Katie Chapman has been a Development Project Manager for EDPRNA since 2012. She manages the development of complex, large-scale renewable energy projects in the Mid-Atlantic and Northeast US.

Career Highlights

Prior to managing developing projects for EDPRNA, Ms. Chapman supported developing projects since 2010. As a project developer, Ms. Chapman developed project schedule and budget, coordinated team members to meet milestones, adapted team strategy to project developments such as local opposition or market changes, and fostered team growth and learning, established positive and motivated working environment. Ms. Chapman helped prospect, lead project permitting, secured transmission and interconnection points, acquired landowner agreements, developed project maps, supported project acquisitions, and participated in community outreach.

At the Swan's Island, as a Fellow and Renewable Energy Fellow in 2007, Ms. Chapman supported project development for the Fox Island Wind Power Project – 4.5 MW, including assessing raw wind data, creating project maps, coordinating community outreach including events, and writing newsletters. Identified and obtained all necessary local, state, and federal permits.

Ms. Chapman also helped to develop Norwich, Vermont Community Solar Project in 2009. She secured $150,000 Clean Energy Development Fund grant for 237 kW project; developed project time line and coordinated resource needs with project engineer and financial advisor; and supported the Certificate of Public Good and Necessity application; the project was not built.

Ms. Chapman organized community stakeholders to successfully pass Cool Communities, and adaptation of the Kyoto Protocol for Maine towns. She worked with community to develop carbon reduction plan.

EDUCATION

MBA, Current University at Albany, Ongoing

Spanish, B.A. / Phyiscs Minor, Bowdoin College, Brunswick, Maine

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Erin Johnston
Regional Environmental Manager

Executive Summary

Erin has over 11 years of project management, environmental permitting, engineering, and research experience in the areas of renewable energy and energy efficiency. At EDPR NA, Erin's responsibilities include advising project teams regarding the environmental permitting of projects from planning phases through implementation, managing the work of consultants who perform environmental studies for the siting and permitting of the company's wind generation facilities, and overseeing the preparation of federal, state, and local environmental documents.

Career Highlights

Erin leads environmental management of wind generation projects efforts for EDPR in the eastern region of the United States in order to ensure that the environmental permitting of EDPR's projects meets the company's internal standards and pertinent regulatory requirements. Erin is responsible for overseeing the preparation of environmental studies for the siting and permitting of wind generation facilities; supervising the work of project environmental consultants, managing project schedules, and ensuring quality of documents; overseeing and assisting with the preparation of Habitat Conservation Plans (HCP), Eagle Conservation Plans (ECP), NEPA (National Environmental Policy Act), Bird and Bat Conservation Strategies (BBCS) and state NEPA-like environmental documents, including EISs, EAs, as well as other federal, state and local environmental permits as needed; peer-reviewing drafts of permits applications, studies, scopes of work, and reports for environmental permitting; and attending agency meetings and leading strategy meetings in preparation.

From 2010 – 2013 Erin worked at GL Garrad Hassan as a Wind Farm Design Project Manager. Durring her time at GL Garrad Hassan, she lead Project Development Team efforts for GL GH in the United States. Erin was responsible for configuration and optimization of wind farm layouts with consideration to site-specific environmental, land-use, regulatory, and social constraints, as well as wind resource characteristics, and assessment of potential impacts and verification of conformity with applicable standards, regulations, and/or ordinances (e.g. noise, shadow flicker, and visual). Erin was responsible for management and coordination of engineering conceptual design and analyses (e.g. preliminary electrical and civil design of wind farm BoP). Erin also provided expert testimony for sound and shadow flicker impacts.

Erin served as Project Manager for Energy Trust of Oregon's Wind program from 2007-2010 where she managed all aspects of the Small and Community Wind programs including budgeting, outreach, contractor management, technical and financial analysis of proposed projects, and quality standards and assurance. Prior to Energy Trust, Erin spent two years at Navigant Consulting where she performed engineering analysis and technical report writing for various clients, including the U.S. Department of Energy (DOE), Natural Resources Canada, and NYSERDA, in support of their appliance efficiency standards programs.

Education

Mechanical and Aerospace Engineering, Princeton University, M.S.E., 2003
Certificate in Robotics and Intelligent Systems

Kellen Ingalls
Project Manager

Executive Summary

Kellen Ingalls is a Development Project Manager for EDPRNA. He manages the development of several large-scale Northeastern US wind projects.

Career Highlights

Prior to managing developing projects for EDPRNA, Mr. Ingalls helped prospect, led project permitting, secured transmission and interconnection points, acquired landowner agreements, developed project maps, supported project acquisitions, and participated in community outreach beginning in 2012. Mr. Ingalls has assisted with due diligence efforts for both wind energy and solar development projects.

Prior to Mr. Ingalls' work at EDPRNA, he was part of a development consulting company specializing in small to large scale wind farms in New England for three years. This included the 10-MW Georgia Mountain Community Wind and 63-MW Kingdom Community Wind projects in Vermont, as well as several utility and community projects throughout the region. Mr. Ingalls also managed data collection and reporting for the Vermont Small-Scale Wind Energy Demonstration Program, which monitored the performance of approximately 20 wind turbine systems throughout the state.

Mr. Ingalls also worked as a Project Manager for a property redevelopment and management company specializing in renewable energy integration and historic building preservation.

EDUCATION

M.A. in English, concentration in Environmental Studies, University of Vermont

B.A. in English, State University of New York at Fredonia

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

Mr. Pelletier is a Certified Wildlife Biologist, Professional Wetland Scientist, and Certified Professional and Licensed Forester with over 30 years of professional experience. He specializes in site- and landscape-level natural community and habitat analyses, forest ecology/management, wetland ID/functional assessments, and project impact analysis and compensation, and offers expertise in a variety of rare species evaluations, avian/bat risk assessments, and impact avoidance and mitigation measures for projects ranging from transportation to energy development.

Mr. Pelletier has provided expert witness testimonies and third-party reviews in both the US and Canada and has served on Federal and State advisory committees and stakeholder groups involving diverse resource issues. He has authored publications involving forest biodiversity and habitat fragmentation and designed and led a 3-year offshore acoustic research study. He currently serves as Principal Investigator of a similar 3-year DOE-funded offshore acoustic research effort.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Senior Principal.
- Woodlot Alternatives, Inc. 1987-2007. Vice President and Founder.
- Maine DEP. 1984-1989. Environmental Enforcement Specialist II.
- MDIFW. 1980-1985. Seasonal Biological Assistant.
- US Forest Service. 1982-1983. Wildlife Biologist.</li
- US Forest Service. 1981. Wildlife Biologist Assistant.
- US Navy, USS America (CV-66). 1974-1976. Photographers Mate.

EDUCATION

BS, Wildlife Management & Forestry, University of Maine, Orono, Maine, 1980

AS, Forest Management Technology, with Distinction, University of Maine, Orono, Maine, 1978

40-Hour HAZWOPER Certification, OSHA, Topsham, Maine, 2012

REGISTRATIONS

Licensed Professional Forester, State of Maine, Board of Licensure of Foresters

Certified Wildlife Biologist, The Wildlife Society

CPROX Administrator, Technical Diving International

Professional Wetland Scientist, Society of Wetland Scientists Certification Program

Certified Forester, Society of American Foresters

Certified in Habitat Evaluation Procedures, U.S. Fish & Wildlife Service, National Conservation Training Center

MEMBERSHIPS

Member, Co-founder, Past President, Maine Association of Wetland Scientists

Ocean Energy Task Force, Environmental and Human Impacts Subcommittee, Maine State Planning Office

Maine Vernal Pools Work Group, Maine State Planning Office

Science Advisory Committee, Friends of Merrymeeting Bay

West Branch Stewardship Advisory Group, Forest Society of Maine

Member (Maine and New England Chapters), The Wildlife Society

** denotes projects completed with other firms*

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

Member and Former Board Member, Brunswick-Topsham Land Trust

Board Member, State of Maine, Board of Licensure of Foresters

(Past) Maine Oil Spill Advisory Committee, appointed by Governor of Maine, State of Maine

Member, Society of Wetland Scientists

Member, Society of American Foresters

Member, Forest Guild

PROJECT EXPERIENCE

Natural Resource Services

Gulf of Maine Avian/Bat Pilot Migration Project, Gulf of Maine (Principal Biologist)

Designed and directed offshore fall (2009) avian and bat migration survey along ~140 mile transect along Maine coast from Petit Manan to Halfway Rock Islands, and extending up to 20(+) miles offshore to Mt Desert Rock. Survey included dual coastline/island x-band radar surveys and concurrent acoustic bat surveys at 12 dispersed locations including 10 offshore island sites. Project was supported by Stantec Consulting and included federal, state, and NGO partners. Survey results to be released and currently pending.

Plum Creek Deer Wintering Surveys, Maine (Project Manager)

Managed and oversaw a typical growing season and (typical) winter field surveys to evaluate deer wintering habitat on 60,000(+) acres of Plum Creek land in areas with historic deer use. Surveys conducted in concert with Maine Department of Inland Fisheries and Wildlife and Plum Creek biologists.

Plum Creek Moosehead Lake Region Concept Plan, Maine (Project Manager)

Managed and oversaw extensive, multi-year broad spectrum and comprehensive natural resource evaluation and field analysis of lands in the Moosehead Lake region of Maine. Landscape-level surveys were conducted across approximately 11,000 acres of land proposed for development, and 392,000 acres of permanently conserved lands as proposed by the Plum Creek Concept Plan. Surveys included rare, significant, or otherwise unusual or unique natural resources that could potentially be present within each proposed development area and involved rare, threatened, or endangered (RTE) wildlife habitat; RTE plant species; Significant Wildlife Habitat, including potential Deer Wintering Areas and Inland Wading Bird and Waterfowl habitat; aquatic habitats, including vernal pools, streams, and shorelines; and Maine Land Use Regulation Commission communities. Extensive reports and maps summarizing survey results were prepared, followed by extensive expert witness testimony. Findings were key to the successful permitting of the Plan and developing the nationally recognized Moosehead Region Conservation Easement.

Expert Witness Testimony (Principal Scientist)

Provided critical State (ME, NH, VT, MA, WV) Expert Witness testimony on natural resource issues involving rare natural communities, landscape- and project-scale habitat fragmentation, avian, bat, and terrestrial rare species impact assessments, avian and bat migration, and timber trespass. In addition, Mr. Pelletier has provided external third-party reviews of proposed project impacts on behalf of state review and regulatory agencies.

Mere Point Boat Launch Evaluations, Permitting, and Testimony, Brunswick, Maine (Project Manager)

Directed wetland habitat assessments and wildlife impact evaluations within terrestrial, riparian, and coastal zones, developed mitigation options and plans, and assisted in state and federal permitting for a controversial public boat launching facility in Casco Bay. Provided expert witness testimony for BEP hearings and public process.

** denotes projects completed with other firms*

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

Casco Bay Watershed Wetland Characterization, Cumberland County, Maine (Project Manager)
Provided technical oversight for development of GIS-based Pilot assessment methodology within 985-square-mile Casco Bay Watershed in support of function-based system to identify priority wetlands throughout Maine. Activities included air photo and NWI interpretation, conducting field evaluations, generating GIS data sets and maps, and coordination with Federal and State Pilot Project Steering Committee members. Final process advanced methods for identifying wetland compensation opportunities in the region and throughout the State.

Buzzards Bay Oil Spill Impact Assessments, Boston, Massachusetts (Project Manager)
Emergency Oil Spill Response, assisted in oversight of spill response efforts on behalf of NOAA Natural Resource Damage Assessment (NRDA) team, coordinated wetland habitat and avian impact evaluations within the affected coastal zone immediately following spill, conducted intensive surveys of waterfowl and wading bird populations in oil spill area, and assisted NOAA and USFWS in preliminary planning of habitat restoration efforts. Serves as member of NOAA's NRDA team, contracted to perform scientific and ecological studies for NOAA on a nationwide basis.

Schoodic Point Assessment, Winter Harbor, Maine (Certified/Licensed Professional Forester)
Conducted a timber-based, ecological assessment of a 1600-acre parcel on Schoodic peninsula on behalf of Friends of Acadia, Acadia National Park, and Maine Coast Heritage Trust, in response to local and regional concerns over proposed timber harvesting on the parcel. A Conservation Plan was developed in cooperation with the landowner/developer, based on sustainable forest management principles, minimizing adverse impacts on adjacent Park Service lands and Park visitor experiences.

Maine Forest Sustainability, Maine (Certified/Licensed Professional Forester)
Conducted technical evaluation of State forest sustainability issues on behalf of the Maine Forest Service. Purpose of the evaluation was in support of a comprehensive analysis of state-wide forest components, conditions and susceptibility to threats. Evaluation incorporated direct interviews of professional representatives from academic institutions, the forest industry, federal and state agencies, non-government environmental organizations, resource consultants, and private researchers from across Maine.

Integrated Forest (Timber) and Wildlife Management Plans, Maine (Certified/Licensed Professional Forester, Certified Wildlife Biologist)
Developed integrated Forest and Wildlife Management Plans providing commercial and private clients with comprehensive appraisals of current and projected resource values, timber volumes and conditions, in support of a multiple-resource forest management strategy.

Municipal and Private Foundation Forest Management Plans (Certified/Licensed Professional Forester, Certified Wildlife Biologist)
Developed comprehensive forest management plans for towns as well as private land trusts and natural resource organizations interested in public, multiple-resource use. Plans frequently provide extensive natural community, stand-specific flora and fauna documentation and timber and wildlife values, as well as prevailing regulatory information.

Significant Wildlife Habitat Mapping, Central and Southern Maine (Project Manager)
Identified and mapped deer wintering areas, wetlands, and other Significant Wildlife Habitat on behalf of Maine Department of Inland Fisheries and Wildlife throughout 40 towns in southern and central Maine.

Carriage Road Rehabilitation - Acadia National Park, Bar Harbor, Maine (Project Manager)
Developed long-term vista restoration strategies for a variety of scenic forest vista types along the historic, 51-mile Carriage Road system in Acadia National Park. Work included relocation of several hundred interior and exterior viewsheds as originally envisioned and developed by JD Rockefeller and generation of a series of low-cost, silvicultural management strategies for and maintaining trees and woody vegetation associated with this public resource over the long term.

** denotes projects completed with other firms*

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

Acadia National Park Rehabilitation NEPA Documentation, Bar Harbor, Maine (Project Manager)

Directed natural resource and cultural resource assessments for reconstruction and infrastructure work on 10 major projects at Acadia National Park, including rehabilitation of 24 historic bridges, beach areas, visitor facilities, campgrounds, and power line infrastructure. Coordinated wetland and ecological surveys, production of NEPA Environmental Assessments and Categorical Exclusion documents, and coordination of local and state permitting for the projects.

New Hampshire ATV Policy Development and Trail Planning, New Hampshire (Project Manager)

Oversaw research and development of statewide ATV Trail Plan to address dramatic growth in ATV use throughout NH. Plan inventoried existing trails open to the public, including trail length and condition, organizations responsible for maintenance, funding levels, and estimated use. Using registration and demographic data, the amount of trail expansion required to accommodate the public need for the next 5 years was assessed. Identified sites for strategic acquisition and trail development by the state, reviewed the environmental sensitivity of these sites, and assessed level of funding necessary for purchases of land, easements, and rights-of-way. Also evaluated state's statutory process for development of ATV trails on public lands, including a review of environmental filter protocols.

Regional Blanding's Turtle Rapid Habitat Assessment, Southern and Central New Hampshire (Project Manager)

Oversaw landscape analysis, habitat assessment, and survey of Blanding's turtle habitat modeling results in southern and central NH. Developed regional study plan in coordination with NHFGD to assess modeling results of 15 multi-town sites (>1500 acres). Summary finding included summary results of suitable habitat conditions, new observations of Blanding's turtles, and conservation planning/management recommendations to NHFGD.

Greenbush Natural Resource Characterization, Permitting, and Environmental Monitoring, Hingham, Cohasset, and Scituate, Massachusetts (Project Manager)

Directed identification and assessment of wetland and vernal pool resources and state-listed rare wildlife and plant species relative to reconstruction of an abandoned 18-mile railroad right-of-way. Developed key mitigation (rail line crossing) design elements enabling MESA compliance for a rare species "take" and approval of required Conservation Management Permit. Conducted pilot assessment of a prototype crossing structure designed for use by spotted turtles and other urban wildlife, and oversaw monitoring of rare species pre-, during, and post-construction of the rail line including water quality monitoring of 52 on-site and control vernal pools, surface water sampling for hydrocarbon analysis, amphibian egg mass, invertebrate and vegetative community surveys, and spotted turtle radio telemetry. Provided expert witness testimony and participated in state DEP and MNHESP agency consultations on behalf of MBTA.

Wind Farm Development Surveys and Risk Assessments (Principal Scientist)

Oversaw pre-construction wind energy development surveys and risk assessments at multiple sites throughout coastal Atlantic and northeastern US. Assessments include preliminary site screening , landscape analyses, fatal flaw analyses, neo-tropical migrant surveys using NEXRAD and marine radar, acoustic bat, breeding bird, bat mist netting, and raptor surveys, and ecological community characterizations. In addition, Mr. Pelletier has aided in development of a weight-of-evidence approach to risk assessments specifically for wind farms. This risk assessment approach was presented to the annual (2007) conference of The Wildlife Society in Tucson, Arizona.

** denotes projects completed with other firms*

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

PUBLICATIONS

They're Here! BOEM Report Corroborates Belief That Bats Frequent Offshore Environment. *North American Windpower*, 2013.

Pelletier, S.K., K. Omland, K.S. Watrous, T.S. Peterson. . Information Synthesis on the Potential for Bat Interactions with Offshore Wind Facilities – Final Report. U.S. Dept of the Interior, Bureau of Ocean Energy Management, Headquarters, Herndon, VA. *OCS Study BOEM 2013-01163.*, 2013.

S.K. Pelletier, S.A. Boyden, J.S. Perkins, T.S. Peterson, K.S. Watrous. 2013. Offshore Acoustic Bat Study: 2012 Annual Report and Study Update. *U.S. Department of Energy*, 2012.

Pelletier, S.K.; T. Peterson, K. Watrous, and S. Boyden. Update on Offshore Acoustic Bat Research in Atlantic and Great Lakes Regions. *Presented at EnergyOcean International, Boston, Massachusetts*, 2012.

Pelletier, S.K.; T. Peterson; and S. Boyden. Current Coastal and Offshore Bat Studies in the New England Atlantic Region. *Presented to the Northeast Migration Monitoring Network*, 2012.

Pelletier, S.K.; T. Peterson; S. Boyden; and N. Dodge. Ongoing Offshore Bat Studies in the Gulf of Maine. *Presented at the Atlantic Wind Energy Workshop, Herndon, Virginia*, 2011.

Pelletier, S.K.; T. Vandewalle; V. Wyatt; T. Peterson; and K. Watrous. A Comparison of Fall 2009-2010 Bat Migration Activities in the Maine Offshore, Northeast, and Southern Great Lakes Regions. *Presented at the Workshop on the Ecological Effects of Wind. Indianapolis, Indiana*, 2011.

Pelletier, S.K.; T. Peterson; S. Boyden; and N. Dodge. Current Coastal and Offshore Bat Studies in the New England Atlantic Region. *NWCC/AWWI Research Webinar*, 2011.

What's Out There: Atlantic Offshore Bat and Bird Pilot Study 2009 Results. *Presented at AWEA Windpower Conference and Exhibition, Dallas, Texas*, 2010.

Gulf Of Maine Offshore Bat And Bird Pilot Study. *Presented at EnergyOcean International, Ft. Lauderdale, Florida*, 2010.

Pelletier, S.K., A.J. Gravel, and T.S. Peterson. Results of Regional Avian and Bat Migration Pilot Study in the Gulf of Maine. *Speaker Presentation at the AWEA North American Offshore Wind Conference, Atlantic City, New Jersey*, 2010.

Pelletier, S.K., G.J. Giumarro, and T.S. Peterson. Gulf of Maine Offshore Bird and Bat Pilot Study. *Speaker presentation at EnergyOcean International Conference, Ft. Lauderdale, Florida*, 2010.

Pelletier, S.K.; G.C. Kendrick; T.S. Peterson; and A.J. Gravel. Atlantic Offshore Bird & Bat Pilot Study: 2009 Results. *Poster Presentation at AWEA Offshore Energy Conference, Atlantic City, New Jersey*, 2010.

Pelletier, S.K.; T.S. Peterson; and G.C. Kendrick. Understanding of the Current Knowledge of Offshore Wind and Wildlife Issues. *Presented at NWCC Wind Wildlife Research Meeting VIII; Lakewood, Colorado*, 2010.

Pelletier, S.K., T.S. Peterson, and G. Kendrick. Gulf of Maine Offshore Bird and Bat Migration Pilot Study. *Speaker Presentation at NWCC Wind Wildlife Research Meeting VIII, Lakewood, Colorado*, 2010.

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

Pelletier, S.K., G.J. Giumarro, and G.C. Kendrick. Gulf of Maine Offshore Bat and Bird Pilot Study. *Poster Presentation at the AWEA Offshore Wind Project Workshop, Boston, Massachusetts*, 2009.

Pelletier, S., G. Kendrick, G. Giumarro, T. Peterson, and A. Gravel. Gulf of Maine Offshore Bat and Bird Project. *Poster Presentation at AWEA Offshore Energy Conference; Boston, Massachusetts*, 2009.

Pelletier, S.K. Forest biomass – the good, the bad, the ugly. *Speaker Presentation at New England Society of American Foresters Conference; Portland, Maine*, 2009.

Giumarro, G., S. Pelletier, K. Watrous, T. Peterson, and J. Johnson. Seasonal Distribution of Tree Bats in the Northeast Using Passive Acoustic Sampling. *Poster Presentation at AWEA Windpower Conference and Exhibition, Chicago, Illinois*, 2009.

Radar and Acoustic Bat Surveys in Pre- and Post-Construction Bird and Bat Mortality Monitoring. *Presented at AWEA Windpower Annual Meeting; Houston, Texas*, 2008.

Pelletier, S.K., A.J. Gravel, and T.S. Peterson. Nocturnal avian flight heights relative to risk of collision with wind turbines. *Presented at NWCC Wind Wildlife Research Meeting VII, Milwaukee, Wisconsin*, 2008.

Pelletier, S.K., C.W. Meinke, T.S. Peterson, and A.J. Gravel. Radar and acoustic bat surveys in pre- and post-construction bird and bat mortality monitoring. *Poster Presentation at 2008 AWEA Conference in Los Angeles, California*, 2008.

Windpower and Wildlife: Survey Techniques, Impacts, and Future Research. *Speaker Presentation at Hoffman Bird Club Annual Meeting; Pittsfield, Massachusetts*, 2007.

MBTA Greenbush Rail Line - Wildlife Crossing Demonstration Project. *Presented at International Conference on Ecology and Transportation (ICOET); San Diego, California*, 2005.

Giumarro, G.J. and S.K. Pelletier. Rare Turtle Tracking and Mitigation Associated with Infrastructure Development. *Presented at North American and Natural Resources Conference, Washington, DC*, 2005.

Windpower and Wildlife – Risks and Benefits. *Speaker Presentation at The Wildlife Society New England Fall Meeting*, 2004.

Railroad Crossing Structures for Spotted Turtles. *International Society of Wetland Scientists 25th Anniversary Conference, Charting the Future: A Quarter Century of Lessons Learned; Seattle, Washington; with others*, 2004.

A Survey of Potential Vernal Pool Habitats in the Town of Falmouth, Maine. *Association of State Wetland Managers (ASWM) National Symposium, Wetlands 2003: Landscape Scale Wetland Assessment & Management; Nashua, New Hampshire; with others*, 2003.

Wildlife and critical habitat concerns associated with windpower facilities. *New England Wind Power Siting Workshop; Boston, Massachusetts*, 2001.

A GIS-based Wetland Characterization of the Casco Bay Watershed – A Pilot Study. *Society of Wetland Scientists (SWS) Quebec 2000: Millennium Wetland Event*, 2000.

Steven K. Pelletier PWS, CWB, LPF

Principal, Environmental Management

Biodiversity in the Forests of Maine: Guidelines for Land Management. *UMCE Bulletin #7147, University of Maine Cooperative Extension; with others*, 1999.

An analysis of forest sustainability issues in Maine. *Maine Forest Service and Maine Natural Areas Program*, 1996.

Distribution and abundance of breeding birds and small mammals in the high salt marsh and adjacent upland critical edge in southern Maine. *Maine Biological and Medical Science Symposium; Bowdoin College; Brunswick, Maine; with others*, 1986.

Bryan P. Emerson

Project Manager, Wetland Scientist

Bryan is a Project Manager and Wetland Scientist responsible for conducting and coordinating a variety of natural resource projects, including wetland delineations, vernal pool surveys, wetland mitigation planning and design, wildlife monitoring, wildlife habitat assessments, and invasive species management. These projects have involved data analysis, quality control review, and technical report writing. He has assisted clients in the preparation of federal, state, and local permit applications, and is experienced in designing wetland mitigation projects, preparing compensation plans, and conducting long-term monitoring of mitigation sites. Bryan has direct field experience in manual and chemical invasive species control and the development of invasive species management plans.

Prior experience includes designing, managing and installing wetland and stream restoration projects in Seattle, WA. Projects included native plant installation, invasive species control, stream channel modifications, bank and slope stabilization, and wetland creation and restoration. Bryan has led youth conservation crews in Vermont and has conducted field and laboratory studies on the impact to aquatic environments by non-native zebra mussels.

EDUCATION

Bachelor of Science, Environmental Science, Chemistry Minor, University of Vermont, Burlington, Vermont, 2000

Introduction to AutoCAD, Maine Technical Source, Yarmouth, Maine, 2011

Wilderness First Aid, SOLO, Topsham, Maine, 2012

Heartsaver CPR Certification, SOLO, Topsham, Maine, 2012

40-Hour Hazwoper Certification, OSHA, Topsham, Maine, 2012

REGISTRATIONS

Professional Wetland Scientist #2352, Society of Wetland Scientists

Certified Wetland Scientist #276, State of New Hampshire Board of Natural Scientists

Commercial Master Applicator #CMA44218/5 6D, Maine Board of Pesticides Control

MEMBERSHIPS

Member, Society of Wetland Scientists

Recognized Wetland Delineator, New Brunswick Department of Environment

Member, Association of State Wetland Managers

Member, Maine Association of Wetland Scientists

PROJECT EXPERIENCE

Natural Resource Services

Topsham Trails Natural Resource Surveys and Permitting, Topsham, Maine (Project Manager)

Managed all aspects of field surveys for a 1-mile bike path, including wetland delineation; vernal pool survey; and rare, threatened, and endangered species survey. Assisted the client in developing a preliminary design that would minimize natural resource impacts. Worked with state and federal regulators to navigate a complicated permitting process involving multiple amendments to existing permits and the preparation of new permit applications.

Bryan P. Emerson

Project Manager, Wetland Scientist

York Police Station Project, York, Maine (Project Manager)

Performed wetland delineation and function-value assessment for a proposed police station and associated access road. Conducted a mitigation site search, including field assessments of potential mitigation sites, and prepared a Wetland Compensation Plan to mitigate for the proposed wetland and vernal pool buffer impacts at the project site. Attended meetings with regulatory agencies to discuss the project, permitting, and proposed mitigation plan. Prepared applications and received a Tier 2 Natural Resource Protection Act permit and a U.S. Army Corps of Engineers Category 2 permit on behalf of the client.

Callahan Mine OU1 Remediation, Wetland Creation Plan, Brooksville, Maine (Project Manager)

Worked with Senior Scientists to develop a wetland creation plan to compensate for wetland impacts resulting from remedial actions to cleanup PCB and heavy metal contamination at a Superfund site. The plan included approximately 1 acre of wetland creation within a portion of the mine site where contaminant cleanup recently occurred. Creation of open water and emergent wetland areas was proposed through site grading and use of existing subsurface hydrology to establish conditions suitable for the establishment of wetland vegetation. This project was considered the first in a series of wetland compensation projects that will continue as cleanup of the mine progresses.

Vigo Captain Daviess Mine Wetland Mitigation Plan, Daviess County, Indiana (Project Scientist)

Assisted Project Manager and Senior Scientists with the development of a wetland mitigation plan to compensate for approximately 11 acres of impact to forested and emergent wetland associated with a proposed coal mine in southern Indiana. Developed a conceptual mitigation plan using regionally accepted mitigation ratios that included 22 acres of wetland creation in an existing agricultural field that is subject to periodic flooding from an adjacent river system. Creation of open water, emergent, and forested wetland areas was proposed through site grading and construction of a berm to trap flood waters and surface drainage to establish hydrology suitable for the establishment of wetland vegetation.

Hancock Wind Project, Hancock, Maine (Technical Lead)

Assisted Project Manager with many aspects of a proposed wind energy project in eastern Maine. Performed QA/QC and data management of natural resource survey data collected by field scientists and included in subsequent natural resource reports. Assisted Project Manager with preparation of Maine Site Location of Development Act permit application by coordinating completion of various application components, including wetland/wildlife reports, buffers and vegetation maintenance plans, and flooding, groundwater, and solid waste sections.

Rollins Wind Project Invasive Species Monitoring, Lincoln, Maine (Project Manager)

Conducted invasive species surveys along a recently constructed transmission line right-of-way according to the standards and methods developed in the Invasive Species Management Plan. Identified invasive species, documented populations, and applied either chemical or manual control measures based on the presence of mapped natural resources and the criteria defined in the Vegetation Maintenance Plan. Prepared the final monitoring report documenting the presence of invasive species within the right-of-way and submitted the report to state and federal natural resource agencies.

Kennebec Estuary Land Trust Invasive Species Control (Project Manager)

Coordinated and conducted invasive species control at four land preserves. Developed different treatment plans to meet the requirements of the land trust and adjacent landowners, and to facilitate effective treatment of the target species. Control methods included manual control and herbicide application techniques such as broadcast spraying using a low-pressure backpack sprayer, targeted spot spraying with a hand-held sprayer, "cut and paint" treatments on large woody species, and "clip and drip" treatments on sensitive wetland species..

** denotes projects completed with other firms*

Bryan P. Emerson

Project Manager, Wetland Scientist

FedEx Ground Wetland Mitigation Site Monitoring, Saco, ME (Project Manager)
Performed mitigation monitoring at a 37,000 square foot wetland creation site to determine if the site was in compliance with the required performance standards. Met with state and federal regulatory agencies regarding the project and developed a modified mitigation monitoring plan to satisfy permit conditions. Performed associated invasive species control on the site as part of the mitigation monitoring efforts.

Oakfield Wind Project, Oakfield, Maine (Technical Lead)
Assisted Project Manager with many aspects of a proposed wind energy project in northern Maine. Prepared an alternatives analysis for the 60-mile transmission line associated with the project. Performed QA/QC of natural resource survey data collected by field scientists and included in subsequent natural resource reports. Prepared sections of state and federal permit applications, including buffers, vegetation maintenance plan, and invasive species management plan. Also performed wetland delineations in support of project design changes.

Conceptual Wetland Mitigation Design Plan, Lower Churchill River, Labrador, Canada (Project Scientist)
Assisted with the development of a conceptual design plan for the creation of marsh habitat as mitigation for anticipated wetland impacts associated with the construction of two proposed hydroelectric dams and the resulting reservoirs. Conducted an extensive review of scientific literature to identify projects or studies where similar marsh habitats were created adjacent to lakes or reservoirs in similar ecosystems. Worked with Senior Scientists to develop a matrix of proposed sites based on project-specific criteria and assisted with the preparation of a conceptual design report.

Invasive Species Management Plans, Wind Energy Projects, Maine (Project Scientist)
Developed management plans for the identification, control, and monitoring of invasive species along proposed collector and transmission lines associated with several wind energy projects in Maine. Management plans were developed to satisfy U.S. Army Corps of Engineers guidelines for Category 2 permit applications. Compiled data from natural resource surveys to determine known and potential invasive species presence in the project area.

Critical Issues Analysis, Wind Energy Project, Maine (Project Scientist)
Conducted field surveys and desktop analyses to support the development of a critical issues analysis for a large wind energy project in Maine. Tasks included analyses of mapped natural resources, Significant Wildlife Habitat, mapped cultural and historic resources, documented scenic resources, landowner issues (sound, shadow flicker, safety), and federal, state, and local permitting concerns. The data were synthesized into a technical report for the client that provided recommendations for project design and planning.

Aerial Bald Eagle Surveys, Wind Energy Projects, Maine (Field Lead)
Coordinated and conducted aerial surveys for bald eagle nests around proposed wind energy projects throughout Maine. Prior to flights, analyzed historic data and identified potential nesting habitat within the project areas in order to focus survey flights. Survey flights focused on identifying new nest locations and monitoring the status of known nest locations. Regularly coordinated with clients and state and federal regulators to modify survey protocols.

Natural Resource Surveys, Chester to TDR2 WELS, Maine (Project Manager)
Coordinated all field survey efforts for natural resource surveys along 68 miles of proposed transmission line. Performed vernal pool surveys and wetland delineations throughout various portions of the project. Conducted landscape analysis of significant wildlife habitat along the proposed line and presented these findings to state wildlife agencies. Served as the primary contact for surveyors, engineers, and the client for environmental issues, and assisted with aspects of the permitting process.

Granny Hole Natural Resource Surveys and Permitting, Topsham, Maine (Project Manager)
Performed a wetland delineation and function-value assessment for a proposed parking lot expansion associated with a new wellness center. Attended meetings with the client and state and federal regulatory agencies to develop a design that would minimize natural resource impacts. Assisted the client with preparing state and federal permit applications.

** denotes projects completed with other firms*

Bryan P. Emerson

Project Manager, Wetland Scientist

Pond 197, Stream Restoration Project*, Bellevue, Washington (Project Manager)
Managed all aspects of a stream restoration project, including coordination of the work crew and heavy equipment operators and consultation with city inspectors, on Valley Creek in Bellevue, WA. The crew excavated a side channel to route high flows through an existing wetland/pond, and installed stream gravel, log weirs, bank logs, and numerous other pieces of large woody debris in the stream. The project was intended to improve fish passage and high flow refuge for fish in the creek while improving water quality.

Valley Stream Restoration Project*, Bellevue, Washington (Project Technician)
Worked with a crew to install approximately 100 pieces of large woody debris in lower Valley Creek as log polygons, bank logs, and other structures, to stabilize the creek and provide fish habitat. No heavy equipment was allowed on the project site, and the logs were moved and installed using overhead lines, rigging, and hand labor.

Glacier NW Wetland Mitigation*, Everett, Washington (Project Manager)
Managed and assisted with the construction of the wetland and wetland buffer restoration and enhancement required as compensation for filling of wetlands done when Glacier NW created an Aggregate Sales Yard on the project site. Restoration included soil grading and amendment, planting over 1500 native trees and shrubs, and removing invasive plant species. Coordinated the design and installation of a six-zone overhead irrigation system over the 3-acre site to irrigate the installed shrubs and trees.

Stetson Wind Farm, Maine (Project Technician)
Performed wetland delineations, vernal pool surveys, and other natural resource mapping for a 38-turbine wind farm in eastern Maine.

Line 56 Transmission Line, Maine (Project Technician)
Performed wetland delineations, vernal pool surveys, and other natural resource mapping for transmission line in northern Maine. Assisted with permit preparation by coordinating wetland delineation and vernal pool survey results and processing them into a final report.

Wildlife Habitat Assessment, Leeds, Maine (Project Manager)
Conducted an assessment of mapped significant wildlife habitat, specifically Deer Wintering Area and Inland Waterfowl/Wading Bird Habitat. Surveys were performed to assist the landowner with settling a state permit violation. Met with state natural resource agencies to discuss results and coordinated with the agencies to resolve the issues by finding a solution that satisfied both the client and the state. Assisted the client with preparing state environmental permit.

Bald Eagle Monitoring, Skowhegan and Old Town, Maine (Project Manager and Field Lead)
Conducted aerial monitoring of bald eagle nests in two survey areas in Maine. Aerial surveys were performed to monitor breeding success and egg hatching. Performed ground surveys to retrieve unhatched bald eagle eggs from nests and assisted in processing the eggs to be shipped out for contaminant analysis. Coordinated all aspects of field and lab work and regularly corresponded with state agencies to adjust field survey efforts.

** denotes projects completed with other firms*

Bryan P. Emerson

Project Manager, Wetland Scientist

PUBLICATIONS

Emerson, B., D. Knapp, and G. Carpentier. Potential Alteration of Wetland Functions and Values from Dam Removal. *Poster presented at New England Water Environment Association 2010 Annual Conference, Boston, Massachusetts*, 2010.

Emerson, B., D. Knapp, J.D. DeGraaf, and G. Carpentier. Potential Impacts to Wetland Functions and Values from Dam Removal. *Poster presented at The Diadromous Species Restoration Research Network Science Meeting, University of Maine, Orono, Maine*, 2009.

Thomas Tetreau

Project Scientist

Tom is a Project Scientist responsible for leading and coordinating a variety of natural resource projects, including wetland delineations, vernal pool surveys, functional assessments, wildlife monitoring, construction and compliance monitoring, and invasive species management. He also assists in the preparation of federal and state permit applications and GIS map production.

Tom has worked on a variety of natural community and rare plant survey projects ranging from general reconnaissance-level surveys to quantitative, community- and species-specific surveys involving natural community mapping and analysis for transportation projects, utility corridors, and development sites.

Prior to joining Stantec, Tom served as a mapping technician and assisted in the development of a mitigation plan for the Franklin County, Maine Emergency Management Agency.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2008-Present. Project Scientist.
- Stantec Consulting. 2007-2008. Project Technician.
- Woodlot Alternatives, Inc. 2006-2007. Project Technician.
- DeLorme Mapping. 2005. Map Technician.
- HNTB Corporation. 2004. Traffic Engineering and Transportation Planning Assistant.

EDUCATION

BA, Environmental Planning and Policy, University of Maine, Farmington, Maine, 2005

United States Army Corp of Engineers Wetland Delineator Methods, University of New Hampshire, Durham, New Hampshire, 2007

40-hour HAZWOPER Certified, OSHA, Topsham, Maine, 2008

OSHA 10-Hour Construction Certification, Topsham, Maine, 2012

Wilderness First Aid Certified, SOLO, Topsham, Maine, 2014

Heartsaver CPR Certified, SOLO, Topsham, Maine, 2014

Certified in Adult CPR, American Red Cross, Topsham, Maine, 2014

OSHA 8-Hour HAZWOPER Refresher Certification, Topsham, Maine, 2014

REGISTRATIONS

Certified Professional in Erosion and Sediment Control #5826, Certified Professional in Erosion and Sediment Control, Inc.

Certified Wetland Scientist #283, State of New Hampshire Board of Natural Scientists

Commercial Operator #COA44344/5, 6A, 6B, Maine Board of Pesticides Control

MEMBERSHIPS

Member, Association of State Wetland Managers

Member, Maine Association of Wetland Scientists

** denotes projects completed with other firms*

Thomas Tetreau

Project Scientist

PROJECT EXPERIENCE

Natural Resource Services

Oakfield Wind Project, Aroostook County, Maine (Project Scientist and Field Lead, Environmental Monitor)

Conducted wetland delineations, vernal pool surveys, and Global Positioning System surveys on the proposed wind farm and transmission line routes. Prepared study plans and conducted deer wintering area surveys at several locations along the 60 mile transmission line. Provided construction and environmental compliance monitoring for the installation of six open-bottom culverts designed to enhance fish passage under an existing gravel road. Marked wetlands, streams, vernal pools, significant wildlife habitat and associated buffers along the 60-mile transmission line prior to clearing activities and again prior to construction activities.

Bingham Wind Project, Somerset and Piscataquis County, Maine (Project Scientist and Field Lead)

Led field crews and conducted wetland delineations and vernal pool surveys on over 10,000 acres of ridgeline and over 30 miles of transmission line corridor. Conducted data analysis and quality review of field data. Assisted with the completion of MDEP and Corps permit applications including wetland, wildlife, and fisheries reports and alternatives analysis.

Hoosac Wind Project, Florida and Monroe, Massachusetts (Environmental Monitor)

Provided environmental oversight during the construction phase of the project. Worked closely with construction crews to maintain environmental compliance while working in or near jurisdictional resources and buffer zones. Advised crews on proper placement and installation techniques of temporary erosion and sediment controls. Provided weekly reports to the client and MassDEP detailing construction activities, environmental inspections, and non-compliance issues.

Gas Pipeline Wetland Delineation and Monitoring, West Virginia, Pennsylvania, and Ohio

Conducted wetland delineation and monitoring work along existing and proposed natural gas pipelines in West Virginia, Ohio, and Pennsylvania. Determined wetland boundaries using the technical criteria described in the Regional Supplement to the U.S. Army Corps of Engineers Wetland Delineation Manual Northcentral and Northeast Region, Version 2.0. Wetland monitoring work included invasive species surveys.

Confidential Wind Projects, Maine and New Hampshire (Project Scientist)

Conducted critical issue analysis of several potential wind power sites to identify natural and culture resources within the vicinity of the project that could affect development of the project.

Confidential Wind Project, New Hampshire (Project Scientist)

Conducted a visual impact review of a potential wind power project from points on the National Register of Historic Places, public view points, and hiking trails in the surrounding area. Photographed the project area from several view points, photographs were used to produce photo simulations of wind turbines on the proposed project site.

Confidential Wind Projects, Maine (Project Scientist and GIS Analyst)

Conducted reconnaissance surveys at dozens of sites across the state to identify locations for temporary meteorological test towers while avoiding impacts to wetlands, streams, vernal pools, and other wildlife habitat. Collected GPS data and created maps of final locations to include in permit applications.

Norwottuck Rail Trail Rehabilitation, Northampton to Belchertown, Massachusetts (Project Technician)

Performed wetland and waterbody resource delineation surveys of an 11-mile pedestrian and bicycle trail as part of permit requirements for widening and resurfacing.

Invasive Species Removal, Georgetown, Maine (Licensed Commercial Pesticide Applicator)

Successfully performed herbicide treatment on Japanese barberry at a public land trust site as part of an on-going monitoring and treatment program.

Invasive Species Removal, Scarborough, Maine (Licensed Commercial Pesticide Applicator)

Successfully performed herbicide treatment and removal of purple loosestrife and European alder at a wetland mitigation site as part of an ongoing monitoring program.

** denotes projects completed with other firms*

Thomas Tetreau

Project Scientist

Bald Eagle Nesting Surveys, Maine (Project Scientist)
Worked closely with the Maine Department of Inland Fisheries & Wildlife to conduct aerial surveillance of nesting Bald Eagles near constructed and proposed wind power projects in Maine and along the Kennebec River as part of permit compliance requirements for several paper company facilities on the river.

Record Hill Wind, Roxbury, Maine (Project Scientist)
Assisted with MDEP and Corps requirements subsequent to permit issuance by marking wetlands, streams and vernal pools prior to clearing of the wind farm. Also assisted with identification and impact evaluation of access points, provided field support for initial clearing and subsequent construction of the project, and responded to special situations of emergency or critical nature.

Rollins Wind Project, Lincoln, Maine (Project Technician)
Conducted wetland delineations, vernal pool surveys, and Global Positioning System surveys of the wind farm. Participated in preparation of state and federal permits.

Wind Farm Prospecting, Maine (GIS Analyst)
Identified several potential wind farm locations in Eastern Maine based on GIS analysis and field reconnaissance.

Downeast LNG Terminal and Pipeline Project, Maine (Project Technician)
Assisted with a variety of environmental resource evaluations, potential impacts, and map production for the proposed development of a liquid natural gas port facility and 30-mile gas pipeline.

Stetson Wind Project, Washington County, Maine (Project Technician)
Assisted with MDEP and Corps requirements subsequent to permit issuance by marking wetlands, streams and vernal pools prior to clearing for the transmission line; assisting with identification and impact evaluation of access points; providing field support for initial clearing and subsequent construction of the transmission line; and responding to special situations of emergency or critical nature. Participated in on-going vernal pool research project related to the effects of transmission line development on amphibian breeding.

Grand Manan Wind Project, Grand Manan Island, New Brunswick, Canada (Project Scientist and Field Lead)
Participated in the ecological characterization of the site of the proposed wind farm. Conducted and supervised wetland delineations and Global Positioning System surveys of the project area. Participated in preparation of provincial and federal permits.

Large Scale Wind Farm Projects, Galloo Island, New York and Michigan (Project Technician)
Conducted avian radar surveys using marine radar on a remote island to document the abundance, flight patterns, and flight altitudes of night-migrating species. Also recorded weather conditions and ceilometer observations and collected temperature, relative humidity, and dew point data using data loggers (HOBO Pro v2 U23-001, Onset Computer Corporation) placed in appropriate locations.

Mapping of Cross Country Ski Trails*, Mt. Blue State Park, Maine (Field Technician and Lead GIS Analyst)
Created an improved map of the park's cross-country ski trails. The map was submitted to the Maine Bureau of Parks and Lands for distribution at the trail head. The project was presented at the New England and St. Lawrence Valley Geographical Society in Portland, Maine, and to the Association of American Geographers' 2004 annual meeting in Denver, Colorado.

Disaster Mitigation Plan*, Franklin County, Maine (Planning Assistant)
Collected data, recorded GPS points, and created maps of each town in Franklin County, Maine, for use by the Emergency Management Agency in the Franklin County Disaster Mitigation Plan.

** denotes projects completed with other firms*

Thomas Tetreau

Project Scientist

PUBLICATIONS

In-House Workshop, Stantec. *Advanced GPS Techniques*, 2009.

In-House Workshop, Stantec. *Stream Delineation Methods and Tips*, 2014.

Poster Presentation. Adaptive Techniques for Large Scale Delineations. *International Wetlands Conference, Florida*, 2012.

Joy Y. Prescott

Project Manager

Ms. Prescott is responsible for providing large-scale project management, NEPA documentation, permitting assistance, and natural resource planning. She has specific management experience in the development of utility-scale alternative energy projects, including development of required NEPA environmental impact statements. She has also managed staffing, implementation, and reporting for Stantec's many wind power related field studies and has coordinated more than 40 studies over the past several years. Her prior experience includes identifying conservation options and creating site improvement and management plans.

Her information management and reporting skills include project planning and tracking, budget development and tracking, database system management, data compilation and analysis, technical presentation development, and multimedia document production. She has considerable permitting experience, including data collection for FERC pipeline, power, and wind projects; avoidance and minimization support; NEPA compliance and documentation; and state environmental permit exhibit preparation.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager.
- Woodlot Alternatives, Inc. 2005-2007. Project Manager.
- Land Trust Alliance. 2004-2005. Project Coordinator.
- Independent Consultant. 2003-2004.
- Akibia, Inc. 1999-2002. Principal Consultant.
- Systems Engineering, Inc. 1998-1999. Analyst.
- Cambridge Technology Partners. 1996-1998. Consultant.

EDUCATION

MA, Landscape Planning and Design, Conway School of Landscape Design, Conway, Massachusetts, 2003

BA, Economics, Smith College, Northampton, Massachusetts, 1996

MEMBERSHIPS

Member, Town of Brunswick Department of Planning and Development, Conservation Commission

Member, Maine Association of Planners

PROJECT EXPERIENCE

Natural Resource Services

Confidential Wind Projects, New Hampshire, Vermont, New York, Pennsylvania, Ohio, West Virginia (Project Manager)

Managed pre-construction fieldwork surveys and impact assessments at multiple sites in the Mid-Atlantic, New England and the Midwest. The assessments include habitat analyses, fatal flaw analyses, migration surveys using marine radar, acoustic bat surveys, breeding bird surveys and raptor surveys. Ms. Prescott has effectively served as liaison between clients and regulatory agencies to ensure that studies and monitoring plans are in accordance with federal and state guidelines.

Moresville Wind Project, Delaware County, New York (Project Manager)

Coordinated and prepared comment responses to Draft Environmental Impact Statement.

** denotes projects completed with other firms*

Joy Y. Prescott

Project Manager

Sheffield Wind Project, Vermont
Managed pre-construction fieldwork and reporting for proposed wind energy project. Coordinated documentation and responses for Section 248 Discovery, Testimony and Rebuttal.

Oakfield Wind Project, Washington County, Maine (Project Manager)
Provided project management and planning services. Coordinated fieldwork and deliverables for natural and cultural resource assessments and assisted in permitting.

Rollins Wind Project, Penobscot County, Maine (Project Manager)
Provided project management and planning services. Managed fieldwork and deliverables for natural and cultural resource assessments. Coordinated consultations with state and federal agencies and helped to coordinate state and federal environmental permitting.

Cape Wind EIS, Nantucket Sound, Massachusetts (Project Manager)
Stantec participated in the federal environmental permitting effort for the Cape Wind project in Nantucket Sound, Massachusetts. As Project Manager and Regulatory Specialist, Joy was instrumental in the coordination and development of NEPA documentation for the project. She was responsible for preparing and reviewing sections of the Draft and Final Environmental Impact Statement and Biological Assessment documents as well as responding to comments regarding issues raised by public and government entities. Her work also included extensive literature reviews, analysis of applicant field survey data concerning avian and bat species distribution and behavior, and informal and formal consultations with USFWS staff and MMS.

** denotes projects completed with other firms*

Christopher Smith, P.E.

Vice President – Wind Energy

Christopher Smith, P.E. has managed engineering, permitting, and survey aspects for Wind Power projects ranging from the Southwest to the Northeast. The projects have included **over a GigaWatt of power, 850 turbines, 550 miles of access roads, 430 miles of public roads, and 2000 culverts, pipes, and bridges**. The following is a brief summary of select projects. Additional projects and references can be provided upon request.

Number Nine Wind Farm, Maine: Being the largest wind farm in the State of Maine to date, producing 250 MW of electricity, this project includes 125 turbine sites, 130 miles of access roads, 130 miles of overhead and underground collection lines, and 60 miles of overhead transmission lines. Located in a rural mountainous region of Maine, this project presented challenging terrain in which to provide a safe route to deliver components to the project area while avoiding important natural resources such as wetlands and vernal pools. Mr. Smith is the project manager and overseeing the engineering and QA/QC of the project.

State University of New York, College at Canton: Mr. Smith is currently the managing the Civil Engineering, Geotechnical, and Environmental permitting work associated with a new 2 MW turbine at SUNY Canton. As a partner to Sustainable Energy Development, we are completing the grading and drainage design for the turbine site & access drive, turbine & access drive borings, seismic & resistivity testing, and wetland delineation work.

Timber Road Wind Farm, Phases I, II, & III: Mr. Smith managed these projects which collectively will include 200 MW of generating capacity in Paulding County, Ohio. Fisher Associates was retained to complete the access road design, public road upgrade design, drainage design and SWPPP preparation, ALTA survey for over 300 parcels, stakeout of the project at various stages of development, Landowner and Utility coordination and exhibits, grading plans for the laydown yards and substations, and Crop damage survey. During the course of the design, the project owner had three different engineers leading the project and Mr. Smith effectively kept the design efforts on schedule and budget. He acted as the Owner's representative at internal, landowner, public, and agency meetings. The design included over 50 miles of access roads and public road upgrades to 35 intersections. The project area included four high pressure gas transmission lines and a crossing of Norfolk Southern Railroad. To date Timber Road II has completed construction and is the first commercial scale wind farm in operation in Ohio.

Alabama Ledge Wind Farm: Mr. Smith was the Project Manager for this proposed 80 MW wind power project in the Town of Alabama, Genesee County New York. Fisher Associates substantially completed the design of over 15 miles of new roadways connecting the turbine locations to the public roads. We also completed the SWPPP for the project, performed the Geotechnical assessments, and assessed the loading capacity of the bridges and culverts along the transportation route and all of the ALTA survey work.

Professional Background

Education

- UMass-Amherst, M.S., Civil Engineering, 2000
- SUNY Geneseo, BS, Applied Physics, 1998
- PSMJ Project Management Training
- OSHA 10-hour training

Registrations

Professional Engineer

Years of Experience

- 15

Affiliations

- AWEA
- Institute of Transportation Engineers
- American Planning Association
- American Society of Civil Engineers

Areas of Specialization

- Wind Power
- Highways
- Permitting
- Traffic operations and analysis
- Safety investigation and accident analysis.
- Noise and Air Quality analysis
- 3D Visualization & Public Participation

Desert Wind Farm: Mr. Smith managed the Preliminary Design and Permitting phase of the 300 MW Desert Wind project in North Carolina. The project includes over 150 turbine sites with over 80 miles of access roads, 70 miles of collection lines, and 65 miles of crane walks on drained agricultural fields. This is the first commercial scale wind power project in North Carolina and required close coordination with the State regulatory agencies as most regulations were not created contemplating wind power projects. The project also ranges from a few feet to a maximum of 14 feet above sea level making the drainage and stormwater design particularly challenging. The Preliminary Design needed to be completed in a short 2 month window to keep the project on track with Army Corp permitting. Fisher Associates created a GIS program that automated production of over 1,500 temporary and permanent wetland impact figures. What would have typically taken weeks took days. This saved the client both time and money.

Steven C. Mellott, P.E.

Design Engineer

Minimizing construction costs while providing a design that works for the project is essential to any development project. This concern is amplified when property is limited, terrain is challenging, and wind powered turbines are involved. Understanding the concerns of the wind industry while knowing the regulations and having the ability to methodically work through the permit process is an asset. Steven Mellott, P.E. will provide a solid design that works for your needs. He knows the regulations, the permit contacts, and the procedures to follow. Here are his representative projects:

Number Nine Wind Farm, Maine: Being the largest wind farm in the State of Maine to date, producing 250 MW of electricity, this project includes 125 turbine sites, 130 miles of access roads, 130 miles of overhead and underground collection lines, and 60 miles of overhead transmission lines. Located in a rural mountainous region of Maine, this project presented challenging terrain in which to provide a safe route to deliver components to the project area while avoiding important natural resources such as wetlands and vernal pools. Mr. Mellott led a design team and provided day-to-day contact with the owner and other consultants involved with the project to meet the project goals.

Headwaters Wind Farm, Indiana: Located within prime agricultural areas in Indiana near the Ohio border, this project will generate 200 MW of electricity, enough for 51,000 homes. Mr. Mellott assisted in the design and permitting of 100 turbine sites, associated public and private access roads, and underground collection lines. Utilizing cement stabilized gravel access roads, the disturbances to valuable agricultural land was able to be kept to a minimum while remaining strong enough to withstand delivery and construction loading. In addition, Mr. Mellott developed the site plans for the Operation and Maintenance facility that will be used for the life of the project.

Desert Wind Farm, North Carolina: Mr. Mellott assisted in the design and permitting efforts of the 300 MW Desert Wind project in North Carolina. The project includes over 150 turbine sites with over 80 miles of access roads, 70 miles of collection lines, and 65 miles of crane walks on drained agricultural fields. He has provided grading and stormwater design solutions that work with the challenging conditions of the project. With an elevation that ranges from a few feet to a maximum of 14 feet above sea level, high ground water and flat slopes presented opportunities to implement creative design components to meet stormwater and erosion control requirements. With a relatively short 2 month window to keep the project on track with Army Corp permitting, Steve was a part of a team of 8 engineers, technicians, and GIS specialists that were utilized to complete the design and permitting efforts.

South Mountain Wind Farm, New York: Located within the New York City Watershed at the western edge of the Catskill Mountains, this 20 MW wind farm consisted of 4 miles of new access roads, 2.5 miles of underground collection lines, and 8 wind turbine sites. Mr. Mellott provided preliminary engineering services for this project in order to meet the New York City Department of Environmental Protection (NYCDEP) permitting requirements. Being a part of the watershed that provides for the City's drinking water, stringent water quality requirements were met by implementing creative design solutions such as vegetative swales, ponds, and level spreaders. A Stormwater Pollution Prevention Plan (SWPPP) was prepared for the project to meet both the NYCDEP and the New York State Department of Environmental Conservation standards and requirements.

Professional Background

Education

- Michigan Technological University, B.S., Civil Engineering, 2000
- Jackson Community College, Associates in Science ,1997

Years of Experience

- 15

Registrations

- Professional Engineer:
  New York
  Michigan
  Pennsylvania
  Maine
- NCEES Record

Areas of Specialization

- Hydrologic Studies
- Hydraulic Modeling using Hec-Ras
- Stormwater Quantity & Quality Control.
- Erosion & Sediment Control
- Highway Crossing Permits
- Wetland Permits
- Utility Permits and Extensions
- U. S. Corps of Engineer Joint Permits
- Site Development

Curtis Vernor, P.E.

Supervising Engineer – Houston Transmission

With ten years of experience in many aspects of high voltage power engineering, Mr. Vernor has knowledge of transmission line routing, design and construction. These areas are highlighted specifically with large familiarity in distribution and transmission line design from 12 kV to 500 kV.

RESPONSIBILITIES

Mr. Vernor has been responsible for the design of over 50 transmission and distribution line projects from 12 kV up to 500 kV including route surveys & planning; structure spotting; conductor, line hardware and insulation selection; crossing design; structure and conductor loading; and line design, modeling, and analysis. He is responsible for all technical, professional development, schedule, and financial goals for Dashiell's Houston transmission and distribution engineering operations.

RECENT PROJECTS

Served as Supervising Engineer for the following projects:

- 500 kV, 115kV – Entergy Holland Bottom Tie Lines, Arkansas
- 230 kV – Valero Port Arthur South Sub Lines, Texas
- 230 kV – SNF Double Ckt Line, Louisiana
- 138 kV, 69kV – Dow Freeport 138kV and 69kV Line Modifications, Texas
- 138 kV – Dow Solar Plant 138kV Lines, Michigan
- 138 kV – Panda Sherman 138kV Gen Tie Line, Texas
- 138 kV – Lone Star NGL Mont Belvieu Lines, Texas
- 138 kV – Valero Three Rivers – Flare Gas Recovery 138kV Lines, Texas
- 115 kV – Oxy West Seminole 115kV Transmission Line, Texas
- 15 kV – Oxy Denver City Distribution Lines, Texas
- 15 kV – Denbury Resources 32MVA Lines, Texas

Served as Design Engineer for the following projects:

- 345 kV, 138 kV, 69 kV – PACIFICORP Oquirrh Various Inter-tie Lines, Utah
- 230 kV – Shintech SPP2 Line Expansion Project, Louisiana
- 138 kV – Dow Line 02, Texas
- 138 kV – CPS Cibolo Creek Line Modification, Texas
- 138 kV – LDH Energy Mont Belvieu Line, Texas

Served as Field Engineer for the following projects:

- 500 kV – Tehachapi Renewable Transmission Project, California
- 345 kV – Horse Hollow Generation Tie, Texas
- 230 kV – Motiva/Valero Port Arthur Inter-Plant Tie Lines, Texas

PROFESSIONAL SKILLS

PLS-CADD Suite, SAG10, LPILE

REGISTRATIONS – Electrical & Civil: Arkansas, Colorado, Kansas, Louisiana, Maine, Michigan, North Dakota, Oklahoma, Texas, NCEES. Electrical Only: Nebraska

EMPLOYMENT HISTORY

Dashiell, Supervising Engineer, 2012 – Current
Dashiell, Lead Engineer, 2011 – 2012
Dashiell, Project Engineer, 2009 – 2011
Dashiell, Design Engineer and Field Engineer, 2005 – 2009

EDUCATION

Bachelor of Science – Electrical Engineering, Minor – Business Administration
Texas A&M University, 2004

Ryan Harlow

Transmission Design Engineer II

Mr. Harlow is proficient in many aspects of structural engineering including knowledge of deep and shallow foundation design and steel/concrete design. These areas are highlighted specifically with large familiarity in physical transmission line design and substation design from 4.16 kV to 500 kV.

RESPONSIBILITIES

Design transmission and distribution lines from 480 V to 500 kV. Project activities include: customer interface, route surveys & planning, structure & foundation design, material selection & application, project team coordination.

RECENT PROJECTS

- 138 kV – Lonestar NGL Double Circuit Line
- 138 kV – NRG Self-Supporting Concrete Line
- 15 kV – Enterprise Frac VII and VIII Insulated Cable Lines
- 35 kV – Shell Piloncillo Ranch Backbone
- 35 kV – BP Wind Flatridge III Underground Collection System
- 115 kV – Oxy Transmission Line
- 25 kV – Enterprise Morgan's Point Hendrix Cable Lines
- 35 kV – Sempra Broken Bow II Underground Collection System
- 138kV – CB&I Ethylene Transmission Line
- 138kV – OPD High Plains 138kV Line
- 230kV – Enterprise BMT Transmission Line

PROFESSIONAL SKILLS

PLS-CADD, PLS-POLE, SAG10, HeliCAP, MFAD, LPile, ETAP

EMPLOYMENT HISTORY

Dashiell – Transmission Design Engineer II, April 2009 – Current

EDUCATION

Bachelor of Science – Construction Engineering Technology, Louisiana Tech University

Structural & Technical Courses:

- Steel Analysis & Design
- Construction Management
- Concrete Analysis & Design
- Estimating

Kyle T. Smith, P.E.

Lead Engineer - Substation

Mr. Smith is a licensed Professional Engineer in the states of California, Kansas, Maine, Nebraska, and Texas. He is the engineer of record on projects ranging from 5 kV to 345 kV. His design work includes greenfield substations, power transformer installations, GCB replacements, switchgear installations, power cable raceway routing, relay panel retro-fits, and substation networking. He is experienced in designing both the physical and P&C aspects of substations and switchyards for customers in industrial, utility, and renewable generation applications.

RESPONSIBILITIES

Mr. Smith has engineered AC and DC schematics implementing various protection and control schemes utilizing microprocessor based relays as well as electro-mechanical devices. He has designed transfer tripping schemes via both PLC and fiber-optic communications. Mr. Smith has also performed numerous substation calculations including power cable pulling tensions, grounding, lighting, lightning protection, and battery sizing. Furthermore, he has configured data concentrators for modern SCADA systems using DNP, Modbus, and SEL protocols over Ethernet, serial, and fiber-optic communications.

RECENT PROJECTS

- 230 kV San Diego Gas and Electric – Dunaway Switchyard
- 230/34.5 kV CSolar – Imperial Solar Energy Center West, Collection Substation
- 115/34.5 kV – Sempra – Broken Bow II Wind, Collection Substation
- 13.8/2.4 kV ExxonMobil Baytown – Sub 3 Transformer and Switchgear Replacement
- 15 kV LyondellBasell – POSM1 Switchgear and Power Cable Upgrade
- 345/34.5 kV BP Wind Energy – Flat Ridge III Wind, Collection Substation
- 230/34.5 kV CSolar – Imperial Solar Energy Center South, Collection Substation
- 138/15 kV DuPont SRW – DSS 3 Transformer Replacement
- 15 kV DuPont SRW – DSS 3 Switchgear Replacement
- 138/12.47 kV Enterprise Products – Frac V – Duncan Substation
- 230/12.47 kV Oxy Chemical – Bennett Ranch Unit Substation
- 138 kV DuPont SRW – DSS 3 and 4 Relay Panel Upgrade
- 345/138/34.5 kV NextEra Energy – Horse Hollow Wind, Collection Substation

EMPLOYMENT HISTORY

Dashiell – Austin Engineering Group, March 2009 – Current
Dashiell – Engineering and Field Rotation, June 2007 – March 2009

EDUCATION

Bachelor of Science – Electrical Engineering, University of Texas – Austin, 2007
Bachelor of Arts – Mathematics, University of Texas – Austin, 2006
McCombs Business Foundations Certificate, University of Texas – Austin, 2005

RICHARD D. HALL, P.E.
Senior Project Manager
Alternative Energy & Power
Engineering Global Coordinator

SGC Engineering, LLC
a part of Senergy

Academic Background

Master of Business Administration
Boston University - 1980

Bachelor of Science Mechanical Engineering
University of Maine – 1976

Tau Beta Pi Engineering Honor Society

Professional Registrations

Professional Engineer
Maine - #9389
Massachusetts - #49676

NB Canada - #L4336

Professional Affiliations

American Society of Mechanical Engineers (ASME)

INTRODUCTION

Mr. Hall fulfills the role of Senior Project Manager (PM) at SGC Engineering, LLC. He has 30 years of experience providing technical, managerial, negotiations, and regulatory compliance. He has worked on both public and private sector projects, with extensive experience managing a broad range of issues related to regulatory compliance. In addition to his role in Maine as PM, Mr. Hall works on increasing the scale and number of clients and projects that use Senergy for fully integrated services incorporating combinations of power engineering capability with other disciplines and capabilities, such as desktop analysis, grid studies, civil engineering, geographic information systems, survey, geotechnical, land services, Senergy Survey and geo-tech, etc. Other Power Engineering locations include Newcastle, England and Melbourne, Australia.

Mr. Hall has substantial experience in managing and designing projects from conception through construction. He possesses expertise in project planning and management of multi-disciplinary engineering projects, including environmental regulatory compliance of capital projects.

The projects completed with Mr. Hall's participation and under his direct management are indicative of his ability to understand the client's objectives and lead technical professionals to deliver the project to meet those objectives.

REPRESENTATIVE PROJECTS

- Quantum Energy – Passadumkeag Wind:
  PM for the permitting of a fourteen turbine wind farm, including fifteen miles of collector line, a 34.5 : 115 kV project substation, interconnect to Bangor Hydro Electric Line 64, and acquisition of land rights to support the project. The permit was secured in May 2013. The project is in the Design For Construction phase.

- University of Maine and United States (US) Department of Energy – Aqua Ventus I:
  PM and engineering contributor for the first offshore floating wind project in the US. The project includes engineering at the turbine, a 28 mile subsea 34.5 kV transmission cable, a 34.5 : 115 kV project substation and interconnect to Central Maine Power's 115 kV transmission. The project is in the Technical Design and Permit Engineering phase.

- Independence Wind – Record Hill Project:
  PM for the substation and generator lead electrical design for site permitting. Project included preliminary design for 22 wind turbines for a project total of 50 MW. Also included was coordination with utility on new substation to be constructed to serve this and other projects. Construction was completed in late 2011.

REPRESENTATIVE PROJECTS (continued)

- Leighton Asia, and Senergy Melbourne– Salkhit Wind Farm:
  PM to support the balance of plant contractor in completing the protection and control design, testing and commissioning of a wind farm located in Mongolia, and connected to the National Grid at the Nalaikh Substation. Work included full review and ultimate redesign of the protection and control, creating testing plans, and on site supervision of testing and commissioning.

- First Wind – Rollins Mountain:
  PM for 38 turbine wind farm and nine-mile 115 kV transmission line in Maine. Development work included site selection, land acquisition, collector electrical engineering, substation electrical engineering, public meetings, and environmental permit support. Issued construction design package to Balance of Plant contractor and provided construction support engineering. Provided owners engineer support, including Request for Proposal preparation, bid review, planning, construction and close-out of the transmission line. This project completed construction in June 2011.

- Confidential Wind Developer:
  PM for the substation site selection and transmission line routing of a 68-mile transmission line in an area where no rights of way exist. Project included preliminary site and route selection using available on line databases, field evaluation for environmental and constructability, alternatives analysis, right of way acquisition, final site and route selection, environmental permitting, and construction design.

- Maine Power Connection:
  PM for the route selection of a 100-mile project in northern Maine. This included working directly with two utilities including preliminary route selection, right of way acquisition, Public Utilities Commission Certificate of Public Need submittal, routing alternatives, and final route selection. This project also included site selection, right of way acquisition, and permitting for two high voltage substations.

- First Wind – Stetson II:
  PM for the winter construction of electrical facilities for an additional seventeen turbines to the Stetson Wind Project, located in Danforth, Maine. The project included turbine collector system and the upgrade of the substation transformer from 62 MVA to 100 MVA. This project was completed in December of 2009.

- Confidential Offshore Wind Developer:
  PM and Senior Engineer creating a preliminary Front End Engineering and Design study to connect a 550 MW offshore New England wind farm to two shore landing sites serving two independent system operators, each responsible for a different regional grid, in order to maximize revenues from the generating stations. Efforts included offshore wind farm electrical design, offshore subsea cables, offshore conversion stations, 1200 MW 320 kV HVDC transmission line, onshore transmission, conceptual grid connection, costing and risk review.

- Confidential Offshore Transmission Line:
  Prepared submittal in response to BOEMRE request for interest in proposed offshore lease tracts. Submittal included preliminary design of undersea transmission backbone with multiple conversion station platforms to facilitate connection by individual wind farm developers. Transmission backbone included connection to seven potential onshore points of connection to the grid.

REPRESENTATIVE PROJECTS (continued)

- National Semiconductor – South Portland, Maine:
  Served as Environmental Manager and Health and Safety Engineer. Responsible for all Air, Site, Publicly-Owned Treatment Works (POTW), and Storm permitting; regulatory compliance for US Environmental Protection Agency (USEPA), Department of Environmental Protection (DEP), Occupational Safety and Health Administration (OSHA), and Department of Transportation (DOT) and the site emergency response team.

  - Lead the Environmental Permitting for a $1.2 billion semiconductor manufacturing facility. Permits included Maine DEP Air Emission Permit & Land Use Permit, Municipal POTW discharge permit, and USEPA Storm Water Discharge Permit.
  - Lead multidisciplinary team to create and implement an Environmental Health and Safety Management System which improved existing policies and procedures of a semiconductor manufacturing operation resulting in the first Maine firm to achieve combined independent certification to International Standards Organization (ISO) 14,001 and Occupational Health and Safety Advisory Services (OHSAS) 18,001.
  - Managed the removal and disposal of $1.2 million of hazardous waste and special waste, freeing valuable real estate for additional development.

- Campbell Environmental Group – Portland, Maine:
  Served as Professional Engineer. Responsible for remediation system design and review of hazardous waste cleanup and closure of sites. Prepared stormwater and spill prevention plans for clients. Conducted compliance audits and trained staff on DEP/USEPA regulations.

- Pioneer Plastics Corporation – Auburn, Maine:
  Served as Facilities Engineer Manager. Responsible for all engineering, maintenance and capital projects for a decorative laminate and resin manufacturer with $180 million annual sales. Also served as Corporate Environmental Health and Safety Manager. Responsible for all regulatory compliance, including EPA, DEP, OSHA, and DOT at Auburn, Maine and Morristown, Tennessee manufacturing sites and sixteen regional warehouse/selling centers.

  - Engineering re-design and construction management of non-contact cooling system for manufacturing plant to eliminate the river discharge of waters which exceeded temperature limits for applicable river system.
  - Lead the design and construction team to replace eight-foot diameter, 115-foot tall boiler and thermo-oxidizer discharge stack. Team successfully met Maine DEP air discharge requirements while performing the upgrade during a five-day plant shutdown period.
  - Facilities engineering and environmental compliance responsibilities as part of a management team to improve engineering, operational, financial and regulatory performance of manufacturing plant. Team transformed facility from near zero value to ultimate $72 million value at time of sale.

- Hall, Incorporated – Worcester, Massachusetts:
  Owner/President served as Chief Engineer. Responsible for re-manufacturer of resistance welding machines, specializing in the most critical and demanding applications used in aerospace, electronics, computers, and oil tool manufacturing.

JEFFREY H. FENN, P.E.
Director, Electrical Engineering

SGC Engineering, LLC
a part of Senergy

Academic Background

Bachelor of Electrical Engineering Technology
Northeastern University-1981

Numerous short technical courses related to Utility engineering and project management

Professional Registrations

Professional Engineer
Connecticut - #29983
Maine - #10110
Massachusetts - #47700
New Hampshire - #11471
New York - #091846-1
Vermont - #8509

NB Canada - #L4334
NS Canada - #10039

Professional Affiliations

Member IEEE – Senior Member, PES and NSPE/MSPE, ECNE, NEPPA, NPCC Board

INTRODUCTION

Mr. Fenn is the Director of Electrical Engineering for SGC Engineering. He has over 30 years of experience providing engineering solutions for electric utilities and high voltage related projects. He has been directly responsible for numerous projects in the planning, design and construction phases in the areas of: protective relaying; system planning; short circuit studies; power flow studies; substation design and testing; equipment specification and procurement for substations; generation control and interconnection with utilities; project planning; administration and coordination; permit acquisition; regulatory reporting; cost estimating; stakeholder support; and construction observation and reporting. He presently spends significant time working with ISO-New England on various policies, studies and reliability issues.

Projects completed with Mr. Fenn's participation and under his direct technical supervision balance the requirements for new or rehabilitated facilities and associated site improvements with the goal of long-term sustainable development.

PROFESSIONAL LEADERSHIP

- Independent System Operator – New England (ISO-NE) / the New England Regional Transmission Organization (RTO):
  Participation in various committees supporting planning study efforts, operating study efforts, market capacity, cost control, generation interconnection, and various other capacities. Supports numerous clients in this capacity.

- New England Power Pool (NEPOOL) Reliability Committee:
  Involvement and interaction with various planning committees or subcommittees which are associated with NEPOOL. Involvement includes participation in developing standards, rules and procedures, and interaction with ISO-NE at various levels.

- Northeast Power Coordinating Council (NPCC):
  Sits on the Board of Directors representing Sector 7. Participation and presentation of various projects/system changes to task forces for approval, including Task Forces on System Studies, on Coordination of Planning, on Coordination of Operation, and on System Protection; as well as Reliability Coordinating Committee.

REPRESENTATIVE PROJECTS

- Electric System Planning and Protection:
  Preparing short circuit studies necessary for protection and equipment specification. Developed power flow studies to determine acceptable means to operate a system. Also, determined coordination from simple overcurrent to complex distance schemes with communication.

REPRESENTATIVE PROJECTS (continued)

- Substation Design Engineering:
  Expanding existing high voltage facilities or designing new ones. Strong experience in structure and equipment specification as well as control systems.

- Project Management:
  Managing simple and complex projects for electric utilities that include all aspects of project execution, from budgeting and cost estimating to design, permitting and construction.

- Authored and presented papers in various professional forums:
  Western Protective Relay Conference, GaTech APRC, Energy Council of the Northeast, and the Institute of Electrical and Electronic Engineers.

- First Wind – Various Wind Generation Projects:
  - Feasibility study effort to indicate viability of project location with regard to area electrical system.
  - System Impact Study management and interaction with ISO-NE and impacted parties.
  - Operating study support for projects as they progress to energization.
  - Interconnection Agreement support with interconnecting utility.
  - Major equipment specification and procurement.
  - Supported major stakeholder effort and contract/agreement discussions with local utilities.
  - Projects include Stetson I, Stetson II, Rollins, Dundee, Longfellow, Oakfield, Oakfield II, Bull, Hill, several others not fully public.
- Keene Rd 345/115kV substation – Bangor Hydro Electric Co. (BHE):
  - System study and Operating study support.
  - SVC interaction study efforts and data support.
  - Support at various ISO-NE, NEPOOL and NPCC committees for approvals.
  - Major equipment specification and procurement support.
  - Supported Real Time Dynamic Simulation testing of protection scheme due to complexity associated with high voltage power electronics, such as static VAR compensators (SVC) and Series Capacitors.
  - Preliminary facility design to support permitting.
  - Stakeholder and regulatory support and testimony.
- Record Hill Wind – Independence Wind:
  - Permitting design support
  - Cost estimating and review of other engineering costs
  - Interconnection stakeholder support.
- LNG Substation Design and Budget – Eastern Maine Electric Coop:
  - Permitting level design of interconnecting substation, right of way and transmission line

REPRESENTATIVE PROJECTS (continued)

- Kennebunk Light and Power District – West Kennebunk Substation:
  - Fast track design of 115kV to 12.5kV distribution substation with dual transformers and four local circuits. Substation interconnects with the Central Maine Power transmission system.
  - Represented client throughout process procuring materials, contractors and supporting construction and commissioning.
- 345kV Transmission Line, Maine to New Brunswick – BHE:
  - Managed the system impact study, coordinating the effort with interested and impacted parties including New Brunswick Power, Maine Electric Power Company, Central Maine Power, BHE, NEPOOL and ISO-NE.
  - Provided information and discussion forums with the steady state and stability peer review groups of ISO-NE and NEPOOL.
  - Presented and received approval from the NEPOOL Reliability Committee, whose approval paved the way to construction of the project.
  - Negotiated, presented and received pool financial support for the entire project. Participated in substation equipment specification, selection and procurement including New England's first high voltage series capacitor.
  - Supported Real Time Dynamic Simulation testing of protection scheme due to complexity associated with high voltage power electronics, such as SVC and Series Capacitors.
  - NPCC interaction and approval of protection design as well as Special Protection System design.
  - Participated in a significant and successful stakeholder process, understanding stakeholder concerns and presenting the project in a manner that was understandable to stakeholders. Evaluated options and suggested changes to accommodate needs.
- Maine Independence Station Interconnection:
  - This is a 550MW combined cycle generation station interconnected at 115kV with the BHE and NEPOOL electrical systems.
  - Project management of the interconnection and electric utility facilities design and construction.
  - Completed system impact study, including approval at NEPOOL TTF (steady state peer review study group), STF (stability peer review study group) and RC (Reliability Committee that approves and accepts the system changes).
  - Weekly meetings with all involved parties including the project developer to review and coordinate the utility installation work with the plant needs.
  - Overview of design, procurement and installation of a 115kV transmission line and associated right of way.
  - Rebuild of four other 115kV transmission lines.
  - 115kV substation expansions at two locations for this project.
  - Coordinated efforts with neighboring utilities in regards to the ability of their electric systems to accommodate this project.

REPRESENTATIVE PROJECTS (continued)

- Chester Static VAR Compensator:
  - Involved with the study, design and commissioning, and subsequent operation and maintenance of the Chester Static VAR Compensator. This is a +450, -150 MVAR facility installed to permit heavy transfers of energy (2000MW) from Hydro-Quebec to New England, and prevent the Maritimes Canada area from having system stability problems.
- Great Lakes Hydro Electric Maine Interconnection:
  - An interconnection was required between two distinct electric utilities. The existing generating system was designed and operated to meet mill loads and needs, and was operated as an electrical island with a low voltage tie with the local electrical utility (BHE). The tie was eliminated and a new 25-mile 115kV transmission line constructed along with substations at both ends and system changes in other areas to accommodate the changing needs of the island electrical system.
  - Responsible for all interaction with NEPOOL and ISO-NE, including the system impact study, review with appropriate committees, and obtaining approval.
  - Interacted with the Maine Public Utilities Commission supplying it with the technical details of the project (including study details); supported the application of public need / convenience.
  - Responsible for the engineering and construction of the 25-mile transmission line, as well as a 115kV substation and several related changes to accommodate this project.

TECHNICAL / MANAGEMENT SKILLS

- High Speed Protection Scheme Design:
  These schemes improve system response to faults, reducing impact to area industrial customers.
- Fast Track Project Philosophy:
  Ability to apply fast track project management and design approach.
  - Allows improved start to finish schedule.
  - Ensures information and materials are available to the construction crews when needed to meet milestone schedule.

THOMAS M. HENAGHEN, P.E.
Director of Civil Engineering

SGC Engineering, LLC
a part of Senergy

Academic Background

Bachelor of Science
Civil Engineering
Clarkson University, 1996

Professional Registrations

Professional Engineer
Maine - #12433
Massachusetts - #45045
New Hampshire - #13264
Vermont - #18.0071768
New Brunswick - #L4337

INTRODUCTION

Mr. Henaghen is the Director of Civil Engineering for SGC Engineering, LLC. He is a registered professional engineer with over fifteen years of experience providing civil engineering services for commercial, industrial, municipal, utility and residential projects.

Mr. Henaghen has significant experience in the areas of: site planning and design, development feasibility and due diligence studies, stormwater analysis, design of best management practices, and utility design and coordination.

REPRESENTATIVE PROJECTS

- Maine Wind Farm – 345 kV Transmission Line:
  Project Manager for the permit level design of 60 miles of 345 kV generator lead. Line consisted of a combination of single pole and H-frame structures. Assisted the owner with constructability and cost analysis of various line configurations.

- Colorado Wind Farm – 345 kV Transmission Line:
  Project Manager for the planning and permit level design of 30 mile, 345 kV H-frame, bundled conductor, generator lead.

- Line 51 & Line 93 Rebuild:
  Project Manager for the design of the re-build of this 20+ mile 115 kV transmission line to support a line re-rating. The project include modification or replacement of every structure.

- Line 6908 Rebuild – 69 kV Transmission Line:
  Project Manager for the rebuild/redesign of 10 miles of 69kV transmission line to support re-conductor. Tasks included structure design/analysis, line routing, and materials specification.

- Thailand Root Cause Analysis:
  Project Manager for the preparation of a root cause analysis on nine miles 115kV dual circuit transmission line that experienced a cascading type failure during a typhoon. Tasks included overturning and crossarm analysis, loading checks, and recommendations for rebuild/repair.

- Line 66 Static/Optical Ground Wire upgrade:
  Project Manager for the design of 12.5 miles of static/optical ground wire re-conductor on local 115 kV line. Tasks included structural analysis and materials specifications.

REPRESENTATIVE PROJECTS (continued)

- Record Hill Wind Project:
  Project Manager for the construction level electrical design for the collector system and generator lead. Project included 22 wind turbines with an underground collector system. The scope of the project also included communications design and load flow and short circuit studies for the 50MW project.

- Hawkesdale and Ryan Corner Wind Projects:
  Project Manager for these two wind projects on separate sites in Victoria, Australia. The projects were designed under a single contract. Combined project included (99) 2MW turbines (31 and 68 turbines, respectively). The scope of the project included the design of the 33kV underground collector system for each project, including coordination of the switchgear at the base of the tower.

- Iberdrola USA Substation Design:
  Project Manager for the preparation of the civil/structural design plans and specifications associated with the construction of a 345kV/115kV greenfield substation. Design included a new substation access driveway, internal access roads, foundations, grading, stormwater management, oil containment and fencing.

- Stetson Substation Design:
  Engineer responsible for the preparation of the civil/structural design plans and specifications associated with the construction of this substation. Design included foundations, grading, stormwater management, oil containment and fencing. Provided construction administration services during construction including review of shop drawings and responding to RFIs.

- Rollins Substation:
  Provided civil support with regards to the geometric layout, grading, stormwater management and oil containment associated with the construction of this 34.5/115kV substation required to support the Rollins Wind Farm project.

- Littleton Substation:
  Project Manager and Design Engineer responsible for the preparation of the civil design plans to support the permitting of this substation expansion project. Design included geometric layout, grading, stormwater management and fencing and coordination with others for survey and foundation design. The project required Dredge and Fill Permit from the New Hampshire DES and a Zoning Board approval from the Town of Littleton, New Hampshire.

- Hancock Substation:
  Design Engineer responsible for the preparation of the civil design plans to support the permitting of this fast track design-build project. Design included geometric layout, grading, stormwater management and fencing and coordination with others for survey and foundation design. The project required Site Plan Review and a new driveway permit from the New Hampshire Department of Transportation.

- Epping Substation Connection:
  Project Manager for the design of line modifications to three existing transmission lines to accommodate the connection to a new substation built adjacent to the lines.

- Line 69 Fiber Replacement:
  Project Manager for the analysis and design required for the replacement of an existing static wire with a new OPGW cable.

REPRESENTATIVE PROJECTS (continued)

- Stetson II Wind Project:
  Project Lead responsible for coordinating the electrical design of the 34.5kV collector system for this seventeen-turbine wind farm development. Responsible for coordinating with the developer and other project consultants to complete the permitting level and construction level designs for this project.

- Rollins Wind Project:
  Electrical Project Lead responsible for coordinating the electrical design of the 34.5kV collector system for this 40-turbine wind project. Responsible for coordinating with the developer and other project consultants to complete the Issued for Construction plans for this project.

- Lawrence Airport Industrial Park, MA:
  Preparation and filing of various Federal Aviation Administration documents required to obtain a land release from the Federal Aviation Administration to allow for the development of an industrial park on airport-owned property.

- Weathervane Village and Weathervane Golf Course, MA:
  Responsible for the site design and permitting for the expansion of this on-going project to include 31 additional housing units and extension of the golf course from a par 32 to a par 36 layout.

- Meredith Way Residential Development, MA:
  Responsible for site design and permitting for this residential cluster development in Weymouth, MA. The development was designed to avoid impacts to three vernal pools and their associated habitat. In addition, the stormwater management system was designed to mitigate existing drainage problems identified by abutters. The project also included an environmental assessment of impacted fill material on the property.

- Cook Estate Age-Restricted, Mixed-Income Residential Development, Cohasset, MA:
  Preparation of a feasibility and master plan study for a 45-unit cluster development on a 28-acre site in Cohasset, MA. Master plan minimized off-site and environmental impacts while creating a quaint, New England coastal, mixed-income development consistent with the intent of the Cohasset planning staff.

- Wrentham Town Center Multi-Use Development Study, Wrentham, MA:
  Assisted nationally based developer to assess the site suitability and potential for housing development on this 75-acre DEP-listed former industrial site; included preparation of over ten mixed-use and residential development schemes, site development cost estimates and phasing plans.

DANA L. HALE
Senior Engineer

SGC Engineering, LLC
a part of Senergy

Academic Background

Bachelor of Science
Mechanical Engineering
Technology
University of Maine – 1996

INTRODUCTION

Mr. Hale is a Senior Engineer who has over fifteen years of experience in providing engineering solutions for electric utilities and industrial facilities. He has been directly responsible for numerous projects in the planning, design and construction phases, in the areas of: transmission design, distribution design, substation design, material procurement, permit acquisition, and cost estimating.

He has specific experience in the areas of: Transmission Design Engineering, including route selection, right of way acquisition, line design, contract and construction management; Substation Design Engineering, including bus design, structure design, grounding systems, contract and construction management; and Distribution Design Engineering, including overhead and underground design, utility standards development, line design, construction management.

REPRESENTATIVE PROJECTS

- Maine Wind Farm:
  Lead Engineer for permit level design of 60 miles of 345 kV generator lead. Line consisted of a combination of single pole and H-frame structures. Assisted the owner with constructability and cost analysis of various line configurations.

- Colorado Wind Farm:
  Lead Engineer for planning and permit level design of 30 miles of 345kV H-frame, bundled conductor generator lead line.

- Bingham Wind Farm:
  Project involved permit level design (PLS-CADD) for seventeen miles of 115kV single pole, bundled conductor generator lead line. Section of this line is designed utilizing self supported structures because it is located in the road right of way with no guying available.

- Thailand Root Cause Analysis:
  Root cause analysis on nine miles 115kV dual circuit transmission line that experienced a cascading type failure during a typhoon. Tasks included overturning and crossarm analysis, loading checks, and recommendations for rebuild/repair.

- Record Hill Wind Farm:
  Completed substation design for 34.5kV to 115kV, 50MW step-up collector substation. Project involved foundation design, structure design, bus design, equipment specifications, and construction oversight.

REPRESENTATIVE PROJECTS (continued)

- Island Falls Substation:
  Completed substation design for 44kV to 12.47kV distribution substation. Project involved design of foundation and structures, ground grid, conduit system and bus design, as well as material specifications and procurement and construction oversight.

- Line 6901 Rebuild and Upgrade:
  Project initiated by the Local utility to address concerns over the reliability of the Northern Maine Transmission Grid. Project involved design of eleven miles of 69kV transmission line upgrade and a preliminary design of a new 138kV to 69kV substation.

- Fish River Substation:
  Project involved the design of a three bay substation with two bays of 69kV to 34.5kV and one bay of 69kV to 12.47kV. Substation included one incoming 69kV line and four outgoing circuits, two at 34.5kV and two at 12.47kV. Project scope included cost estimating, site selection, civil and structural design, electrical design, material specification and procurement, and construction oversight.

- Ashland Substation – Close ring bus:
  Project involved the installation of a 69kV breaker to complete a ring bus. Project also involved upgrades to the existing station from 600 to 1200 amps.

- Mars Hill Wind Farm:
  For Maine's first large wind farm project, completed 69kV Transmission Line design using PLS-CADD. Completed substation design for 34.5kV to 69kV, 50MW step-up collector substations. Prepared substation design for a three-breaker ring-bus switching station for the interconnection with the utility, Maine Public Service Company (MPS). Design of a dual circuit 34.5kV sub-transmission circuit from collector station to mountain top.

- Line 6910 Rebuild:
  69kV Transmission Line for MPS. Project involved the design of fifteen miles of new line to replace an aging and undersized line. Participated in all aspects of transmission line design; cost estimating, route selection, right-of-way acquisition, line design (using PLS-CADD), construction package development, material procurement, and construction management.

- Line 6912 Rebuild:
  69kV Transmission Line for MPS. Project involved the rebuild of five miles of single pole structures with a new line to replace an aging and undersized line. Tasks associated with the project included: cost estimating, line design (using PLS-CADD), construction package development, material procurement, and construction management.

- Line 3875:
  138 kV Transmission Line for MPS. Project initiated by the Maine Public Utilities Commission to address concerns over the reliability of the Northern Maine Transmission Grid. Project involved design of eleven miles of new line to create a new interconnection with NB Power. Aspects of Transmission line design that were utilized; cost estimating, line design (using PLS-CADD), Environmental permitting, route selection, right of way acquisition.

REPRESENTATIVE PROJECTS (continued)

- McCain Foods Inc. Plant Expansion:
  Led the project which involved a short 69 kV transmission line, 69kV to 4kV, 5MVA substation, and 4kV distribution system upgrades.

- Ashland 69kV to 34.5kV Substation Expansion:
  Responsible for civil/site engineering, steel design, material specification and procurement as well as construction monitoring for adding a 34.5kV bay to an existing substation.

TECHNICAL / MANAGEMENT SKILLS

- Fast Track Project Philosophy:
  Ability to apply fast track project management and design approach.
  - Allows improved start to finish schedule
  - Ensures information and materials are available to the construction crews when needed to meet milestone schedule

JASON T. FITZGERALD
Electrical Engineer
Transmission and Distribution

SGC Engineering, LLC
a part of Senergy

Academic Background

Associate of Applied Science
Electrical and Automation Technology
Eastern Maine Community College 2004

Bachelor of Science
Electrical Engineering Technology
University of Maine-2006

PLS-CADD Line Design
University of Wisconsin

INTRODUCTION

Mr. FitzGerald is an Electrical Engineer and graduate of the University of Maine. During his time at SGC Engineering, LLC, Mr. FitzGerald has been responsible for the design and support of numerous projects, including all facets of transmission and distribution line planning, design, cost estimation, permit acquisition, material procurement, and substation design.

REPRESENTATIVE PROJECTS

- Maine Wind Farm – 345 kV Transmission Line:
  Provided design support for permit level design of 60 mile, single pole, bundled conductor 345 kV generator lead. Tasks included structure design, routing, and peer review.

- Colorado Wind Farm – 345 kV Transmission Line:
  Provided design support for permit level design of 30 mile, 345 kV H-frame, bundled conductor, generator lead. Tasks included structure design, routing support, and peer review.

- Line 6908 Rebuild – 69 kV Transmission Line:
  Lead Design Engineer for the rebuild/redesign of 10 miles of 69kV transmission line to support re-conductor. Tasks included structure design/analysis, line routing, and materials specification.

- Line 66 Static/Optical Ground Wire upgrade:
  Provided design support for 12.5 miles of static/optical ground wire re-conductor on local 115 kV line. Tasks included structural analysis and materials specifications.

- Line 51 & Line 93 Rebuild – 115 kV Transmission Line:
  Lead Design Engineer for the re-build of 20+ mile 115 kV transmission line to support a line re-rating. The project included modification or replacement of every structure. Project involved structural design/analysis, materials specifications, creation of construction package, and coordination/support for construction.

- Bingham Wind Farm - 34.5 kV Overhead Collector System:
  Project involved permit level design of ten mile 34.5 kV collector system using zero-impact model to accommodate fast track permit schedule.

- Passadumkeag Wind Park - 34.5 kV Generator Lead:
  Lead Design Engineer for eight mile 35 kV roadside generator lead, collocated on poles carrying local 12.5 kV distribution circuit. Developed PLS-CADD model, selected/refined route with right of way agents.

REPRESENTATIVE PROJECTS (continued)

- Epping Substation Connection – 115 kV Transmission Interconnection:
  Lead Design Engineer for the design of line modifications to three existing 115 kV transmission lines to accommodate the interconnection of a new substation built adjacent to the lines. Tasks included creation of PLS-CADD model, route selection, structure design/analysis, materials specifications, and creation of construction package.

- Thailand Root Cause Analysis:
  Root cause analysis on nine mile 115kV dual circuit transmission line that experienced a cascading type failure during a typhoon. Tasks included overturning and crossarm analysis, loading checks, and recommendations for rebuild/repair.

- Kingdom Community Wind - 46kV Transmission Line:
  Lead Design Engineer for a sixteen mile transmission line to support a 21 turbine, 63 MW wind project. The design included a significant portion of road side construction with a distribution under-build. Tasks included route selection/refinement with right of way agents, structure design, materials specifications, and creation of construction package.

- GMP Line 3307 - 34.5kV Line Relocation:
  Lead Design Engineer for the design of the relocation of this 34.5kV transmission line. The relocation required road side construction of the line in a densely developed area requiring careful and creative structure design to eliminate guying issues.

- Granite Ridge Energy – North American Electric Reliability Corporation (NERC) Compliance Analysis:
  Coordinated survey data collection and conducted NERC compliance analysis on three 230 kV transmission lines. Project involved creation of PLS-CADD model utilizing collected data, clearances checks, Institute of Electrical and Electronics Engineers (IEEE) 738 analysis, and NERC assessment/report.

- Kibby Mountain - 34.5kV Overhead Collector System:
  Provided design for 20 miles of Overhead Collector System in alpine environment, as well as 8 miles of fiber underbuild on local utility poles. Tasks included development of model in PLS-CADD, route selection, structure design analysis, specification of equipment, construction drawings, coordination with local utility, and construction support.

- Bowers Mountain Wind – 34.5 kV Generator Lead:
  Provided permit level design of dual circuit 34.5 kV generator lead. Tasks included structural design/analysis and development of preliminary drawings

- Stetson Wind – 34.5kV Overhead Collector System:
  Designed a 7.5 mile line including preliminary design, permitting, and construction plans and drawings. Developed route selection, evaluation, design criteria, and provided construction inspection.

- Stetson II Wind – 34.5kV Overhead Collector System:
  Provided preliminary permitting design for an eleven mile line, collocated on structures with the Stetson Collector System. Provided PLS-CADD support for final construction package and developed route selection, evaluation, and design criteria.

MICHAEL G. LYFORD
Senior Electrical Designer

SGC Engineering, LLC
a part of Senergy

Academic Background

Bachelor of Science Architecture
Roger Williams College – 1987

Advanced AutoCAD Certification
A-Cad Training Center

PLS-CADD Line Design Certification
University of Wisconsin

Substation Design Certification
University of Wisconsin

Advanced Erosion & Sediment Control Certification
Maine Department of Environmental Protection

INTRODUCTION

Mr. Lyford is a Senior Electrical Designer with over 22 years of experience providing engineering support, surveying, designing, drafting, project coordination, and quality control inspection for many types of civil and electrical engineering projects. He also has 20 years of advanced AutoCAD experience and five years of line design experience using PLS-CADD.

Mr. Lyford has substantial experience in performing technical assignments in the electric utility industry. He has managed the operations, maintenance, construction and improvements of electric utility facilities. He has experience in overhead/underground line design as well as substation design. In addition, he has managed the bidding/contract coordination and quality control inspections for many types of civil construction projects including wastewater treatment facilities, roadway, water and sewer infrastructure and site development.

REPRESENTATIVE EXPERIENCE

- Olver Associates, Inc. – Winterport, Maine:
  Provided engineering support, surveying, design, drafting, project management, and quality control inspections for a variety of projects including utility infrastructure improvements, treatment facility upgrades, and roadway construction.

- Bangor Hydro Electric Co. – Bangor, Maine:
  Provided support to this utility's engineering department by serving in various functions including surveying, design, project coordination, bidding/contract administration, and quality control inspections for a wide range of construction projects, including transmission lines and hydroelectric generation facilities.

REPRESENTATIVE PROJECTS

- Line 69 Rebuild:
  Lead Designer for the rebuild of Line 69 from Columbia Switch to Harrington Substation. Responsible for the planning, analysis and design required for full replacement of this 115 kV transmission line.

- Line 51 & Line 93 Rebuild:
  Designer for the re-build of this 20+ mile 115 kV transmission line to support a line re-rating. The project included modification or replacement of every structure.

REPRESENTATIVE PROJECTS (continued)

- Downeast Reliability Project:
  Senior Technician assisting the Lead Engineer in the design of a 42-mile, 115 kV transmission line from permitting phase through construction phase. Included in this project, team role was the managing of all survey data acquired by other firms, developing exhibits, plan and profile drawings, and wood/steel structure details.

- Record Hill Wind Project:
  Design/Resident Engineer of the 34.5 kV Collector System for the Record Hill Wind Farm Project from permitting phase into construction. Assisted Lead Engineer in the design of eight miles of overhead and underground collector system using PLS-CADD and AutoCAD Civil 3D.

- Bowers Wind Project:
  Permit level design of the 34.5 kV Collector System for the Bowers Wind Farm Project. Assisted Lead Engineer in the design of eleven miles of overhead and underground collector system using PLS-CADD and AutoCAD Civil 3D.

- Stetson Wind Project:
  Owners Engineer for the construction of a 34.5 kV/115 kV substation as part of the Stetson Mountain Wind Farm project. Inspected earthwork and concrete foundations as well as the erection of the substation steel package. Performed construction inspection of all electrical equipment installations in the substation.

- Rollins Wind Project:
  Design/Resident Engineer of the 34.5 kV Collector System for the Rollins Wind Farm Project from permitting phase through construction and commissioning. Assisted Lead Engineer in the design of seventeen miles of overhead and underground collector system using Power Line Systems, Inc., PLS-CADD and AutoCAD Civil 3D. Also included in the design was route selection, development of permitting phase drawings/exhibits, plan and profile drawings and details, and structure design and details. During the construction phase, transitioned into a Resident Engineer role both onsite providing quality assurance and offsite providing data requested through the submittal and request for information process.

- Corinna, Maine:
  Resident Engineer for the Wastewater Treatment Facility Replacement for the Corinna Sewer District. This project consisted of the replacement of an activated sludge wastewater treatment plant with a new facultative lagoon wastewater treatment facility including a headworks/main pump station building, 6700 lineal feet of 12" diameter (Ø) polyvinyl chloride (PVC) force main, two 3.5 MG synthetically lined facultative lagoons, one 50 MG synthetically lined storage lagoon, a spray irrigation system, an operations building, and 2000+/- lineal feet of 18"Ø PVC gravity sewer.

  This project also included the demolition and removal of the existing wastewater treatment facility.

- Orono, Maine:
  Construction inspection for the removal of the Orono Hydro Station penstock removal project. This project consisted of the removal of the wooden and steel penstocks from Orono Dam to the surge tank at Orono Hydro station as part of decommissioning.

REPRESENTATIVE PROJECTS (continued)

- Bangor, Maine:
  Engineering Support of the part twelve safety inspections for various hydro facilities on the Penobscot River. Assisted a consulting group in the inspections of dams, generating stations, tailraces, etc.

- Orono, Maine:
  Resident Engineer for the Dirigo Pines Project. This project consisted of constructing utilities for a large retirement community, which included installation of 4000+/- lineal feet of 8"Ø PVC sanitary sewer, 12"Ø ductile iron water main, 12"Ø – 24"Ø SICPE storm sewer, and 3300+/- lineal feet of roadway construction.

ANDREW J. LETOURNEAU
Senior Electrical Engineer

SGC Engineering, LLC
a part of Senergy

Academic Background

Bachelor of Science
Electrical Engineering
University of Vermont – 1983

Numerous technical short courses related to utility engineering and management

Associate of Science
Electrical Engineering
Vermont Technical College – 1980

Tau Alpha Pi Engineering Honor Society

Professional Affiliations

Member - Institute of Electrical and Electronics Engineers

Member – Energy Council of the Northeast

Member NEPPA

INTRODUCTION

Mr. Letourneau has over 29 years of experience in the electric utility business. He has been responsible for the planning, design, budgeting, and construction of many distribution and transmission projects for some of the largest utilities in Vermont including the statewide Transco, Vermont Transco, LLC. He has been involved in the development of Act 250 and Section 248 permits in Vermont and has supplied testimony in cases before the Public Service Board. Further, he has actively participated in various regional organizations and served on the Board of Directors for the Energy Council of the Northeast.

During his career, Mr. Letourneau has managed construction and maintenance crews as well as customer service representatives. In addition, he has managed construction as well as process improvement projects.

Mr. Letourneau has experience in electrical design for utilities, including: primary overhead and underground residential distribution up to and including 35kV; residential and commercial/industrial developments; transmission lines 35kV through 120kV; 4kV through 120kV substations; services; and specifications and standards

Mr. Letourneau also is experienced in field engineering and construction supervision including: project planning and scheduling; project cost analysis; project management; construction management 4kV thru 345kV; coordination and scheduling of outages; and inspection of installations to ensure consistency with construction documents including environmental standards.

REPRESENTATIVE PROJECTS

- Keene Road Substation
  Senior Engineer for design of grounding grid for expansion of a 345kV/115kV Substation

- UNITIL Kingston Substation
  Project Manager and Senior Engineer for design of grounding grid for a three transformer, 180MVA 115kV to 34.5kV Substation.

- Massachusetts Green High Performance Computing Center - Holyoke, MA:
  Engineer for design of grounding grid for a two transformer, 20MVA Substation.

- Rollins and Oakfield Wind Farms
  Underground cable ampacity calculations considering the thermal properties of the earth and surrounding facilities to determine the minimum cable sizes for the collector systems.

REPRESENTATIVE PROJECTS (continued)

- Central Vermont Public Service - Vernon Road Substation:
  Project Manager for protection and controls design for a five line, two capacitor bank, ten breaker 115/69/46/12.5kV substation.

- Central Vermont Public Service - Johnson Substation:
  Project Manager for protection and controls design for a five line, two capacitor bank substation.

- Green Mountain Power Corporation/Vermont Electric Cooperative - Kingdom Community Wind Project:
  Project Manager and Engineer for line design on sixteen miles of 46kV transmission line and 15kV distribution underbuild to support this 21 turbine, 63 MW wind farm.

- Green Mountain Power Corporation - 3307 Line Relocation:
  Project Manager and Engineer for reroute one half mile of 34.5kV Subtransmission line from right of way into residential/commercial area as overbuild on 34.5kV distribution line, including 400 foot underground section. Work included alternatives analysis, line design, subcontractor management (survey, environmental, archeology and aesthetics) as well as assistance with Section 248 permitting

- Vermont Marble Power Division of Omya - West Rutland Substation:
  Project Manager/Construction Manager for EPC project to replace vacuum breaker and add PT's to substation steel superstructure.

- Public Service New Hampshire – North Rochester Substation:
  Project Manager and Lead Engineer on project to add power transformer to North Rochester substation. Responsible for Electrical, Civil and Mechanical design package for construction and follow-up as-builts.

- Public Service New Hampshire - Monadnock Substation:
  Project Manager and Lead Engineer for addition of breaker to Monadnock Substation. Electrical and Civil design including protection and controls for breaker and transformer differential relays. Construction package and as-built responsibility.

- Vermont Transco, LLC – Northwest Reliability Project, Rutland, Vermont:
  Working as a Project Lead on the substations associated with the $300+ million project, specifically the New Haven, Blissville, Queen City and Williston Substations. Duties include project scheduling, preparing contractor Requests for Proposal, and selection for subgrade, above-grade construction, and control building acquisition and construction. Led preconstruction and weekly construction meetings and provided support. Further, worked as liaison to GE on the Granite Substation Reactive Power Device Project to install the building and four synchronous condensers and associated parts.

- Washington Electric Cooperative – 48kV Tie Line to Vermont Transco, LLC, Coventry, Vermont:
  While working for Vermont Electric Cooperative, competitively bid the construction of 7+ miles of 46kV transmission line with half as overbuild to 15kV distribution. Upon winning the project, managed the construction through the timely completion and energization. Project was on time and on budget. Management included multiple subcontractors as well as field engineering expertise to add valuable recommendations to the owner. Also provided testimony in the Section 248 process and managed the environmental impacts of the field construction. This was a winter construction project that had special conditions due to presence of plants that could not be transported from their natural habitat.

REPRESENTATIVE PROJECTS (continued)

- Citizens Electric Services and Vermont Electric Cooperative - Missisquoi Bay Bridge Project, Alburg/Swanton, Vermont:
  Planned and managed the construction of a temporary overhead relocation of one mile of 46kV with 15kV underbuild on the Missisquoi Bay Bridge. This phase of the project was delivered on time and on budget. Managed multiple contractors as well as coordinated the needs of the Vermont Agency of Transportation and their contractor and subcontractors. Managed the preparation and filing of the Section 248 and received Certificate of Public Good on schedule. Planned and prepared for the permanent relocation of the line to the duct and manhole system including the suspension of the lines under the bridge. Joined the Vermont Agency of Transportation in the 401 Water Quality Permit, filed for the United States Army Corps of Engineers Section 404 permit and was issued individually to Citizens. Reviewed the needs for an electrical power system control and determined that one was not needed for our individual effort. Construction and demolition of overhead lines were accomplished on 8,000 feet of lakeshore avoiding any environmental issues.

- Green Mountain Power Corporation - Dorset Street Underground Project:
  Managed the relocation of 1+ miles of three-phase 15kV overhead line to a duct and manhole system. The project included three different feeders and a substation. Electrical budget for the project was in excess of $1.5M. Due to inadequate concrete strength in some vaults, had to negotiate with many parties to deliver a project that met the needs of all the parties. Despite this issue, project was delivered on time with modified schedule.

FRANCIS E. SHILLITOE,
MEng(Hons), MSc, CEng, MIET
Senior Electrical Engineer

SGC Engineering, LLC
a part of Senergy

Academic Background

Master of Science Renewable Energy and Distributed Generation (with distinction), *Heriot-Watt University, September 2008*

Master of Engineering (Hons) Electrical and Electronic Engineering for Europe, *University College London, September 1998*

Professional Registrations

Chartered Engineer, *Institution of Engineering and Technology (CEng, MIET), February 2005*

INTRODUCTION

Mr. Shillitoe specializes in power systems analysis and electrical design of renewable energy projects connecting from 11kV to 400kV. He has extensive project management experience, including management of large internal teams and subcontractors. His capabilities include: load flows, fault level calculations, P28 assessments, and cable sizing; transient stability analysis; sizing and dynamic modeling of reactive power compensation equipment (STATCOM); wind turbine model development in PSS/E and DIgSILENT; PSS/E, DIgSILENT, PSCAD, PSS SINCAL; Earthing grid design studies from 11kV to 132kV; Switchgear specifications; Protection coordination; Geographic Information Systems in QGIS; and Python, Java and Relational Databases.

REPRESENTATIVE PROJECTS

- 3GW Greenwire Project:
  Provided electrical design engineering for 3GW Greenwire project in Republic of Ireland. Front End Engineering Design (FEED) for wind farm MV cables, inter-wind farm HV cables and substations. Included integration of Geographic Information Systems with load flow modeling in PSS/E for rapid assessment of reactive compensation, thermal ratings, cable congestion and losses evaluation.

- Northern Powergrid:
  Act as an advisor to Northern Powergrid regarding the connection of license exempt medium power stations to the distribution network: Teesside Offshore Wind Farm, Middlemoor Wind Farm, and Keadby Wind Farm. Supported the DNO in ensuring Grid Code compliance, reviewing and submitting User Data File Structure packages to National Grid and witnessing Grid Code compliance tests.

- Betws Wind Farm – 132/33 kV Substation:
  Project Manager for multi-disciplinary team including sub-contractors for power system studies and detailed design of 132/33kV substation at 34.5MW wind farm. The scope of the work included: power system studies including load flow, short-circuit, P28, G5/4, earthing, and protection coordination; substation layout drawings; control and protection design drawings including wiring diagrams and layouts for MIMIC, protection, alarm, DNO interface and SCADA interface panels; completion of switchgear manufacturer specification pro-formas; and cable and termination schedules.

- FEED for 10MW Wind Farm:
  Substation layout drawing, HV cable specifications, HV switchgear specifications, DC battery charger specifications and substation/wind turbine indicative earthing designs.

REPRESENTATIVE PROJECTS (continued)

- Berry Burn Wind Farm – FEED:
  Lead FEED for 72.5MW wind farm which included cable array design, protection design and 33kV switchgear specification

- Carried out a study of likely onshore reinforcements required for connecting a Round 3 developer's offshore Wind Farm onto the GB transmission system:
  Built an AC load flow model of the GB transmission system by designing a data automation tool to load network data into PSSE from National Grid's Seven Year Statement and generation merit order data obtained from a commercial partner. Using this PSS/E model, carried out N-2 contingency analysis studies to determine thermal overloads on circuits. Designed network reinforcement strategies based on these findings, inputted these into the model and re-ran contingency studies to determine their effect. The results of the exercise were used to assist the Round 3 developer in negotiations with National Grid on likely connection costs

- National Grid Offshore Development Information System:
  Carried out research and compiled technical data sheets for offshore transmission assets to be included in the annual offshore development information system. Developed a strong understanding of offshore transmission technologies: offshore substations, subsea EHV cables and HVDC convertor stations.

- Kildrummy Wind Farm:
  Produced the Protection Design Study for 33kV / 18.4MW Wind Farm.

- Bankend Rig:
  Carried out dynamic modeling study in PSS/E to size STATCOM for 14.3MW Wind Farm.

- Little Raith Wind Farm:
  Detailed engineering studies for 33kV connected 25MW Wind Farm in Scotland: load flow, fault level study, P28 voltage flicker, earthing and lightning protection

- Anaerobic Digestion Facility:
  Earth grid design for 33/11kV primary substation and 11/0.4kV secondary distribution substations.

- Record Hill Wind Farm:
  Earthing design study for 50MW Wind Farm in the United States (34.5kV collector network) to IEEE80.

- Electrical and earth grid design for small wind turbine (300kW) installations with on-site load distribution substations.

- RenewableUK / Scottish Renewables / The Crown Estate Study – "Analysis of the postponement of SHE-T transmission works:
  Led a team of seven staff carrying out a study, the findings of which were presented to the April 2013 Electricity Networks Strategy Group meeting.

- Senergy Econnect Health and Safety Coordinator:
  Assist in maintaining Occupational Health and Safety Assessment Series 18001 compliance. Ensure risk assessments are carried out.

STEVEN J. FOLEY
Electrical Designer

SGC Engineering, LLC
a part of Senergy

Academic Background

Bachelor of Science
Ecology & Environmental Science
University of Maine - 2003

Associate of Applied Science
Electrical Engineering Technology
Southern Maine Community College - 2009

AutoCAD Advanced –
MicroCAD Training and Consulting

INTRODUCTION

Mr. Foley is an Electrical Designer with five years experience providing engineering, design, survey and drafting support. He has been involved in numerous substation and transmission projects including wind farm collectors and substations, utility upgrades and expansions. He is proficient and knowledgeable in AutoCAD 2013 and MicrostationV8i.

REPRESENTATIVE PROJECTS

- Rollins Mountain Substation:
  Supporting completion of the design package; including equipment layout, conduit and grounding plans, wiring diagrams and elementary drawings.

- Record Hill Substation:
  Performing preliminary design; including preparation of one-line, general arrangement, and elevations.

- Kibby Mountain Wind Farm:
  Providing design and drafting support for the substation – in particular the as-built drawing package. Assisting survey technicians with the location and flagging of clearing limits.

- Stetson Substation:
  Providing design and drafting support; including the preparation of record drawings and operation and maintenance manuals.

- El Furrial Substation:
  Supporting completion of the design package; including drafting, document control and extensive coordination with off-site project members on an accelerated time line.

- Kingdom Community Wind:
  Support design and drafting of 46kV Transmission line package.

- Green Mountain Power – Line 3307 Reconductor:
  Performing drafting and design support; including Plan & Profile and Structure Detail drawings.

- Bangor Hydro – Epping & Rebel Hill Substations:
  Providing design, drafting and document control for Planning and Control drawing packages.

- Bangor Hydro – Downeast Reliability Project, Lines 51 and 93 Upgrade, Line 66 Static Wire Replacement:
  Providing design, drafting and drawing production support for T&D packages; including Plan and Profile and Structure Detail drawings.

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 and Noise Control Engineering.

Professional Experience

Over 25 years of experience in environmental assessments, project engineering and design, and regulatory permitting for major industrial and power generation facilities, wind power projects, natural gas and utility 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. He has been involved with acoustic studies of numerous utility-scale wind turbines in Maine since 2002 and was the lead acoustical engineer on the first two wind energy facilities at Stetson Mountain in Washington County and Mars Hill Wind Farm in Aroostook County. Recently, he conducted ambient sound measurements on Monhegan Island for the University of Maine in support of the Aqua Ventus off-shore wind project.

Mr. Bodwell has conducted peer reviews of environmental sound assessments for the Maine Department of Environmental Protection, the Maine Public Utilities Commission, the Saco River Corridor Commission and several municipalities in Maine. He has provided noise impact assessments and acoustic modeling for municipal projects such as schools, boilers, and regional transportation planning studies and assisted with the development of local noise control ordinances. He also developed and conducted an Environmental Acoustics Seminar for project managers and technical staff at the Maine DEP.

As a principal engineer, he has provided expert testimony at state hearings and municipal reviews in successful support of major industrial, institutional and energy projects in Maine including Bull Hill Wind, Stetson Wind, Rollins Wind, Maritimes & Northeast Pipeline, Bath Iron Works, Maine Medical Center, and Waste Management of Maine.

Major industrial projects include paper mills, wood chipping plants, fiberboard plants, lumber mills, natural gas compressor stations, LNG facilities, and natural gas and biomass power generation facilities. Acoustic studies were conducted to quantify major noise sources and developed designs and specifications for effective

environmental and interior noise control. Other projects include firewood processing plants, landfill operations, gravel extraction and aggregate processing (rock crushing and asphalt plants), bottling plants, transportation facilities and roadways.

Mr. Bodwell has advanced his firm's capabilities to provide evaluation and testing of underwater sound. He collaborated with the National Marine Fisheries Service to develop and implement the underwater sound testing program for construction of the Front Street Shipyard in Belfast, Maine. This testing program assessed underwater sound levels from pile driving to evaluate compliance with U.S. Army Corps of Engineers permit requirements. He teamed with marine scientists and biologists to evaluate underwater sound impacts from construction and vessel operations associated with a proposed liquefied natural gas terminal in Eastern Maine.

Mr. Bodwell has worked closely with the Maine Department of Environmental Protection, Maine Land Use Regulation Commission and independent acoustical consultants to develop and refine procedures and methods for prediction, measurement and assessment of sound from wind turbines. Specialized measurement techniques and equipment were developed based on several hundred hours of sound testing of operating wind turbines in Maine and are considered to be some of the most advanced and thorough in the United States. He has promoted initiatives for national wind turbine sound testing protocols to the American Wind Energy Association and National Renewable Energy Laboratory.

Education and Credentials

Engineering Sciences graduate of Dartmouth College and completed numerous graduate and continuing education courses in ocean engineering, geotechnical engineering, business management, and acoustics.

Licensed professional engineer in Maine since 1994 and member of the Acoustical Society of America.

Certified in Hazardous Waste Operations and Emergency Response and conducted training in pollution prevention and incident response.

Wind Energy Facilities and Related Projects

- *Weaver Wind, Hancock County, Maine – 23 Turbines, 76 MW*
  Predictive sound model, ambient sound monitoring, compliance evaluation, analysis of tonal and short duration repetitive (SDR) sounds, Acoustic Study report, and public information meetings.

- *Maine Public Utilities Commission, Albion Road Substation, Benton, Maine – 345 kV*
  Review Substation sound level assessment, ambient sound measurements, and operations sound testing reports. Evaluate results in relation to Substation operations, conduct operations sound testing and evaluation of tonal sounds, review noise mitigation options.

- *Maine Aqua Ventus I, Monhegan Island, Maine – 2 Offshore Wind Turbines, 12 MW.*
  Ambient sound monitoring on Monhegan Island and assessment of potential noise impacts for various wind and ocean conditions.

- *Bingham Wind, Somerset County, Maine - 62 Turbines, 191 MW.*
  Predictive sound model, Acoustic Study report, compliance evaluation, analysis of tonal and SDR sounds, assist with sound easements and public information meetings.

- *Hancock Wind, Hancock County, Maine - 18 Turbines, 55 MW.*
  Predictive sound model, Acoustic Study report, evaluate combined wind projects and compliance with state and local noise standards, analysis of tonal and SDR sounds.

- *Oakfield Wind, Aroostook County, Maine - 50 Turbines, 154 MW.*
  Predictive sound model, Acoustic Study report, nighttime noise-reduced operating plan, analysis of tonal and SDR sounds, and electrical Substation. Assessment of low frequency and infrasound for large diameter wind turbines and in relation to wind shear and turbulence, presentation and participation in local wind energy committee workshops.

- *Bowers Wind, Washington County, Maine - 16 Turbines, 48 MW.*
  Independent review and assist Stantec Consulting with application of Maine DEP noise regulation for wind energy facilities.

- *Maine Board of Environmental Protection Rulemaking.*
  Direct testimony on behalf of Maine wind power industry, synopsis of wind turbine sound level prediction and testing in Maine, annualized sound level calculation from actual turbine operations and comparison with WHO night noise guidelines, and review of amplitude modulation test results. Testimony led to key findings by the State of Maine for preparation of new noise standards for Wind Energy facilities.

- *Bull Hill Wind, Hancock County, Maine - 19 Turbines, 34 MW.*
  Predictive and as-built sound models, Acoustic Study report, presentation and participation in local wind energy committee workshops and direct testimony at Maine Land Use Regulation Commission hearings. Post-construction operations test protocol and advanced operations sound testing, compliance evaluation with analysis of SDR sounds.

- *Rollins Wind, Penobscot County, Maine - 40 Turbines, 60 MW.*
  Predictive modeling, Acoustic Study report, direct testimony at Maine Board of Environmental Protection (BEP) Appeal Hearing, local planning board review meetings, support financial due diligence, operations sound test protocol and testing, and compliance evaluation, analysis of tonal and SDR sounds.

- *GE Energy, GE 1.5 sle, Rollins Wind, Penobscot County, Maine.*
  Analytical and IEC 61400-11 sound testing to evaluate the relationship between turbine blade angle and sound emissions including amplitude modulation and tonal sounds. Adjustments to turbine blade angle settings for noise mitigation.

- *Mars Hill Wind Farm, Mars Hill, Maine - 28 Turbines, 42 MW.*
  Predictive and as-built sound models, Acoustic Study report, ambient sound testing, quarterly operations sound testing, collaborative diagnostic testing with GE Energy, and test protocol refinements in conjunction with Maine DEP and EnRad Consulting. Calculation of annual sound levels from turbine operating data and comparison to relevant noise standards.

- *Stetson II Wind, Washington County, Maine - 17 Turbines, 25.5 MW.*
  Predictive and as-built sound model, operations testing protocol, detailed calculation protocol for tonal and SDR sounds, advanced sound testing of wind turbine operations; compliance evaluation. Results provided key testimony in support of Maine BEP rulemaking process.

- *Stetson Wind, Washington County, Maine - 38 Turbines, 57 MW.*
  Predictive modeling, ambient sound testing, Acoustic Study report, direct testimony at Maine Land Use Regulation Commission hearings, and quarterly operations sound testing.

- *Longfellow Wind, Oxford County, Maine - 20 Turbines, 40 MW.*
  Predictive modeling, compliance evaluation, local review board and selectmen meetings.

- *Record Hill Wind, Oxford County, Maine - 22 Turbines, 51 MW.*
  Predictive sound model, Acoustic Study report, direct testimony at Maine BEP appeal hearing.

- *University of Maine Presque Isle, Aroostook County, Maine - 1 Turbine, 600 kW.*
  Predictive sound model, turbine relocation and Acoustic Study report.

- *Fox Islands Wind, Vinalhaven, Maine - 3 Turbines, 4.5 MW.*
  Initial predictive sound model and recommendations for resolution of noise issues.

- *Sheffield Wind Project, Sheffield, Vermont – 16 Turbines, 40 MW.*
  Review Acoustic Study report, operations test plan and findings by Vermont Public Service Board. Prepare evaluation for submittal to State of Vermont.

- *Minuteman Wind, Savoy, Massachusetts – 5 Turbines, 12.5 MW.*
  Review Sound Level Impact Assessment Report and conduct technical due diligence.

- *Cascade Wind, Wasco County, Oregon – 40 Turbines, 60 MW.*
  Predictive sound model and evaluate compliance with Oregon noise standards.

- *Cohocton Wind, Steuben County, New York – 50 Turbines, 125 MW.*
  Review acoustic reports, complaint response and testing protocols, and provide recommendations.

- *Kaheawa Wind, Maui, Hawaii – 34 Turbines, 51 MW.*
  Review acoustic reports and provide technical due diligence.

- *Massachusetts Department of Environmental Protection – Wind Turbine Health Impact Study.*
  Review study and provide comments for public meetings.

David P. Young, Jr., *Senior Biologist/Senior Manager*

PROFESSIONAL EXPERIENCE

1992-Present *Senior Biologist/Senior Manager*, Western EcoSystems Technology, Inc., Cheyenne, Wyoming
1991-1992 *Field Supervisor,* Wildlife International Ltd., Easton, Maryland
1990-1991 *Environmental Health Specialist,* Liberty County, Georgia
1989-1990 *Research Technician II,* Savannah River Ecology Laboratory, Aiken, South Carolina
1983-1986 *Assistant Curator,* Joseph Moore Museum of Natural History, Earlham College, Richmond, Indiana

EDUCATION

M.S.
University of Georgia
Athens, Georgia
1988
Zoology

B.A.
Earlham College
Richmond, Indiana
1986
Biology

SCIENTIFIC ORGANIZATION MEMBERSHIPS

American
Ornithologists Union

Society for the Study of Amphibians & Reptiles

Raptor Research Foundation

SPECIALTY AREAS

Threatened and Endangered Species: Experience includes: formal training in Endangered Species Act, Section 7 consultation and Habitat Conservation Plans; HCPs for wind projects; programmatic HCPs for wind power development; T&E species surveys, clearances, and monitoring; Biological Assessments for highway construction projects, water development projects, and wind power projects; paid and volunteer field technician studying threatened and endangered species. Species include: *Indiana bat, grey bat, Virginia big-eared bat, black-footed ferret*, *Preble's meadow jumping mouse, wood stork, mountain plover, piping plover, interior least tern, bald eagle, Mexican spotted owl, lesser prairie chicken, copperbelly water snake, eastern indigo snake*, *green sea turtle*, *Wyoming toad*, *Allen's Cay Rock Iguana, Riley's Rock Iguana, bull trout*, *westslope cutthroat trout*, *Ute ladies' tresses orchid*, *Colorado butterfly plant*.

Wind Power Studies: Twenty years experience conducting avian and bat research in wind resource areas and wind projects throughout the U.S., Canada, and Central America. Extensive experience supervising wildlife and natural resource studies through all phases of wind project development from early site assessment studies to post-construction monitoring and mitigation. Studies include Site Characterization Studies, Critical Environmental Issues Analyses site screening and ranking, Fatal Flaw analyses, Environmental Impact Assessments, Threatened and Endangered Species Biological Assessments and Habitat Conservation Plans, literature reviews, pre-construction baselines avian and bat studies, post-construction impact monitoring, mitigation planning, cumulative impact analyses, and Technical Advisory Committees.

Environmental Impact Assessment: Experience in environmental regulation compliance including work under the *National Environmental Policy Act, Endangered Species Act, Clean water Act,* and *Federal Insecticide, Fungicide, and Rodenticide Act*; biological assessments for impacts to threatened and endangered species; Environmental Impact Statements for water development, highway construction, and wind power projects; Categorical Exclusions, and Environmental Assessments for highway projects; Environmental Assessments for Indian reservation casinos; Environmental Impact Assessments and reports under California, Oregon, Washington, and New York State Environmental Quality Acts.

Wildlife Studies: Twenty-four years experience conducting avian research in many locations throughout U.S. - extensive knowledge of avian research methodology; mule deer classification and censuses in Wyoming; winter waterfowl surveys and classification on South Platte River, Colorado; prairie dog management plan for the Pine Ridge Indian Reservation, South Dakota; mark-recapture and census studies of turtle populations in U.S. and Mexico; mark-recapture studies and surveys for bats in Indiana; volunteer field technician for copperbelly water snake studies in Indiana; raptor, mountain plover, sage grouse lek, and general avian monitoring for Wyoming Wind Plant; avian, raptor, and raptor nest surveys for wind projects throughout the U.S., Canada, and Central America.

ADDITIONAL TRAINING AND EDUCATION

Habitat Conservation Planning and Interagency Consultation for Endangered Species, U.S. Fish and Wildlife Service, National Conservation Training Center

Survey Techniques and Methods for Black-footed Ferret, Preble's Meadow Jumping Mouse, Wyoming Toad, Spotted Owl, Ute Ladies' Tresses Orchid & Colorado Butterfly Plant, USFWS, USFS, and BLM, Wyoming, Colorado, and Arizona Field Offices

Basic Wetland Delineation, Wetland Training Institute, Inc., San Diego, California

Studies for Resource Selection, Western EcoSystems Technology, Inc., Lakewood, Colorado

Supervisory Development Workshop, Wildlife International, Ltd., Easton, Maryland

Jeff Gruver, *Consulting Ecologist/Biologist*

PROFESSIONAL EXPERIENCE

2007-Present	*Consulting Ecologist,* Western EcoSystems Technology, Inc., Laramie, Wyoming
2004-2007	*Research Assistant,* University of Calgary, Canada
2002-2003	*Research Zoologist,* Wyoming Natural Diversity Database, Laramie, Wyoming
2000-2002	*Research & Graduate Teaching Assistant,* University of Wyoming, Laramie, Wyoming
1999-2000	*Research Technician,* Western EcoSystems Technology, Inc., Laramie, Wyoming
1998	*Wildlife Biologist,* Weyerhaeuser Company, Springfield Oregon

EDUCATION

M.S., Zoology and Physiology
University of Wyoming
Laramie, Wyoming
2002

Non-Degree, Wildlife Science
Oregon State University
Corvallis, Oregon
1998

B.S., Economics
The Pennsylvania State University
1993

SCIENTIFIC ORGANIZATION MEMBERSHIPS

The Wildlife Society

North American Society for Bat Research

Northeast Bat Working Group *(current Secretary)*

Midwest Bat Working Group

Western Bat Working Group

SPECIALTY AREAS

Wind Power Studies & Acoustic Analysis: Design and implementation of studies to assess impacts of wind power development on bats and bat populations. Studies included use of acoustic detection and interpretation of echolocation data to assess relative risk to bats, meta-analysis of acoustic study results from broad spatial and temporal perspectives, exploration of quantitative methods for assessing species presence and relative abundance based on acoustics.

Habitat Conservation Planning: Involved in several seminal bat-related HCP's, including Beech Ridge, WV and the Midwest Wind Energy Multi-species HCP.

Bat Ecology, Physiology and Conservation: Over 17 years of experience studying bats in forested and non-forested habitats, using radio-telemetry to investigate habitat relationships, and acoustics to investigate behavioral patterns and presence or absence. Investigation of physiological and ecological responses of bats to environmental conditions.

RELEVANT EXPERIENCE

Maine: Experience on 3 wind projects in Maine, including pre-construction acoustic studies to assess bat activity patterns and pre-construction acoustic study to determine presence/absence of northern long-eared bat.

Northeast Bat Working Group: Currently serving on the Board as Secretary. Attend Board and Annual Meetings, help plan Annual Meetings, maintain NEBWG records, etc. Representing NEBWG in helping to launch a national bat working group and in planning for a combined meeting with the Midwest and Southeast Working Groups in 2015.

USFWS Region 5: Have worked on dozens of projects in Region 5, including development of HCP/ITP's, pre- and post-construction bat studies, acoustic and mist-net studies to assess presence/absence of federally listed (and proposed) bat species, habitat assessments for state-listed species, and assessment of draft survey guidelines for Region 5. Excellent working relationships with most of the state bat biologists and the FWS biologists that deal with bat issues.

USFWS Region 3: Have worked on dozens of projects in Region 3, including development of HCP/ITP's, pre- and post-construction bat studies, acoustic studies to assess presence/absence of federally proposed bat species. Conducted study evaluating efficacy of novel acoustic deterrent to reduce bat fatalities. Conducted thermal camera studies to evaluate bat activity near turbines, including the first of its kind study with nacelle-mounted cameras. Excellent working relationships with agency biologists.

RECENT PROFESSIONAL PUBLICATIONS

Clement, M.J., K.L. Murray, D.I. Solick, and **J.C. Gruver**. 2014. The effect of call libraries and acoustic filters on the identification of bat echolocation. Ecology and Evolution 4(17) 3482-3493.

Hein, C. D., **J. Gruver**, and E. B. Arnett. 2013. Relating pre-construction bat activity and post-construction bat fatality to predict risk at wind energy facilities: a synthesis. A report submitted to the National Renewable Energy Laboratory. Bat Conservation International, Austin, TX, USA.

Solick, D.I., **J.C. Gruver**, M.J. Clement, K.L. Murray, and Z. Courage. 2012. Mating eastern red bats found dead at a wind-energy facility. Bat Research News, 53(2): 15-18.

Kimberly J. Bay, *Biometrician*

PROFESSIONAL EXPERIENCE

2010-Present	*Data Analysis and Reports Manager,* Western EcoSystems Technology, Inc., Cheyenne, Wyoming
2005-2010	*Biometrician,* Western EcoSystems Technology, Inc., Cheyenne, Wyoming
2001-2005	*Data Technician,* Western EcoSystems Technology, Inc., Cheyenne, Wyoming
1999-2002	*Teaching Assistant,* Department of Statistics, University of Wyoming, Laramie, Wyoming

EDUCATION

M.S.
University of Wyoming
Laramie, Wyoming
2003
Statistics

B.S.
University of Wyoming
Laramie, Wyoming
2000
Mathematics/Statistics

SPECIALTY AREAS

Data Analyst and Report Manager: Due to large increase in wind-energy projects, Ms. Bay has taken on the role of managing the data analysis and report compiling for wind-energy projects. This requires the management of the data entry, qa/qc, analysis, report compiling, technical editing, and the personnel associated with these tasks.

Database Creation and Management: Ms. Bay has extensive consulting experience in the design and use of relational databases for data management. Ms. Bay primarily uses R, SAS, Arcview, Microsoft Access, and Microsoft Excel to manage data and visually display information. Ms. Bay has been involved in the creation of data entry forms in Microsoft Access and Excel to facilitate data entry and data collection sheets in Microsoft Word and Excel to facilitate data collection in the field.

Data Analysis: Ms. Bay has conducted extensive data analysis to assess impacts of wind-energy development on birds, bats and other wildlife as a consultant for WEST. The work requires programming in R and SAS and the usage of Arcview, Microsoft Excel, and Microsoft Access. She has also completed several distance analyses on whales, birds and bats using the Distance program.

Meta-Analysis: Ms. Bay has developed and maintains several large cumulative databases associated with data collected during surveys both prior to and after wind-energy development. The compilation of this data enables Ms. Bay and others at WEST to complete large meta-analyses to further explore the impacts of wind-energy on various wildlife taxa.

Resource Selection Functions: Ms. Bay has been involved in estimating resource selection functions using data from field observations and data extracted from GIS layers. Specific examples include studies of habitat selection by moose on the Yukon Flats National Wildlife Refuge in Alaska, habitat selection by moose on the Kanuti National Wildlife Refuge in Alaska, and habitat selection by mountain goats in the Chugach National Forest in Alaska.

SELECTED PROFESSIONAL PUBLICATIONS

Erickson WP, Wolfe MM, **Bay KJ**, Johnson DH, Gehring JL (2014) A Comprehensive Analysis of Small-Passerine Fatalities from Collision with Turbines at Wind Energy Facilities. PLoS ONE 9(9): e107491. doi:10.1371/journal.pone.0107491

Holst, M., C.R. Greene Jr., W.J. Richardson, T.L. McDonald, **K. Bay**, S.J. Schwartz and G. Smith. 2011. Responses of pinnipeds to Navy missile launches at San Nicolas Island, California. Aquat. Mamm. 37(2):139-150.

Anderson, R., W. P. Erickson, M. D. Strickland, M. Bourassa, **K. J. Bay,** K. J. Sernka, J. Tom, and N. Newmann. 2004. Avian Monitoring and Risk Assessment at the San Gorgonio Wind Resource Area. Subcontract Report for the California Energy Commission, the National Renewable Energy Laboratory, and the American Wind Energy Association.

Johnson, G. D., M. D. Strickland, W. P. Erickson, and **K. J. Bay.** 2004. Final Report, Spring Migration Avian Studies for the Proposed Long Island Power Authority Offshore Wind Power Project, Long Island, New York. Technical Report Prepared for FPL Energy.

Erickson, W. P., J. Jeffrey, K. Kronner, and **K. Bay.** 2004. Stateline Wind Project Wildlife Monitoring Final Report, July 2001 – December 2003. Technical report peer-reviewed by and submitted to FPL Energy, the Oregon Energy Facility Siting Council, and the Stateline Technical Advisory Committee.

Erickson, W. P., G. D. Johnson, D. P. Young, Jr., M. D. Strickland, R. E. Good, M. Bourassa, **K. Bay.** 2002. Synthesis and Comparison of Baseline Avian and Bat Use, Raptor Nesting and Mortality Information from Proposed and Existing Wind Developments. Technical Report prepared for Bonneville Power Administration, Portland, Oregon.

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.

- **Historic Properties Management Plans for the Milford, Stillwater and Veazie Projects (1999).** The HPMPs for these central Maine, federally licensed dams were prepared for Penobscot Power & Light, Maine. The plans call for data recovery and interpretation of findings at several large and important prehistoric Native American sites and also include public education initiatives.

- **Historic Properties Management Plans for the Maine Army National Guard (2002).** The CRMP for the Maine Army National Guard was completed in 2002 to provide a model for managing known and anticipated cultural resources in the Guard's training facilities, which are located around the state of Maine.

Native American Consultation
Dr. Will has worked with leaders of the Penobscot Indian Nation and the Passamaquoddy Tribe since 1998 and has earned their trust as an honest and reliable negotiator. He has worked with these Native American tribes to negotiate cultural resources management plans on behalf of the U.S. Environmental Protection Agency, the Maine Army National Guard, and PPL Maine. Currently, he serves as consulting archaeologist to the Passamaquoddy Tribal Historic Preservation Officer. He has also worked on Section 106 consultation with leaders of the Seneca, Tonawanda Seneca, and Tuscarora Indian Nations in western New York.

Lithic and Faunal Analysis
Dr. Will has advanced graduate training in the identification and analysis of prehistoric Native American stone and bone artifacts as well as food bone remains recovered from archaeological sites. He has conducted studies on these materials from sites in Maine, Montana, and the High Arctic. His research has been published in ***American Antiquity***, ***Archaeology of Eastern North American***, ***Lithic Technology***, ***Northeast Anthropologist***, ***and Zooarchaeological Research News***, to name but a few.

Report Writing and Editing
Dr. Will is the author or co-author of more than 80 archaeological reports ranging in length from a few dozen pages to more than 450 pages. He has co-authored a book on dinosaurs and has also written and published on criminal justice issues, such as alternative sanctioning for non-violent offenders and AIDs in prison. Dr. Will served as Associate Editor (1986–1994) for ***Crime and Justice***, and internationally acclaimed book series published by the University of Chicago Press and currently serves as Editor for the ***Maine Archaeological Society Newsletter***.

Public Education
Dr. Will has been actively involved in public education for more than a decade. He serves as an Adjunct Professor of Quaternary Studies at the University of Maine where he advises graduate students and teaches courses in archaeology. Additionally, he teaches adult education courses, speaks in the public school system, and frequently is asked to lecture on archaeology to historic societies and civic organizations. One of his major accomplishments is the production of archaeological curriculum materials that are now in use in more than 50 Maine schools and libraries.

PROFESSIONAL AFFILIATIONS

- **Adjunct Professor**, Institute for Climatic Change, University of Maine
- **Chair (ex officio)**, Maine Historic Preservation Commission
- **Editor,** Maine Archaeological Society Newsletter
- **Research Associate (ex officio)**, Robert Abbe Museum
- **Member, Board of Directors (ex officio),** Maine Humanities Council
- **Member, Board of Directors (ex officio)** Woodlawn Museum

PUBLICATIONS AND PRESENTATIONS
Dr. Will has published in several scholarly journals, has authored and coauthored numerous cultural resources management reports, and has presented at professional meetings

Journal and book articles

2014 Precontact Pottery from Moosehead Lake, Maine: Some Insights on Manufacture and Use. *Bulletin of the Maine Archaeological Society* 54(1):1–45.

2013 The Limington Rips Site (7.4). *Bulletin of the Maine Archaeological Society* 53(2):31–61.

2012 Site 117.39: A Probable Middle Archaic Chipped Stone Tool Workshop and Cache Location, Rockwood, Maine. *Bulletin of the Maine Archaeological Society* 52(1):27–56.

2007 The Corrigan Site (with Edward Moore. *The Maine Archaeological Society Bulletin* (47):35–50.

2006 Intersite Comparisons of Archaic Period Stone Artifacts: The Clark I Site and the Gulf of Maine Archaic Tradition (with James Clark). In *The Archaic of the Far Northeast*, edited by David Sanger and M. A. P. Renouf. The University of Maine Press, Orono.

2003 Bone Artifacts: Continuity in Technology and Form. In Pre-European Archaeological Sites Along the Maine Coast. *Northeast Anthropology* 64:5–16.

2002a Understanding Archaic Period Ground Stone Tool Technology through Debitage Analysis from the Clark I Site, Norridgewock, Maine. *Archaeology of Eastern North America* 30:29–38.

2002b Recent Late Paleoindian Finds in Maine (with Edward Moore). *Bulletin of the Maine Archaeological Society* 42(1):1–14.

2001a The Bombazee West Site (52.10): A Small Ceramic Period Site on the Kennebec River (with Karen Mack and Alice Kelley). *Bulletin of the Maine Archaeological Society* 41(1):1–23.

2001b A Tale of Two Flint-Knappers: Implications for Lithic Debitage Studies in Northeastern North America. Lithic Technology 25(2):101–119.

2000 Calcined Turtle Bones from the Little Ossipee North Site in Southwestern Maine (with Kristin Sobolik). Archaeology of Eastern North America 28:15–28

Radiocarbon Chronology of Northeastern Paleo-American Sites: Discriminating Natural and Human Burn Features (with Robson Bonnichsen). In Ice Age Peoples of North America: Environments, origins, and Adaptations of the First Americans, edited by R. Bonnichsen and K. Turnmire. Oregon State University Press, Corvallis.

1998 Archaeological Investigations at the Janet Cormier Site (23.25), Poland, Maine (with Edward Moore). Bulletin of the Maine Archaeological Society 38(1):23–38.

1997 Excavations and Endscrapers at the Chan Site (177.2) (with Edward Moore and James Clark). Bulletin of the Maine Archaeological Society 37(2):1–23.

1996a Stone Artifact Movement on Impounded Shorelines: A Case Study from Maine (with James Clark). American Antiquity 61(3):499–519.

1996b A Probably Middle Archaic Cemetery: The Richmond-Castle Site in Surry, Maine (with Rebecca Cole-Will). Archaeology of Eastern North America 24:149–158.

1996c An Example of Late Middle Ceramic (Woodland) Period Biface Production Technology, Moosehead Lake, Maine. Archaeology of Eastern North America 24:227–238.

1990 A Preliminary Report on the Ann Hilton Site (with Rebecca Cole-Will). The Maine Archaeological Society Bulletin 15:1–11.

1984 Muskox Procurement and Use on Banks Island by Nineteenth Century Copper Inuit. In: D.R. Klein, R.G. White and S. Keller (eds.) Proceedings of the First International Muskox Symposium. Biological Papers of the University of Alaska, Special Report, No. 4:153–161.

1982a The Use of Wildlife Data in Archaeological Faunal Analysis. Canadian Journal of Anthropology 2(2):189–194.

1982b Review of Bones: Ancient Men and Modern Myths by L.R. Binford. Zooarchaeological Research News 1(1):7–8.

1980 Cultural Modification of Bone: The Experimental Approach in Faunal Analysis (with Robson Bonnichsen). In: B.M. Gilbert, (ed.) Osteoarchaeology: North America, pp. 7–30. Laramie, Wyoming.

1979 Prehistoric Pottery from Two Maine Sites. Maine Archaeological Society Bulletin 19:31–41.

Reports

2014 Phase III Archaeological Investigations of the Channer Point Site (130.27), Moosehead Lake Outlet Dams Hydroelectric Storage Project, Somerset County, Maine (FERC No. 2671). Report on file with the Maine Historic Preservation Commission, Augusta, ME.

2013a Phase III Data Recovery for NPP5: Niagara Power Project (FERC No. 2216.). (With E. Moore, K. E. Mack, and J. Clark). Report prepared for the New York Power Authority, White Plains.

2013b Results of a Phase II Cultural Resources Investigation of the Access Road on the Eddington Bend Site, or Site 74.8 in Eddington, Penobscot County, Maine (with K. E. Mack). Report on file with the Maine Historic Preservation Commission, Augusta, ME.

2013c Historic Properties Management Plan for the Flagstaff Project (FERC No. 2612). Document prepared for Brookfield Renewables, Hallowell, Maine.

2013d Monitoring of Archaeological Sites and Resources within S.D. Warren Company's Presumpscot River Hydroelectric Projects. (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta, ME.

2011 Results of Phase I Archaeological Survey of the Antrim Wind Energy Project Antrim, Hillsborough County, New Hampshire. (with Karen Mack). Report on file at New Hampshire Division of Historical Resources, Concord, NH.

2010a Maine Power Reliability Program: A Central Maine Power Company Program, Phase II Precontact Archaeological Resources Report. (with James Clark, Karen Mack, and Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta, ME.

2010b Maine Power Reliability Program: A Central Maine Power Company Program, Precontact Archaeological Survey Report for MPRP Segment 15Alt, Re-Rate Segments 30A, 34B, 34C, 35B, 38B, 41, Substations & Minor Modifications. (with James Clark, Karen Mack, and Maureen Smith). Report on file with the Maine Historic Preservation Commission, Augusta, ME.

2010c Results of Phase II Precontact Archaeological Investigations of Site 74.172 in Milford, Penobscot County Maine as part of Bangor Hydro Electric Company Line 64 Rebuild Project. (with Karen Mack and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2010d Results of Phase I Precontact Archaeological Survey of the GenLead LLC, Transmission Line, Aroostook and Penobscot Counties, Maine. (with Karen Mack and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2010e Results of Phase III Precontact Archaeological Investigations of Site 74.8 in Eddington Bend, Penobscot County Maine as part of Bangor Hydro Electric Company Line 64 Rebuild Project. (with Karen Mack and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2010f Results of Phase I/II Archaeological Survey of the Public Service Company of New Hampshire's Eliot Substation Project, York County Maine. (with Karen Mack). Report on file with the Maine Historic Preservation Commission, Augusta.

Mack, Karen and James Clark

2009a Report on 2007 Archaeological Data Recovery Big Ram Site (Site 36.32) Gulf Island/Deer Rips Hydroelectric Project (FERC #2283) Androscoggin County, Maine. (with Karen Mack and James Clark. Report on file with the Maine Historic Preservation Commission, Augusta.

Mack, Karen and James Clark

2009b Results of Phase I Precontact Archaeological Survey of the Bangor Hydro Electric Company Line 64 Rebuild Project, Penobscot County, Maine. (with Karen Mack and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2009c Report on 2007 Archaeological Data Recovery Cape Site (Site 36.27) Gulf Island/Deer Rips Hydroelectric Project (FERC #2283) Androscoggin County, Maine. (with Karen Mack and James Clark). Report on file with Maine Historic Preservation Commission, Augusta.

2009d Phase II Determination of eligibility for precontact period archaeological resources, Salem – Manchester IM-IR-93-1(174)0, 10418C, I-93 Transportation Improvement Project, prepared for Parsons-Brinckerhoff. (with Karen Mack, James Clark, and Larry Elrich). Report on file at New Hampshire Division of Historical Resources, Concord, NH.

2008 Phase II Cultural resources Investigation: Niagara Power Project (FERC No. 2216). Report on file with the New York Power Authority, White Plains and the New York Office of Parks, Recreation, and Historic Preservation, Albany.

2006a Phase IB Cultural resources Investigation: Niagara Power Project (FERC No. 2216). Report on file with the New York Power Authority, White Plains and the New York Office of Parks, Recreation, and Historic Preservation, Albany.

2006b Phase I & II Archaeological Survey, Tinker Hill Subdivision, Ellsworth, Hancock County, Maine. (with Rebecca Cole-Will and Jacob Freedman). Report on file with the Maine Historic Preservation Commission, Augusta.

2006c Results of Phase I prehistoric Archaeological Survey of the Littlejohn Subdivision, Yarmouth, Cumberland County, Maine. (with Jacob Freedman). Report on file with the Maine Historic Preservation Commission, Augusta.

2005 VOICES OF THE PEOPLE: Perspectives on Project Effects by the Tuscarora. Report on file with the New York Power Authority, White Plains, and the Tuscarora Nation, Sanborn, New York.

2004a Results of Phase III Archaeological Data Recovery at Sites 121.52a and 121.52b Located within the Penobscot Mills Project (FERC No. 2458), Piscataquis County, Maine (with E. Moore, J. Marron, and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2004b Reconnaissance Archaeological Survey of the Land for Maine's Future Board Parcel Located on Tinker Island, Hancock County, Maine (with Peter Morrison and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2003a Phase II Investigations of the Bar Mills Project (FERC No. 2194), York County, Maine (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

2003b The Archaeology and Prehistory of Moosehead Lake, Maine: Phase III Data Recovery from Seven Sites (with J Clark, L. Elrich, and B. Newsom). Report on file with FPL Energy Maine Hydro, LLC, 160 Capitol Street, Augusta.

2003c Results of a Partial Phase III Archaeological Data Recovery at Five Sites within the Ripogenus Hydroelectric Project (FERC No. 2572), Piscataquis County, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2002a Results of a Phase I Archaeological Survey of the Proposed Merrymeeting Airfield Project Bowdoinham, Maine (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

2002b Report on a Phase I Archaeological Survey of the Bar Mills Project (FERC No. 2194), York County, Maine (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

2002c Report on a Phase I and Phase II Archaeological Survey and Study of the Maine Natural Gas Mid-Coast Natural Gas Pipeline Project, Bowdoin to Brunswick, Maine (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

2002d Phase I Prehistoric Archaeological Survey of the Ferland Farm Project, Poland, Androscoggin County, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

2002e Phase I Archaeological Survey of the Portland International Jetport Project, South Portland, Cumberland County, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

2001a Report on a Phase I Archaeological Survey of Bangor Hydro-Electric Company's Line 13 Reroute, Hancock, Maine (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

2001b Phase I Archaeological Survey of the Monmouth Water Main Interconnection, Monmouth, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

2001c Report on a Phase I Archaeological Survey of the Proposed Eliot Natural Gas Compressor Station, York County, Maine (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

2001d Report on a Phase I Archaeological Survey of the McGrath Pond Municipal Recreation Area, Oakland, Maine (with Bonnie Newsom). Report on file with the Maine Historic Preservation Commission, Augusta.

2001e The Esker Site (84.12): A 14C Dated Paleoindian Campsite along the Kennebec River in Caratunk, Maine (with Edward Moore and Christopher Dorion). Report on file with the Maine Historic Preservation Commission, Augusta.

2000a The Clark I Site (52.16): Results of Phase III Prehistoric Archaeological Resource Investigations in the Weston Hydroelectric Project (FERC #2325), Norridgewock, Somerset County, Maine (with James Clark, Bonnie Newsom, Karen Mack, and Christopher Dorion). Report on file with the Maine Historic Preservation Commission, Augusta.

2000b Phase I Archaeological Survey of the Proposed Calpine Electrical Transmission Project, Gorham to Westbrook, Cumberland County, Maine (with Julia Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

2000c Results of Phase I and II Archaeological Testing of the Great Works Hydroelectric Project, FERC No. 2312, Penobscot County, Maine (with Julia Clark, Karen Mack, John Mosher, and Bonnie Newsom). Report on file with the Maine Historic Preservation Commission, Augusta.

2000d Results of Phase III Archaeological Testing of the Proposed University of New England's Marine Studies Center, Biddeford, York County, Maine (with Karen Mack). Report on file with the Maine Historic Preservation Commission, Augusta.

2000e Results of Phase I and II Archaeological Testing of the Eastern Surplus Company Superfund Site, Meddybemps, Washington County, Maine (with Julia Clark, Karen Mack, John Mosher and Bonnie Newsom). Report on file with the Maine Historic Preservation Commission, Augusta.

2000f Phase III Archaeological Investigations of the Tim Pond Brook Site (84.40), Franklin County, Eustis, Maine (with John Mosher). Report on file with the Maine Historic Preservation Commission, Augusta.

1999a Phase III Archaeological Resource Mitigation of the Chartier Field Site (7.12) in the Bonny Eagle Hydroelectric Project (FERC #2529), Standish, Maine (with Edward Moore and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1999b The Limington Rips Site (7.4): Results of Phase III Prehistoric Archaeological Resource Mitigation on the Bonny Eagle Hydroelectric Project (FERC #2529), Limington, Maine (with Edward Moore and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1999c Phase III Archaeological Resource Mitigation of the Quartz Scraper Site (36.29), Gulf Island/Deer Rips Hydroelectric Project (FERC #2283), Turner, Androscoggin County, Maine (with James Clark and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1999d Additional Phase I Archaeological Survey of the Proposed University of New England Marine Center, Biddeford, York County, Maine (with Karen Mack). Report on file with the Maine Historic Preservation Commission, Augusta.

1999e Phase II Archaeological Testing of the Storage Project (FERC No. 2634), Piscataquis and Somerset Counties, Maine (with James Clark and Julia Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1999f Cultural Resource Investigations, Maritimes & Northeast Pipeline, L.L.C., Phase II Pipeline Project, Maine. FERC Docket No. CP96-809-000: Prehistoric Archaeological Survey Report for January 1998 – February 1999 (with Julia Clark and Karen Mack). Report on file with the Maine Historic Preservation Commission, Augusta.

1999g Cultural Resource Investigations, Maritimes & Northeast Pipeline, L.L.C., Phase II Pipeline Project, Maine. FERC Docket No. CP96-809-000: Prehistoric and Historic Archaeological Investigations Along Proposed Laterals, 1998 (with Julia Clark, Karen Mack, Wayna Roach, and Kathleen Wheeler). Report on file with the Maine Historic Preservation Commission, Augusta.

1999h The Bombazee West Site (52.10): Results of Phase III Prehistoric Archaeological Resource Investigations in the Weston Project (FERC #2325), Norridgewock, Maine (with Karen Mack and Alice Kelley). Report on file with the Maine Historic Preservation Commission, Augusta.

1999i Phase II Archaeological Study of Mooselookmeguntic Lake, Maine, Upper and Middle Dam Storage Project (FERC UL94-1) (with Edward Moore and James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1999j A Summary of Archaeological Phase I and II Investigations Conducted at Site 96.02, Meddybemps, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

1999k Phase I Archaeological Survey of the Proposed Calpine Natural Gas Lateral, Gorham to Westbrook, Cumberland County, Maine (with Julia Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1999l Cultural Resource Investigations, Maritimes & Northeast Pipeline, L.L.C., Phase II Pipeline Project, Maine. FERC Docket No. CP96-809-000: Supplemental Report, Prehistoric Archaeological Survey (with Karen Mack and Julia Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1998a Results of Phase I Archaeological Survey of the Storage Project (FERC No. 2634) (with James Clark and Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1998b Results of Phase II Archaeological Survey of the Flagstaff Project (FERC #2612), Somerset and Franklin Counties, Maine (with James Clark and Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1998c Results of Phase I Survey for Prehistoric Archaeological Resources on the Proposed RPA T/L Transmission Line Project, Oxford County, Maine (with James Clark and Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1998d Results of Phase I Archaeological Survey of the Medway Alternative to the Weldon Transmission Line Project, Penobscot County, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1998e Phase I Archaeological Survey of the Proposed Great Northern Paper Company Intermill Tie Line, Penobscot County, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1998f Results and Recommendations of a Phase 0 Archaeological Review of the Indian Pond Project (FERC #2634), Piscataquis and Somerset Counties, Maine (with James Clark and Christopher Dorion). Report on file with the Maine Historic Preservation Commission, Augusta.

1998g Results of Phase I Archaeological Survey of the Indian Pond Project (FERC No. 2142), Piscataquis and Somerset Counties, Maine (with James Clark and Christopher Dorion). Report on file with the Maine Historic Preservation Commission, Augusta.

1998h Phase I Archaeological Survey of the Sandy River Portion of the Weston Project (FERC no. 2325), Somerset County, Maine (with James Clark and Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1998i Results of Phase I Archaeological Survey of the Proposed Casco Bay Energy Gas-Fired Facility (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1998j Phase I Archaeological Survey of the Proposed West Falmouth Crossing Project, Cumberland County, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

1998k Phase II Testing of Site 8.18, West Falmouth Crossing Project, Cumberland County, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

1998l Phase I Archaeological Survey of the Gorham Energy Project in Gorham, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

1998m Reconnaissance-Level Archaeological Survey of the Craig Brook National Fish Hatchery, East Orland, Hancock County Maine (with James Clark and Kathleen Wheeler). Report on file with the U.S. Fish and Wildlife Service, Hadley, Massachusetts.

1998n Phase I Survey of the Proposed University of New England's Marine Studies Center, Biddeford, York County, Maine (with Karen Mack). Report on file with the Maine Historic Preservation Commission, Augusta.

1998o Cultural Resources Investigations, Maritimes & Northeast Pipeline, L.L.C., Phase II Pipeline Project, Maine. FERC Docket No. CP96-809-000. Volume 1: Archaeological Survey Report (with Kathleen Wheeler, Edward Moore, Ellen Marlatt, and Julia Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1997a Results of Phase I Archaeological Survey of the Proposed Line 60 Project (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1997b Interim Report on the Results of a Phase I Archaeological Survey of the Bowater/Great Northern Paper Company Storage project (FERC 2634) (with James Clark and Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1997c Results of Phase I Archaeological Survey of the Proposed Cherryfield Cranberry Project (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1997d Cultural Resources Investigations, Joint Pipeline Project, Massachusetts, New Hampshire, Maine (with multiple authors). Report on file with the Maine Historic Preservation Commission, Augusta.

1997e Archaeological Investigations at the Janet Cormier Site (23.25), Poland, Maine (with Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1997f Reconnaissance-Level Archaeological Survey of the Craig Brook National Fish Hatchery East Orland, Hancock County, Maine (with James Clark and Kathleen Wheeler). Report on file with the U.S. Fish and Wildlife Service, U.S. Department of the Interior.

1997g Phase I Archaeological Survey of Mooselookmeguntic Lake, Maine, Upper and Middle Dams Storage Project (FERC UL94-1) (with James Clark and Edward Moore). Report on file with the Maine Historic Preservation Commission, Augusta.

1996a Phase I Archaeological Resource Assessment of the Flagstaff Lake Storage Project (FERC No. 2612) Somerset and Franklin Counties, Maine (with James Clark and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1996b Phase II Archaeological testing of the Augusta Hydroelectric Project (FERC #2389) Kennebec County, Maine (with James Clark and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1996c Phase III Archaeological data Recovery at the Little Ossipee North Site (7.7) (with James Clark, Edward Moore, and others). Report on file with the Maine Historic Preservation Commission, Augusta.

1996d Results and Recommendations of Phase 0 Archaeological Review of the Storage Project (FERC #2634), Piscataquis and Somerset Counties, Maine (with James Clark and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1995a Rachel Carson National Wildlife Refuge Historic and Prehistoric Archaeological Resource Survey (with Emerson Baker, Janet Cormier, and James Clark). Report on file with the U.S. Fish and Wildlife Service, U.S. Department of the Interior.

1995b Phase I Archaeological Survey of the Magalloway Acres-Wilson's Mills Subdivision, Lincoln Plantation, Oxford County, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1995c Phase I Archaeological Survey of the Holmes Road Subdivision, Scarborough, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

1995d Archaeology on Clarks Island, Portsmouth Naval Shipyard: Results of a Phase I Archaeology Survey (with Kathleen Wheeler). Report on file with the Maine Historic Preservation Commission, Augusta.

1995e The Nicholas Site: A Late Paleoindian Campsite in Southern Oxford County, Maine (with Deborah Wilson and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1995f Phase III Archaeological Mitigation of the C. Varney Site (36.30) Gulf Island/Deer Rips Hydroelectric Project (FERC #2283) Turner, Androscoggin County, Maine (with James Clark and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1994a Phase II Archaeological Survey of Eight Prehistoric Sites Located Within the Burnham Hydropower Project (FERC No. UL91-03-ME) Area, Waldo and Somerset Counties, Maine (with Deborah Wilson and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1994b Phase II Archaeological Survey of the Moosehead Lake Outlet Dams Project (FERC #2671) Somerset and Piscataquis Counties, Maine (with James Clark, Rebecca Cole-Will, Janet Cormier, and Sarah Staber). Report on file with the Maine Historic Preservation Commission, Augusta.

1994c Phase 0 Archaeological Review of the Damariscotta Mills Hydropower Project (FERC No. UL89-34-ME) (with James Clark, Janet Cormier, and Emerson Baker). Report on file with the Maine Historic Preservation Commission, Augusta.

1994d Results and Recommendations of Phase 0 Study of the Flagstaff Storage Project (FERC #2612), Somerset and Franklin Counties, Maine (with James Clark and Janet Cormier). Report on file with the Maine Historic Preservation Commission, Augusta.

1994e Phase I Archaeological Survey of the Bar Harbor Airport Project, Hancock County, Maine. Report on file with the Maine Historic Preservation Commission, Augusta.

1994f Review of the Hancock Timber Resource Project Area for Prehistoric Archaeological Potential. Report submitted to the Conservation Group, Brunswick, Maine.

1994g Phase I Archaeological Survey of the Proposed Gravel Pit Expansion, King Brothers Trucking/Dodlin Road Gravel Pit, Enfield, Penobscot County, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1992a Phase IIA Archaeological Survey of the Moosehead Lake Outlet Dams Project (FERC #2671), Somerset and Piscataquis Counties, Maine (with James Clark and Rebecca Cole–Will). Report on file with the Maine Historic Preservation Commission, Augusta.

1992b An Archaeological Phase 0 of the U.S. Windpower - New England Energy Station. Report on file with the Maine Historic Preservation Commission, Augusta.

1992c Phase I Archaeological Survey of the Proposed International Paper, Hoytville Sand and Gravel Extraction Site in Howland, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1992d Phase I Archaeological Survey of the Proposed Tilcon/Maine Inc. Mineral Extraction Site Medway, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1992e Phase I Archaeological Survey of the Proposed Expansion of the Windham Gravel Pit, Grondin Property, Windham, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1991c Phase I Archaeological Survey of the Augusta Hydroelectric Project (FERC #2389), Kennebec County, Maine (with James Clark and Rebecca Cole-Will). Report on file with the Maine Historic Preservation Commission, Augusta.

1991b Phase I Archaeological Survey of the Moxie Pond Storage Facility (FERC # 2613), Somerset County, Maine (with James Clark and Rebecca Cole-Will). Report on file with the Maine Historic Preservation Commission, Augusta.

1991c A Report on the Excavation and Analysis in Progress of the Ann Hilton Site (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1991d Results of Phase I Archaeological Survey of the Mars Hill Wastewater Treatment Project, Mars Hill, Aroostook County, Maine (with James Clark). Report on file with the Maine Historic Preservation Commission, Augusta.

1990 Phase I Archaeological Assessment, Ellis River Pipeline, West Andover, Maine (with James Clark). Final report submitted to the Maine Historic Preservation Commission, Augusta.

1989a Phase I Archaeological Assessment, Mooseleuk Lake, Piscataquis County, Maine (with Rebecca Cole-Will). Final report submitted to the Maine Historic Preservation Commission, Augusta.

1989b Phase I Archaeological Assessment of Meddybemps Lake Subdivision, Meddybemps, Maine (with Rebecca Cole-Will). Final report submitted to the Maine Historic Preservation Commission, Augusta.

1989c Phase I Archaeological Assessment, Walker Pond Subdivision, Brooksville, Maine (with Rebecca Cole-Will). Final report submitted to the Maine Historic Preservation Commission, Augusta.

1986 A Survey for Prehistoric Site, York, Maine (with Rebecca Cole-Will). Final report submitted to the Maine Historic Preservation Commission, Augusta.

1985 A Survey for Prehistoric Sites in the Harraseeket Estuary, Freeport, Maine. Final report submitted to the Maine Historic Preservation Commission, Augusta.

1984 Nineteenth Century Copper Inuit Subsistence Strategies on Banks Island, N.W.T. Doctoral dissertation. Department of Anthropology, University of Alberta, Edmonton, Canada.

1980 A Study of Prehistoric Bone Tools from the Turner Farm Site, North Haven, Maine. Master of Science Thesis, Institute of Quaternary Studies, University of Maine, Orono.

1979 A Report on 1987 Pryor Mountain Archaeological Research (with Robson Bonnichsen). Paper No. 2. Institute for Quaternary Studies, University of Maine, Orono.

1978 An Evaluation of Shell Middens on the Coast of Maine (with David Sanger). Report prepared for the Critical Areas Act Program, State Planning Office and Maine Historic Preservation Commission, Augusta.

Presentations

2006 Effective Methods for Native American Consultation. Paper presented at the Annual Meeting of the National Association of Hydropower, Portland Oregon, August 2.

2002 Bone Artifacts and Technological Continuity in Pre-European Archaeological Sites along the Maine Coast. Paper presented at the 67th Annual Meeting of the Society for American Archaeology, Denver, March 24.

2001 Chaucoet: An Almouchiquois Village in Biddeford, Maine. Paper presented at the Maine Archaeological Society Annual Meeting, April 29, Augusta.

2000a Some New Empirical Data on the Locations of Prehistoric Archaeological Sites in Maine. Paper presented at the 65th Annual Meeting of the Society for American Archaeology, Philadelphia, April.

2000b Teaching Archaeology in the Public School System, Eighth Annual Research Symposium, University of Maine Institute for Quaternary Studies, Orono, Maine, May 9.

1998a Archaeological Resource Survey of the Proposed Maritimes & Northeast Natural Gas Transmission Pipeline, Sixth Annual Research Symposium, University of Maine Institute for Quaternary Studies, Orono, Maine, May 8.

1998b Some Recent Paleoindian Finds from Maine, 38th Annual Meeting of the New England Anthropological Association, University of Maine, March.

1997 Archaeology in the Draw Down Zone of Northern Rivers and Lakes. Fifth Annual Research Symposium, University of Maine Institute for Quaternary Studies, Orono, Maine, May 9.

1996a Landforms and Prehistory in Maine. Northeastern Friends of the Pleistocene 59th Field Conference. Machias, Maine, May 31.

1996 The Archaeological Record in the Realm of Soils and Sediments. Maine Association of Professional Soil Scientists, Waterville, Maine, March 21.

1994a The Little Ossipee North Site. Maine Archaeological Society, Bar Harbor, Maine, October 30.

1994b Soils Research Questions in Archaeology. Society for Northern New England Soil Scientists, University of Maine at Farmington, December 6.

1990 What We Know about Prehistoric Peoples. Maine Teachers Convention, Cultural Initiative of Maine, Waterville, Maine, October.

1989 The Red Paint People. Annual Meeting of the Robert Abbe Museum, Bar Harbor, Maine, October.

1986 Omingmak and the Copper Inuit. Bowdoin College, Brunswick, Maine with sponsorship of the Peary-McMillian Arctic Museum, April.

1984a Microcomputer Applications to Zooarchaeology. 17th Annual Meeting of the Canadian Archaeological Association, Victoria, British Columbia, April.

1984b Bone Technology Studies: Beyond Description (with Rebecca Cole-Will). 17th Annual Meeting of the Canadian Archaeological Association, Victoria, British Columbia, April.

1983a The Nature of Skeletal Disarticulation in Arctic Environments. 16th Annual Meeting of the Canadian Archaeological Association, Halifax, Nova Scotia, April.

1983b Utilization of Banks Island Muskox by Nineteenth Century Copper Inuit. First International Muskox Symposium, Fairbanks, Alaska, May.

1983c Omingmak: Procurement and Utilization by Nineteenth Century Copper Inuit. Boreal Circle, Boreal Institute for Northern Studies, University of Alberta, Edmonton, October.

1982a The Use of Microcomputers in Archaeological Research (with Terrance Gibson and Clifford Hickey). 47th Annual Meeting of the Society of American Archaeology, Minneapolis, Minnesota, April.

1982b Muskox Exploitation: Hunter and Gatherer Subsistence Models Re-examined. 15th Annual Meeting of the Canadian Archaeological Association, Hamilton, Ontario, April.

1982c Dental Annuli Analysis as an Aid in the Determination of Copper Inuit Subsistence Strategies (with James Savelle). 15th Annual Meeting of the Canadian Archaeological Association, Hamilton, Ontario, April.

HONORS AND AWARDS

1999 **State of Maine Historic Preservation Award.** Presented by the Maine Historic Preservation Commission at their summer meeting at Pemaquid, Maine, July.

Kathleen L. Wheeler, Ph. D., RPA
Director and Principal Archaeologist
Independent Archaeological Consulting, LLC
801 Islington Street, Suite 31, Portsmouth, NH 03801
(603) 430-2970 kwheeler@iac-llc.net

Education

1992	Ph.D., Anthropology, University of Arizona. Dissertation Title: *The Characterization and Measurement of Archaeological Depositional Units: Patterns from Nineteenth-Century Urban Sites in Portsmouth, New Hampshire*. University Microfilms International, Ann Arbor.
1985	M.A., Anthropology, University of Arizona
1981	B.A., Anthropology, University of New Hampshire (summa cum laude)

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

Experience — Dr. Wheeler has more than 25 years of archaeological experience working in New England. As Director of Independent Archaeological Consulting, LLC since 1990, she has authored or co-authored hundreds of technical reports for projects completed in the New England area. Dr. Wheeler designs and oversees field projects, conducts analysis, and prepares reports. In addition, Dr. Wheeler has presented a number of scholarly papers to professional associations and the general public presenting the results of her research in New England. She has directed numerous projects for road, utility, and bridge construction projects in all parts of New Hampshire.

Kathleen Wheeler – Cultural Resources/Archaeology – selected projects

- Central Maine Power, Maine Power Reliability Program (2008-present) – Principal Investigator for survey of 300+ miles of transmission corridor, from Phase 0 sensitivity assessment to Phase II site evaluations. Documented 30 rural home- and farmsteads, conducting Phase II studies at 24 of them
- U.S. Navy – *Portsmouth Naval Shipyard, Kittery, Maine* (1995 to present) – Principal Investigator for multiple projects at the shipyard including monitoring the demolition of buildings and quay walls; installation of ATV lines and natural gas lines; survey for Revolutionary War era Fort Sullivan; and the data recovery of 1820s powder magazine overlooking Back Channel
- HNTB – *Memorial Bridge over the Piscataqua River, and the Scott Avenue Approach Bridge, Portsmouth, NH* (2008-present) - NHDOT, Federal Highways. Principal Investigator for sensitivity assessment for bridges established on the old shoreline of the Piscataqua River where wharves, warehouses, and docks stood from Portsmouth's earliest settlement. During 2012 construction, oversaw the recovery of deposits from the Henry Seaward Homestead, dating to late 1700s and early 1800s.
- Parsons-Brinkerhoff –*I-93 Transportation Corridor, Salem to Manchester, NH* (2004-present) for NHDOT and Federal Highways. Principal Investigator for multi-year project along 19 miles of highway corridor. Designed and implemented Phase II and III archaeological investigations of eleven 19th-century farmsteads. Coordinator for archaeological PreContact Native American site work along the same highway corridor.

Jacob D. Tumelaire
Project Archaeologist
Independent Archaeological Consulting, LLC
801 Islington St., Suite 31, Portsmouth, NH 03801
603 430-2970 jtumelaire@iac-llc.net

Duties: Supervision of all phases of archaeological investigation (research, survey, site identification, preparation and excavation) including in-field adjustments to testing strategies. Accurate site map creation and digital conversion. Artifact analysis and data interpretation/manipulation utilizing various software programs. Writing, review and final publication of archaeological reports. Regular communication with clients regarding site status and results. Knowledge of both Prehistoric Native American and Euroamerican cultural materials, settlement patterns and behavioral trends. Extensive use of GPS navigation, processing and software as well as GIS technology.

EDUCATION

2014 M.A., Anthropology (Archaeological emphasis), Northern Arizona University, Flagstaff, AZ
Notable Courses/Coursework Completed: Ceramic Analysis, Lithic Analysis, GIS.

2005 B.A., Anthropology, Northern Arizona University, Flagstaff, Az. *Minor, History*

CERTIFICATION

Member Register of Professional Archaeologists (RPA);
Meets Secretary of Interior 36-CFR-61 Standards for Archaeologists;

SELECTED PUBLICATIONS AND TECHNICAL REPORTS

2012 *Results of Phase IB Intensive Archaeological Investigation and Phase II Determination of Eligibility for the Route 125 Reconstruction Project (STP-X-5375(010) 100044-B), Plaistow and Kingston, New Hampshire*. Report submitted to Vanasse Hangen Brustlin, Inc. Bedford, NH.

2012 *Phase IA Archaeological Sensitivity Assessment and Phase IB Intensive Archaeological Investigation: Mount Washington Regional Airport Whitefield (Coos County), New Hampshire*. Report submitted to Faye, Spofford & Thorndike, Bedford, NH.

2013 *Phase I Reconnaissance Survey and Phase II Determination of Eligibility for Euroamerican Archaeological Resources Maine Power Reliability Project Segment 15A (West Gardiner - Monmouth): Benjamin True Farmstead (ME 246-006) Litchfield, Kennebec County, Maine.* Report submitted to TRC Solutions, Inc., Augusta, ME.

2012 *Results of Combined Phase IB Intensive Archaeological Investigation and Phase II Determination of Eligibility Proposed Sewer Interceptor through Christy Property Manchester (Hillsborough County), New Hampshire, Lougee Sawmill (27 HB-396)*. Report submitted to Hoyle, Tanner & Associates, Inc., Manchester, NH.

2010 *Phase II Intensive Level Survey for Euroamerican Archaeological Resources Maine Power Reliability Project Segment 18 (Pownal-North Yarmouth). Colonel Henry Warren Homestead (ME 353-004) Pownal, Cumberland County, Maine.* Report submitted to the Maine Historic Preservation Commission, Augusta, Maine. MHPC Rec. 2160-08.

2010 *Cultural Resources Investigations: Historic Archaeological Survey Results of Phase 0 and Phase I Reconnaissance Survey and Phase II Intensive Level Survey. Bangor Hydro Electric Company, Downeast Reliability Project*. Report submitted to the Maine Historic Preservation Commission, Augusta, Maine.

Public Archaeology Laboratory

STEPHEN A. OLAUSEN

EXECUTIVE DIRECTOR/SENIOR ARCHITECTURAL HISTORIAN

EDUCATION

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

BA, Roanoke College, History, 1984

EXPERIENCE

Years with PAL: 17
Years Experience: 27

CERTIFICATION

Basic First Aid/BBP - American Heart Association

Adult CPR/AED - American Heart Association

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

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

PROFESSIONAL DEVELOPMENT

Section 106: Working with the Revised Regulations

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

Federal Energy Regulatory Commission Section 106 Compliance Seminar

MEMBERSHIPS

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

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

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

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

Over the last 12 years, Olausen has managed numerous wind energy projects in Massachusetts and Maine. The work has included historic property identification and evaluation surveys, effects assessments, consultation under Section 106, and the preparation of mitigation documentation. The projects have ranged from large utility scale developments like Cape Wind in Nantucket Sound to single turbine projects. Projects conducted in Maine have included Stetson Ridge, Stetson II, Oakfield, Highland, Rollins, Bowers Mountain, Bull Hill, and Record Hill. Through this work, Olausen has acquired a solid understanding of the Maine site laws governing major wind developments and the particular requirements of the Maine Historic Preservation Commission for the review of such projects.

Public Archaeology Laboratory

QUINN R. STUART
ARCHITECTURAL HISTORIAN

EDUCATION

MA, Historic Preservation, Savannah College of Art and Design, 2009

BS, Historic Preservation, Roger Williams University, 2006

EXPERIENCE

Years with PAL: 5
Years Experience: 8

CERTIFICATION

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

SPECTRA Contractor Safety Training

Massachusetts Bay Transportation Authority, Right-of-Way Training

Massachusetts Coastal Railroad Roadway Worker Protection Training

Transportation Worker Identification Credential

Basic First Aid/CPR - American Red Cross/Heart Association

PROFESSIONAL DEVELOPMENT:

Rhode Island Statewide Historic Preservation Conference, Presenter, 2008

Association for Gravestone Studies, Western MA Chapter Annual Conference, Speaker, 2011

Certifications in Microsoft Access, SQL, and Adobe Photoshop CS2

Ms. Stuart has been professionally engaged in historic preservation and related fields for seven years. Prior to joining PAL in 2007, Ms. Stuart worked in Providence, RI as a preservation carpenter. Ms. Stuart has also worked in Savannah, GA as a masonry preservationist and in Anchorage, AK conducting a reconnaissance level survey for a Federal Highway Department project.

Ms. Stuart has a diverse educational background in architectural history, historic preservation, preservation carpentry, and masonry conservation. She received her M.A. in Historic Preservation from Savannah College of Art and Design in 2009 and graduated magna cum laude from Roger Williams University with a B.S. in Historic Preservation and Foreign Languages in 2006. For her graduate coursework, Ms. Stuart completed a thesis on a study of the influences on gravestone art in central Massachusetts and a conditions assessment and rehabilitation plan for an Army barrack in Tybee Island, GA. She is fully qualified under the Secretary of Interior's Professional Qualification Standards (36 CFR Part 61 Appendix A).

Ms. Stuart has worked throughout New England, Alaska, Georgia, and Puerto Rico for a variety of government and private clients, including the National Trust for Historic Preservation, the National Park Service, Federal Highway Department, U.S. Army Corps of Engineers, Massachusetts Bay Transportation Authority, Rhode Island Department of Transportation, Alaska Department of Transportation, Spectra Energy Transmission, LLC, and Stantec.

Ms. Stuart has experience with projects requiring review under Section 106, the National Environmental Policy Act, and Section 4(f) of the Department of Transportation Act. She also has experience with projects reviewed under the Expedited Permitting of Grid-Scale Wind Energy Developments, a statue enacted by the State of Maine Legislature, and the Maine Land Use Planning Commission.

Since joining PAL, Ms. Stuart has completed numerous reconnaissance level surveys and effects assessments for utility-scale wind energy projects in Maine, including Stetson Wind I and II in Washington County, Rollins Wind, Bowers Wind and Passadumkeag Wind in Penobscot County, Record Hill Wind in Oxford County, Oakfield Wind in Aroostook County, and Bingham Wind in Somerset County, as well as Block Island Wind in Rhode Island. She has also performed intensive level surveys and Maine State-level Archival documentations for various properties in Maine including farmsteads, railroad-related structures, and agricultural districts.

Ms. Stuart is a member of the National Trust for Historic Preservation, Vernacular Architecture Forum, and the Association for Gravestone Studies.

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Albert Frick, SS, SE
James Logan, SS, SE
Matthew Logan, SE
Brady Frick, SE
Bryan Jordan, SE
William O'Connor, SE
Noel Dunn, Office Manager

Albert Frick

EDUCATION: Master of Science 1978
University of Maine at Orono, Orono, Maine
Program: Soil Science (Resource Utilization)

Bachelor of Science 1972
Bates College, Lewiston, Maine
Program: Geology

WORK EXPERIENCE:

Apr.1985-Present **Consulting Soil Scientist. Albert Frick Associates, Inc.**
Gorham, Maine

President and Senior Consulting Soil Scientist of small consulting firm which produces high intensity soil maps, subsurface wastewater disposal system designs, environmental studies, and subdivision planning with regard to soil utilization.

Oct.1978-Apr.1985 **Soil Scientist. Division of Health Engineering, State of Maine**

Responsible for administering the Site Evaluation program for the State of Maine. Duties included licensing of Site Evaluators, review of soils, and administration of the State of Maine Subsurface Wastewater Disposal Rules.

May 1978-Oct.1978 **Consulting Soil Scientist. Self-employed**

Site evaluations, land use consultation, site selection.

Jan.1976-May 1978 **Consulting Soil Scientist. University of Maine, Orono, Maine**

Examined soil potential for land use planning in communities of Maine to develop soil potential ratings for Maine soils that are utilized as a planning tool to guide towns in land use decisions.

Research Assistant. University of Maine, Orono, Maine

Examined land application of potato wastes. Investigated nutrient movement through soil and associated ground water quality in adjacent monitoring wells. Nutrient budgets were calculated and acceptable loading rates were identified.

Jan.1974-Jan.1976 **Engineer Technician. Thomas Griffin Associates**

Duties included assisting in selection and design of sanitary landfill sites, report preparation, drafting, surveying, field investigations.

June 1971-Sept.1971 **Assistant Geologist. National Science Foundation**

Member of a research team examining pollution of Lake Lillinonah, Milford, Ct. Investigated stream turbidity and sediment loading, nutrient levels in recharge water and eutrophication process.

June 1970-Sept.1970 **Assistant Geologist. Wesleyan University, Middletown, Ct.**

Investigation of aeromagnetic anomalies in western Connecticut. Correlated strike, dip, overburden, and concentration of magnetite veins with computer modeling.

PUBLICATIONS: **Site Evaluation of Subsurface Wastewater Disposal in Maine** (August 1983)
Maine Department of Human Services, Division of Health Engineering.

Soil Potential for Land Use Planning at a Local Level in Maine (December 1977)
Bulletin 747, University of Maine.

Life Expectancy, Systems Design and Land Use of Subsurface Wastewater Disposal Systems in Maine (December 1984)
On-site Sewage Treatment- the Fourth National Symposium on Individual and Small Community Sewer Systems.

Maine Environmental Planning Guide (1990)
Cumberland County Soil and Water Conservation District
Chairman of the Soil Advisory Committee which developed the Soil Information Chapter 2 of the Manual.

AWARDS: **Fred Griffee Award 1997**
Outstanding graduate student in Life Science and Agriculture College, University of Maine at Orono

PROFESSIONAL AFFILIATIONS AN ORGANIZATIONS:

Maine Certified Soil Scientist #66
Maine Licensed Site Evaluator #163
Maine Association of Professional Soil Scientists
Maine Association of Site Evaluators (Charter Director) (Past President)
National Society of Consulting Soil Scientists (Charter Member)
Maine Association of Landscape Architects (Associate Member)
Maine Board Certification of Geologists and Soil Scientists (Consulting Soil Scientist Board Member) Governor McKernon appointee

CARL W. THUNBERG, P.E.
SENIOR GEOTECHNICAL ENGINEER

PROFESSIONAL EXPERIENCE
Mr. Thunberg is a senior geotechnical engineer for Terracon Consultants. He has broad experience in geotechnical analysis, design, and construction. His areas of expertise include deep and shallow foundation design for bridges, roadways, buildings, dams, slopes, retaining walls, landfills, and planning and execution of large scale subsurface exploration programs on land and over water. Mr. Thunberg is experienced with both Load and Resistance Factor Design (LRFD) and Allowable Stress Design (ASD) methods. Mr. Thunberg has a reputation for professionalism, quality, practicality, teamwork, and an ability to manage projects to successful technical and financial outcomes.

Mr. Thunberg has extensive knowledge and competency of soil mechanics and geotechnical analytical methods by hand and computer. He has demonstrated experience in planning and executing multiple large-scale subsurface exploration programs for energy, transportation and environmental projects alike.

PROJECT EXPERIENCE

ENERGY

Number Nine Mountain Wind – Aroostook County, Maine
Mr. Thunberg is currently the project manager for geotechnical investigations for this 135 wind turbine generator wind farm, including 75 miles of access roads, an electrical substation, and transmission line structures.. Our services have included test borings with rock core at each wind turbine generator, soil borings along roadways, soil and rock testing, falling weight deflectometer testing, surface seisimic testing, electrical resistivity testing, and geotechnical analysis for foundations, roadways, and earthwork. Mr. Thunberg is in constant communication with the Client, and the design team due to the complex interaction of multiple disciplines, and to assure compliance with resource agency permit requirements.

Public Service Company of New Hampshire (PSNH) U-199 Transmission Line Stabilization -Littleton to Sugar Hill, New Hampshire
Mr. Thunberg is the project manager for this ongoing transmission line stabilization project. Approximately 6,760 feet of the existing transmission line, including 16 towers, has become unstable due to its construction over alluvial river-bed deposits, and migration of the river bed. Our services include test borings and electrical resistivity testing, with geotechnical recommendations for replacement tower foundations.

PSNH Monadnock Substation Expansion - Troy, New Hampshire
Mr. Thunberg managed the subsurface exploration program and performed geotechnical analysis for several site development concepts under consideration for this substation expansion program. Our services included borings on two parcels, electrical resistivity testing, and geotechnical recommendations for retaining walls, rock excavation, erosion control, and earthwork construction.

Education
Bachelor of Science, Civil Engineering, University of New Hampshire, 1996

Bachelor of Science, Hydrology, University of New Hampshire, 1985

Registrations
Professional Engineer: NH 9402, MA 50956, ME 13482, VT 100817 NY 93626

Certifications
40-Hour HAZWOPER

NETTCP Driven Pile Inspector

U.S. DOT and Federal Highway Administration LRFD for Highway Bridge Substructures and Retaining Walls

ASCE Finite Elements in Geotechnical Engineering

University of Florida Analysis and Design of Deep Foundations

New Hampshire Society of Professional Engineers – Vice President (2014)r

Work History
Terracon Consultants, Inc., . Geotechnical Engineer, 2013-Present

John Turner Consulting, Inc. Geotechnical Department Manager, 2012-2013

Nobis Engineering, Inc., Senior Project Manager, 1999-2011

Geotechnical Services, Inc., Project Manager, 1996-1999

Heynen Teale Engineers, Staff and Field Engineer, 1989-1996

Solar Array – Freetown, Massachusetts

Mr. Thunberg designed and implemented a solar pile foundation load test for two 5MW solar arrays in Freetown, Massachusetts. The solar arrays were designed to be supported on W8x10 piles driven to specified design depths. The fieldwork included load tests on three test piles. Each test pile included four reaction piles. Pile load tests were performed in tension, compression, and cyclic lateral load testing. Mr. Thunberg reviewed Contractor submittals, and interpreted the results of the pile load tests for uplift, compression, and lateral load capacity for the production piles.

TRANSPORTATION

Manchester Airport Access Road – Bedford, Litchfield, Londonderry, and Merrimack, New Hampshire

Mr. Thunberg served as project manager on two miles of new limited access highway, two major interchanges, and nine bridges. Major bridges included a cut-and-cover bridge carrying the existing F.E. Everett Turnpike over the Access Road, six-span bridge carrying the execution of the filed exploration program of over 500 soil borings, including 15,000 feet of soil borings and 2,000 feet of rock coring.

Queen City Bridge over Interstate 293 – Manchester, New Hampshire

Mr. Thunberg served as project manager in charge of overseeing subsurface explorations and directed a geotechnical evaluation for this bridge widening project. Prepared recommendations for the type and capacity of driven H-pile foundations for the new bridge piers and prepared recommendations for vibration monitoring. During construction, supervised field technical personnel documenting pile driving and vibration monitoring activities.

Route 121 Reconstruction – Rockingham and Grafton, Vermont

Mr. Thunberg was the project manager coordinating a subsurface exploration program for this three-mile section of roadway with steep side slopes. Performed slope stability analyses and pavement designs. He assisted the prime contractor with retaining wall designs, earthwork recommendations, and erosion control.

Constitution Avenue – Concord, New Hampshire

Mr. Thunberg supervised the execution of a subsurface exploration and geotechnical investigation for a 1-mile length of new roadway in downtown Concord, New Hampshire. The project was complicated by environmental concerns in the project corridor and the need to widen a bridge underpass without impacting the bridge foundations and abutments. Mr. Thunberg also designed a soil-nailed retaining wall to widen the bridge opening.

BUILDINGS

Capital Commons – Concord, New Hampshire

Mr. Thunberg was responsible for performing subsurface explorations and foundation design for the six-story building downtown. The project involved undermining the adjacent Endicott Hotel building by one story below grade requiring jet grouting for underpinning. Braced excavations were required around the perimeter of the site on three sides in order to construct the below grade floors. Performed construction observation during construction to inspect subgrades and monitor underpinning operations.

Concord Hospital – Concord, New Hampshire

Mr. Thunberg was responsible for managing several geotechnical investigations on the campus of Concord Hospital in Concord, New Hampshire. Projects have included three building additions, two parking decks, and one parking garage. Each of these projects required subsurface explorations, geotechnical analysis, and construction phase oversight.

Portland Sports Complex – Portland, Maine

Mr. Thunberg performed geotechnical design services for a new indoor soccer facility to be constructed over soft, normally consolidated clay. Using a combination of lightweight fill and geofoam, Mr. Thunberg designed a foundation preparation plan with minimal net loading and allowed for spread footing construction instead of deep driven piles, resulting in considerable savings to the owner.

Brett C. Hart, P.E.

Senior Project Manager
Engineering, Survey, & Utilities Division

Brett Hart joined the James W. Sewall Company in 1999 offering a strong background in site design and surveying. Mr. Hart brings to Sewall 14 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

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, Linoln, 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 Mainde Department of Environmental protection (MaineDEP) permitting submittals. Review required by MaineDEP and Land Use Planning Commission (LUPC).

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.

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.

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.

James W. Murray, PLS

Project Surveyor

Formerly a technician at Sewall, James Murray returned to the firm in 2002 as a Project Surveyor with over 25 years combined experience. Mr. Murray is experienced in all aspects of land surveying including cost estimation, scheduling and supervising field operations, boundary analysis, deed research and analysis, and plat preparation. He is also involved in the stages of GPS operations including project planning, data collection and post processing. Past projects have included numerous standard boundary surveys of parcels up to 7,500 acres, layout of telephone easements throughout Maine, and design and layout of subdivisions from 20 to 50 acres in size.

EDUCATION

Surveying core curriculum coursework, University of Maine, Orono
Coursework in Architectural Engineering, Greenvillle Technical College, Greenville, SC
Graduate in Architectural Drafting, Seible School of Drafting, Denver, CO

CERTIFICATION

Registered Professional Land Surveyor #2296 (ME)

RELEVANT EXPERIENCE

2002 - Present, James W. Sewall Company

Project Surveyor

Champlain Wind, LLC – Carroll Plantation, ME. Project Manager for a 10,000 acre ALTA survey which included preparation of documents related to several property transactions and intersection surveys.

Passadumkeag Wind Project, Grand Falls TWP, ME. Project Manager for a 41,000 acre ALTA survey which included preparation of documents related to several property transactions.

Record Hill Wind, LLC, Roxury, ME. Assisted Project Manager for a new transmission corridor and substation. Project included boundary work, preparing plans for easements, legal descriptions and construction staking.

Stetson Wind Project, Danforth, ME. Perform intersection surveys and right of way investigations for transportation route.

South Central Connecticut Regional Water Authority, Connecticut. Provided oversight of GPS ground control for five town-wide/multiple town photogrammetric mapping projects for RWA.

Beverly, Massachusetts. Directed GPS ground control for photogrammetric surveys for Town-wide mapping project.

Methuen, Massachusetts. Directed GPS ground control for photogrammetric surveys for Town-wide mapping project.

Haverhill, Massachusetts. Directed GPS ground control for photogrammetric surveys for Town-wide mapping project.

Mack Point, Searsport, ME, Boundary and Planimetric Survey (160 acres). As project surveyor, completed a comprehensive boundary survey of the entire Mack Point terminal in Searsport, ME; the first to compile the numerous easements, leases, and ownership interests that affect the many coastal parcels that comprise this port facility. Prepared a land title survey showing the current ownership and site conditions.

Moose Island, Stonington, ME., Coastal Boundary Survey. As project surveyor, conducted a boundary survey of a 15-acre portion of Moose Island in Stonington, ME. The survey included location of the high water line and analysis of local elevations and flood zones in preparation for the subdivision of the parcel.

Hinsdale, NH., Hydrographic Survey of Vernon Dam (15 acres). As project surveyor, conducted a hydrographic survey of a portion of the Connecticut River below the Vernon Dam in Hinsdale, New Hampshire. Sewall utilized a Trimble ProXR mapping-grade GPS receiver and Horizon digital depth sounder to determine bottom elevation in the river. Sewall produced a contour plan of the river bottom to be used in erosion studies.

Newry, ME., Topographic & Hydrographic Survey of Barkers Brook (6 acres). As project surveyor, conducted a topographic and hydrographic survey of a portion of Barker Brook. Sewall produced a contour plan of the river bottom and upland areas extending 50' either side of the brook. This information was used by the client for wetland and stream restoration design.

Burnham, ME., Topographic and Hydrographic Survey of Burnham Dam (15 acres). As project surveyor, conducted a topographic and hydrographic survey of the Burnham Dam and a portion of the Sebasticook River, downriver of the dam, for design of a fishway.

1998 - 2002, Murray Land Surveying Services

Owner and Professional Land Surveyor

1996 - 1998, Civil Engineering Services

Project Manager/Office Manager

1989 – 1996, Huntley Surveying and Engineering

Project Manager/Office Manager

1987 – 1989, Collins Surveying

Crew Chief/CAD Technician

John H. Allen, PLS

Senior Project Manager / Survey Supervisor

John Allen joined James W. Sewall Company in 2008. He has more than 25 years' experience in mapping, drafting and land surveying. His duties have included supervision of field crews and survey department, project management and business development. Mr. Allen has significant experience working with town and state regulating agencies, subdivision design, road layout, boundary work, and deed research. In addition, he is familiar with Maine State, Land Use Planning Commission and Department of Environmental Protection regulations.

EDUCATION

AS Drafting Technology, Northern Maine Vocational Technical Institute, Presque Isle, Maine
Surveying core curriculum coursework, University of Maine, Orono and Wentworth Institute of Technology, Massachusetts

CERTIFICATION

Registered Professional Land Surveyor #2311 (ME)

RELEVANT EXPERIENCE

2008 - Present, James W. Sewall Company

Senior Project Manager / Survey Supervisor

Responsible for supervision of survey field crews, project management, new equipment research, training & implementation, daily survey operations and business development.

Wind Projects

Record Hill Wind LLC, Roxbury, Maine. Project Manager for a new transmission corridor and substation. Project included a topographic survey of the entire site along with boundary work, preparing plans for easements and construction staking.

Champlain Wind, LLC – Carroll Plantation, ME. Assist Project Manager with review and fieldwork associated with a 10,000 acre ALTA survey and intersection surveys.

Passadumkeag Wind Project, Grand Falls TWP, ME. Perform topographic survey of approximately 60 acres of obscured area, perform a centerline verification survey of 8 miles of proposed roadway and assist project manager with a 40,000 acre ALTA survey.

Record Hill Wind, LLC, Roxury, ME. Project Manager for a new transmission corridor and substation. Project included a topographic survey of the entire site along with boundary work, preparing plans for easements, legal descriptions and construction staking.

Stetson Wind Project, Danforth, ME. Perform intersection surveys and right of way investigations for transportation route.

Hancock Wind Project, T22MD, ME. Perform GPS control work and topographic surveys to verify elevations of turbine pad sites.

Topographic and Transportation Projects

Maine Army National Guard, Bangor, Maine. Project manager for a 40 acre topographic survey of the Maine Army National Guard Facility on Hayes Avenue in Bangor, Maine.

RSU #34, Old Town, Maine. Project Manager for two projects, a 15 acre topographic and utility survey and a 6 acre topographic and utility survey, at the Old Town High School for a new science wing and athletic facilities.

MeDOT. Responsible for establishing ground control to meet National Map Accuracy Standards for site in Machias, Maine to produce 50-scale planimetric maps with 1-foot contour intervals.

City of Bangor, Maine. Responsible for client and project management duties as well as performing field work and document preparation for collection of 2,500 utility structures (sewer manholes, catch basins, fire hydrants, water valves) using GPS RTK survey and traditional surveying methods.

1991 - 2008, AMES A/E

Survey Supervisor

Responsible for supervision of survey field crews, project management, new equipment research, training & implementation, daily survey operations and business development.

TERRENCE J. DEWAN, FASLA
Principal

Terry DeWan has over 40 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	Terrence J. DeWan & Associates 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
American Society of Landscape Architects
Boston Society of Landscape Architects
American Planning Association
Maine Association of Planners
Council of Landscape Architects Registration Boards: Board of Directors
Landscape Architecture Accreditation Board: Roster of Volunteer Evaluators
Congress for the New Urbanism
Portland Public Arts Committee
Royal River Conservation Trust
Board Member.
Instructor, National Council of State Garden Clubs
Instructor, Maine SPO Smart Growth Institute

SELECTED PROJECT EXPERIENCE

VISUAL IMPACT ASSESSMENT
SCENIC INVENTORIES

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.
Visual Impact Assessment for 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 (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. Visual Impact Assessment for a 38 turbine wind project.

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

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 Coalition.

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 submitted to Maine DEP for Downeast LNG, Inc.

Maine IF&W: Mere Point Boat Launch, Brunswick, Maine. VIA and mitigation strategy for a boat launch proposed by Maine Department of Inland Fisheries and Wildlife.

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.

Central Maine Power Co. VIAs for multiple transmission lines and substations throughout southern and central Maine.

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.

MBNA: International Conference Center, Northport, Maine. VIA and mitigation plan for proposed mountaintop facility.

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.

Visual Mitigation Plan, Hinckley Park Substation. Central Maine Power Company, South Portland.

Conway Route 16 Bypass Project. Visual Assessment, NH Dept. of Transportation, Conway/North Conway, NH

Kennebec-Chaudière Heritage Corridor.
Interpretative and facilities master plan for heritage trail between Popham Beach and Solon, Maine. MDOT

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

Route One Improvements Plan, Lincolnville.
Maine DOT. Incorporating road improvements, bicycles, and pedestrian facilities along a highly scenic roadway.

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

PEER REVIEWS

Calais LNG, Calais, ME. Peer review of VIA. Prepared visual assessment of potential impact on St Croix Island International Historic Site.

Argonne National Laboratory. Peer review for two publications: *Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands* and *NPS Visual Impact Assessment Guidance Document.*

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

SELECTED PUBLICATIONS

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

DeWan, Terrence J. **Royal River Corridor Study.** Town of Yarmouth, Maine. With Stantec. 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 Naetzker. **Scenic Inventory, Mainland Sites of Penobscot Bay.** ME SPO. 1990.

SELECTED PRESENTATIONS

The Maine Wind Energy Act, Visual Assessment Procedures for Grid Scale Wind Projects, National Assoc. of Environmental Professional Meeting, Portland, OR 2012

Social Acceptance of Wind Energy- Addressing Visual Impact in Skeptical Communities. American Society of Landscape Architects Annual Meeting. San Diego, CA. 2011.

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.

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 Assess Techniques. SUNY, Syracuse, NY 1992.

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 NP, North Devon, England

Maine Association of Planners Awards
- A Guide to Livable Design
- Spring Point Shoreway
- TV Mini-Series for Planning Boards
- Portland Waterfront Walk
- Portland Shoreway Access Plan
- Falmouth Route One Plan
- Scenic Inventory of Penobscot Bay
- Brunswick Revitalization Plan

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, CLARB, ASLA
Associate, Landscape Architect

Amy's twenty two 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
New Hampshire Licensed Landscape Architect #123

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

Todd M. Gabe, Ph.D.
Consulting Resume and Biography

Contact Information:
Todd M. Gabe, Ph.D.
todd.gabe@yahoo.com

Areas of Expertise:
Economic impact analysis, state and local economic development, regional economic data analysis, human capital and the knowledge economy

Professional Experience:
Economic Consulting

- ⇨ Occasional consulting work on a wide range of topics.

Professor, School of Economics
University of Maine, September 2010—present

Education:
Ph.D., 1999
The Ohio State University, Columbus, Ohio
Department of Agricultural, Environmental, and Development Economics

M.S., 1994
University of Minnesota, Twin Cities, Minnesota
Department of Applied Economics

B.A. (*Cum Laude*), 1992
Furman University, Greenville, South Carolina
Majors: Economics and Asian Studies

Selected Articles and Technical Reports:
Gabe, Todd and Nicholas Lisac, "A Note on the Effects of Popular Music Concerts on Hospitality Sales: The Case of Waterfront Concerts in Bangor, Maine." *Review of Regional Studies*, Vol. 44, No. 1, 2014.

Gabe, Todd and Richard Florida, "Effects of the Housing Boom and Bust on U.S. Metro Employment." *Growth and Change*, Vol. 44, No. 4, 2013.

Gabe, Todd, Amy Hudnor and Luke Finnemore, "Economic Impact and Resident Valuation of the Boothbay Region Land Trust." School of Economics, University of Maine, Staff Paper 604, February 2013.

Gabe, Todd M. and Jaison R. Abel, "Specialized Knowledge and the Geographic Concentration of Occupations." *Journal of Economic Geography*, Vol. 12, No. 2, 2012.

Gabe, Todd M., "The Value of Creativity," in a David Andersson, Ake Andersson and Charlotta Mellander (eds), *Handbook of Creative Cities*. Edward Elgar, 2011.

Selected Articles and Technical Reports, continued:

Gabe, Todd, James McConnon and Richard Kersbergen, "Economic Contribution of Maine's Food Industry." *Maine Policy Review*, Vol. 20, No. 1, 2011.

Gabe, Todd M., "Knowledge and Earnings." *Journal of Regional Science*, Vol. 49, No. 3, 2009.

Abel, Jaison and Todd Gabe, "Human Capital and Economic Activity in Urban America." Federal Reserve Bank of New York, Staff Report 332. July 2008.

Gabe, Todd, Colleen Lynch and James McConnon, "Likelihood of Cruise Ship Passenger Return to a Visited Port: The Case of Bar Harbor, Maine." *Journal of Travel Research*, Vol. 44, No. 3, 2006.

Gabe, Todd, Jonathan Rubin, Thomas Allen and Catherine Reilly, "Fiscal Effects of a One-Percent Property Tax Cap on Maine Municipalities and the State Government." Department of Resource Economics and Policy, University of Maine, Staff Paper 541, September 2004.

Allen, Thomas G. and Todd M. Gabe, "The Economic Impact of Biotechnology in New England." Department of Resource Economics and Policy, University of Maine, Staff Paper 522, November 2003.

Gabe, Todd M. and David S. Kraybill, "The Effect of State Economic Development Incentives on Employment Growth of Establishments." *Journal of Regional Science*, Vol. 42, No. 4, 2002.

Gabe, Todd M. "The Effects of Business Assistance Programs on Employment Growth in Maine Establishments." Department of Resource Economics and Policy, University of Maine, Staff Paper 500, July 2000.

Short Biography:

Todd Gabe is an expert in the analysis of occupations and industries, with a focus on the importance of human capital and the knowledge and creative economies to regions large and small. Gabe is a Professor of Economics at the University of Maine, where he teaches and conducts research on a broad range of topics related to state and local economic development. Gabe has graduate degrees from The Ohio State University and the University of Minnesota, and he went to college at Furman University.

Dr. Gabe has published articles in the *Journal of Economic Geography*, *Journal of Regional Science*, *Regional Studies* and *Urban Studies*, among other outlets, and has completed dozens of technical reports and economic impact studies. Gabe was awarded the University of Maine Presidential Public Service Award in 2004; and the College of Natural Sciences, Forestry and Agriculture Outstanding Public Service Award in 2005.

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P. Andrew Hamilton

Municipal Law & Finance
Environmental & Land Use
Economic Development
Legislative & Government Relations

Shareholder
Chair, Economic Development, Environmental & Land Use, and Municipal Law & Finance Practice Groups

Andy has more than 30 years experience in general environmental counseling and regulatory compliance, natural resource permitting, and land use permitting. He has served for more than 30 years as general counsel and has provided environmental law services on special projects to Maine municipalities.

Andy is the Chair of the Environmental & Land Use and Municipal Law & Finance practice groups at Eaton Peabody. His practice concentrates on environmental compliance counseling, and representing clients in proceedings under state and federal environmental laws. He has extensive experience in hazardous substance and waste laws, and is the author of the Maine law text for the treatise on Brownfields Redevelopment published by Matthew Bender.

In addition, Andy maintains an extensive utilities practice, which includes serving as general counsel to a number of public utility districts.

Bar Admissions

State of Maine
U.S. District Court, District of Maine

Education

University of Maine School of Law, J.D., 1984
Wesleyan University, B.A., 1981

Memberships & Affiliations

Natural Resources and Environmental Law Section, Maine State Bar Association, Member
Natural Resources and Environmental Law Section, American Bar Association, Member
Bangor Chamber of Commerce, Immediate Past Chair and Board Member
Katahdin Area Council, Boy Scouts of America, Past President
John Bapst Memorial High School, Past Chairman of the Board of Trustees
Bangor YMCA, Past President
United Way of Eastern Maine, Board Member
Unity College, Board Member

Honors

Named Best Lawyers 2013 Bangor Land Use & Zoning Law Lawyer of the Year
Top ranked Chambers USA, Environmental Law Listed in The Best Lawyers in America, Land Use & Zoning

Jonathan A. Pottle

Environmental & Land Use
Municipal Law & Finance
Economic Development
Natural Resources & Timberlands
Litigation / Administrative Proceedings

Shareholder

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jpottle@eatonpeabody.com

Jon advises clients in the areas of administrative law, municipal law and finance, land use and environmental law, renewable energy, telecommunications, timberlands, natural resources law, economic development, and litigation involving permitting, contract, tort, and property disputes. Jon represents clients at all levels of administrative and court proceedings, including before local municipal boards, Maine administrative agencies, Maine District Court, Maine Superior Court, Maine Business & Consumer Court, Maine Law Court, United States District Court for the District of Maine, and the United States Court of Appeals for the First Circuit.

Jon received a law degree and a masters degree in environmental Law from Vermont Law School, as well as a bachelor's degree in Forest Engineering from the University of New Brunswick, Canada. He is also a recent graduate of the Bangor Region Leadership Institute.

Jon lives in Bangor, and serves on several community and regional boards and committees focused on the health of Maine people and its natural resources. Jon enjoys hockey, as well as outdoor recreation activities such as canoeing, skiing, hiking and mountaineering.

Bar Admissions

State of Maine
United States District Court, District of Maine
United States Court of Appeals, First Circuit

Education

Vermont Law School, J.D., cum laude, 2008
Master of Studies in Environmental Law
University of New Brunswick, B.S., Forest Engineering, 2003

Memberships & Affiliations

Maine State Bar Association
Penobscot County Bar Association
Maine Tree Foundation, Board of Directors
Bangor Nursing and Rehabilitation Center, Board of Directors
American Heart Association, Northern Maine Volunteer Leadership Council
Bangor Trails Committee, Member

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Karen A. Huber

Real Estate
Natual Resources & Timberlands

Shareholder
Chair, Real Estate and Natural Resources & Timberlands Practice Groups

Karen has a general real estate practice, which includes clients in the title insurance, banking and timberland industries, as well as individuals and corporations. She has extensive experience with complex commercial and timberland transactions, including underwriting commercial and timberland titles. She represents clients in the acquisition, sale, protection, and management of large tracts of land throughout the State and is familiar with issues unique to Maine's timberland owners.

Bar Admissions

State of Maine
U.S. District Court, District of Maine

Education

University of Maine School of Law, J.D., 1984
University of Maine, B.A., 1981

Memberships & Affiliations

Penobscot County Bar Association
Real Estate Section, Maine State Bar Association
Habitat for Humanity
Susan G. Komen for the Cure

Honors

Top Ranked by Chambers USA, Timberlands

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Timothy C. Woodcock

Environmental & Land Use
Economic Development
Cross Border Transactions
Litigation/Dispute Resolution

Shareholder

Tim has more than 30 years experience as a litigator. He has experience in a wide variety of litigation fields, including commercial litigation, governmental entity claims (42 USC § 1983), personal injury insurance claims, insurance coverage, and defense. He has represented clients before various licensing boards, including Rule 80 B and 80 C appeals, as well as the Commission on Governmental Ethics and Election Practices. Tim's practice includes appellate work before the Maine Law Court and the First Circuit Court of Appeals. He also represented clients on public policy issues before local and state government agencies and boards. He has worked extensively on regional economic development issues both within Maine and in partnership with Atlantic Canada.

Tim worked on Capitol Hill for nearly six years. He served on the personal staff of Senator William S. Cohen handling a broad spectrum of issues. He served as minority staff counsel on the Senate Select Committee on Indian Affairs and was deeply involved in the drafting and enactment of the Maine Indian Claims Settlement Act. Later he served as Staff Director of that committee during the 98th Congress. In 1987, Tim served an Associate Counsel on the Senate Iran-Contra Committee. He also served as an Assistant U.S. Attorney for nearly four years, handling all civil matters in his office and prosecuting criminal offenses including bank robberis and complex drug conspiracy cases. From 1995 to 1998, he served on the Bangor City Council, including a term as Mayor of the City of Bangor.

Bar Admissions

State of Maine
U.S. District Court, District of Maine

Education

University of Maine School of Law, J.D., 1977
Bowdoin College, A.B. 1974

Memberships & Affiliations

Maine Bar Association
Maine Bar Foundation
Community Health & Counseling Services, Immediate Past President, current Board member

The Sells Law Firm, LLC

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Portland, Maine 04101-3431

Tele: (207) 523-3477
Fax: (207) 773-8597

Re: Curriculum vitae

SCOTT L. SELLS, Esq.
BSc., MBA, JD

Scott L. Sells is an environmental and energy attorney emphasizing energy project and technology development and related litigation, permitting, real estate and transactional matters. His twenty five year practice has focused on the energy industry, particularly in the area of renewable energy development and electric transmission.

Scott is a principal in the firm and his practice areas of emphasis include:

- Energy project development;
- Environmental permitting;
- Environmental regulatory matters;
- Real estate and mineral title matters;
- Electric utility and transmission matters;
- Energy and environmental litigation, with appearances in state and federal courts and regulatory agencies.

His energy project development experience includes participating in the successful development of a 660 MW, 65 mile sub-sea electric regional transmission system interconnecting New York and New Jersey (Neptune RTS) where his primary responsibilities included oversight of a environmental permitting effort involving several states (including Maine) and Canada.

He is a former corporate and energy law partner in the Portland, Maine law firm of Curtis Thaxter Stevens Broder & Micoleau LLC, where his practice emphasized environmental regulatory, electric transmission and utility matters. He has also served in various executive management positions including General Counsel and Secretary to a publicly traded, diversified utility (Maine Public Service) with regulated and unregulated assets and subsidiaries in the U.S. and Canada. During this representation, he oversaw the company's reorganization and re-listing on the AMEX. In addition, he was involved in the utility's regulatory and permitting efforts regarding Maine's first wind farm (Mars Hill). He also formerly served as an Assistant General Counsel to Duke Energy Corporation and its Field Services midstream group where his responsibilities included regulatory, transactional and litigation oversight.

Prior to his position with Duke Energy Corporation, he was a partner at the Denver, Colorado firm of Welborn, Sullivan, Meck & Tooley, LLC where he emphasized domestic and international environmental, energy and natural resources law. From 1997-1999, he also served as an adjunct lecturer of Environmental Law at the University of Denver College of Law. The

1996 edition of *Legal Opinion Letters Formbook* published by John Wiley & Sons, Inc. included *Chapter 13A, Environmental Considerations in Legal Opinions*, which he authored. His litigation experience has included *Gerrity Oil & Gas Corp. v. Magness,* No. 96SC215 (Colo. 1997), as well as civil trial appearances and administrative litigation.

Scott has appeared before the Federal Regulatory Energy Commission, Maine Public Utility Commission and federal and state environmental protection agencies. He is licensed in the states of Maine and Colorado, and in federal courts including the U.S. Tenth Circuit Court of Appeals and the U.S. District Courts for the Districts of Colorado and Maine.

Scott received a Juris Doctorate degree and a Master's in Business Administration degree from the University of Denver in Denver Colorado in 1990 where he was also an American Jurisprudence Award recipient and an Editor at the *University of Denver Journal of International Law and Policy*. Prior to entering graduate and law school, Scott received a Bachelor of Science degree in geology, with an emphasis in geophysics from the University of Rhode Island in 1980 and enjoyed a successful career as an exploration geophysicist.

Scott is a member of the Energy Bar Association, American Bar Association, Maine and Colorado State Bar Associations.

- Portland, Maine 2005-present: Principal; The Sells Law Firm, LLC
- Portland, Maine 2001-2005: Partner; Curtis, Thaxter, Stevens, Broder & Micoleau, LLC
- Denver, Colorado 1998-2000: Assistant General Counsel; Duke Energy Corporation
- Denver, Colorado 1994-1998: Partner, Welborn, Sullivan; Meck & Tooley, P.C.
- Denver, Colorado 1992-1993: Associate; John Faught & Associates, P.C.
- Denver, Colorado 1991: Assistant Attorney General; State of Colorado