Section 4
Technical Capacity

1.0 PRIOR EXPERIENCE

The project team assembled to complete the Maine GenLead Project has significant experience in linear developments, including electric transmission lines. The project team for development of the project consists of TRC Solutions (electrical engineering design and prehistoric archaeological resources) Stantec Consulting (natural resource assessments and permitting); SGC Engineering (construction access assessment); Terry J. DeWan and Associates (visual impact analysis); Independent Archeological Consulting (historic archaeological resources); Public Archeology Lab (historic architectural resources); and Verrill Dana (legal counsel). Each consultant was chosen because of their experience in their respective disciplines.

2.0 PERSONNEL

Resumes for key staff from Maine GenLead and the project team are included in Appendix 4-1.

Appendix 4-1

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The First Wind Executive Team

Paul J. Gaynor

President,
Chief Executive Officer

Executive Summary

Paul J. Gaynor is responsible for the strategic direction and day-to-day management of First Wind projects in North America.

Career Highlights

Mr. Gaynor has more than 20 years of experience in the energy field, encompassing leadership and finance roles in the energy, power, and pipeline sectors. In addition, he has been engaged in several landmark energy and power financings across the globe.

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

Mr. Gaynor led a comprehensive restructuring of SP and oversaw project development and asset management at SPI. He joined SP as Senior Vice President and Chief Financial Officer, where he was responsible for all financial matters, including leading the initial public offering and introducing world-class finance practices into the organization.

From 1998 to 2000, Mr. Gaynor was the Senior Vice President and Chief Financial Officer of PSG International, a pipeline development company owned by GE Capital and Bechtel Enterprises. PSG developed, financed, built, owned, and operated gas, oil, and water pipeline systems across the globe. Mr. Gaynor assisted in the establishment of the company and oversaw financial matters. He was also responsible for acquiring a 32.5% interest in a natural gas system in Mexico and subsequently sat on the board of directors. In addition, he led the fundraising process for the $3 billion TransCaspian Gas Pipeline project in Central Asia.

Before PSG, Mr. Gaynor was Vice President and Manager of Asia Pacific operations for GE Capital's Structured Finance Group (SFG). He was responsible for deal analysis, execution, and internal approvals, leading a team that evaluated over 20 power projects between 1994 and 1998. Mr. Gaynor also led the Group's $400 million investment in Paiton Energy and Quezon Power, and he received internal approval for over $1 billion of projects. He also worked at GE Capital SFG in the U.S. before moving to Asia, and he sold power plants for GE Power Systems prior to attending business school.

Education and Credentials

- Master of Business Administration, University of Chicago Graduate School of Business
- Bachelor of Science, Mechanical Engineering, Worcester Polytechnic Institute

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Kurt Adams

Executive Vice President,
Chief Development Officer

Executive Summary

Kurt Adams oversees the development of all First Wind's projects nationwide.

Career Highlights

Prior to joining First Wind, Mr. Adams was Chairman of the Maine Public Utilities Commission from 2005 to 2008, where he served as Maine's primary regulator of transmission infrastructure. While chairman, he served as a member of the New England Conference of Public Utilities Commissions, the National Association of Regulatory Utility Commissions (''NARUC''), the NARUC Electricity Committee, the NARUC Competitive Procurement Committee and as Maine's representative on the New England State Committee on Electricity.

Prior to his position with the Maine PUC, Mr. Adams was Governor John Baldacci's chief legal counsel from 2003 to 2005.

Before joining the Governor's staff, Mr. Adams was a partner in the law firm of Bernstein, Shur, Sawyer & Nelson in Portland, Maine.

Education and Credentials

- Juris Doctor from the University of Maine School of Law
- M.A. in International Affairs from The George Washington University
- B.A. Skidmore College

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Michael Alvarez

Executive Vice President,
Chief Operating Officer

Executive Summary

Michael Alvarez is responsible for First Wind operations and asset management, as well as the firm's commercial transactions and mergers and acquisitions.

Career Highlights

Mr. Alvarez joined First Wind from Edison International, where he was the Vice President of Strategic Planning. Prior to Edison, he served as Executive Vice President, Chief Financial Officer, and General Counsel at Nexant Inc., a privately held San Francisco-based company that provides software and advisory services to the global energy industry.

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

Previously, he was a senior executive at Kenetech Energy Systems Inc., successfully managing the development of electric generation projects, as well as a global operating portfolio of wind, gas, biomass, and oil-fired projects.

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

Education and Credentials

- Juris Doctor, University of Virginia
- Bachelor of Art, Economics, University of Virginia
- Trustee, California State Parks Foundation
- Member of the Bar of California, New York and Washington, D.C.

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Lori Erickson

Senior Vice President
Human Resources

Executive Summary

Lori Erickson has overall responsibility for strategic direction of human capital needs for First Wind's workforce of more than 150 employees.

Career Highlights

Ms. Erickson joined First Wind in 2008, bringing over 20 years of experience in driving the HR agenda of technology and services companies of varying size and scope. Prior to First Wind, Ms. Erickson served for 4 years as the Senior Vice President of Global Human Resources at Monster Worldwide. During her tenure with Monster her focus was on providing the company with the capabilities to attract, develop, and retain the highest caliber talent in the industry and to drive organizational effectiveness and employee engagement.

Prior to Monster Worldwide, Ms. Erickson was Senior Vice President of Human Resources for StorageNetworks where she provided strategic HR direction for the emerging company during a period of rapid organic growth. She has also held a variety of Human Resource roles at Honeywell Bull, Computervision, I-Cube/Razorfish and Shiva.

Education and Credentials

- Bachelor of Science, Computer Science and Business Management, Franklin Pierce College

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Carol J. Grant

Senior Vice President,
External Affairs

Executive Summary

Carol J. Grant is responsible for external affairs at First Wind, including public affairs, public relations and communications.

Career Highlights

Ms. Grant served as Chief of Operations for Mayor David Cicilline in the City of Providence from 2003 to 2007, leading ten departments and two strategic initiatives in the areas of neighborhood services and economic growth. She was previously vice president of human resources for Textron. From 1983 to 1997, Ms. Grant held executive positions in law, external affairs, and operations for NYNEX, including leadership of the entire business in Rhode Island. She also served as the founding Chair of the Rhode Island Airport Corporation during the period that the quasi-public organization was created and the new terminal at T.F. Green Airport was built.

Ms. Grant has held a wide variety of civic leadership roles, including Chair of the Greater Providence Chamber of Commerce and membership on the Governor's Economic Policy Council and the Board of the Rhode Island Foundation.

Education and Credentials

- Juris Doctor from University of Michigan School of Law
- B.A. from University of Missouri
- HONORS: Athena Award, the New England Council's Women in Leadership Award

Brooke E. Barnes

Senior Project Manager, Regulatory Specialist

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

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

PROFESSIONAL EXPERIENCE

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

EDUCATION

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

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

REGISTRATIONS

Attorney #3347, Maine State Bar Association

PROFESSIONAL ASSOCIATIONS

Member, Maine Management Service

Board of Directors, Environmental & Energy Technology Council of Maine

PROJECT EXPERIENCE

Facility Siting and Permitting

Bangor Landing Coal Tar Cap, Bangor, Maine

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

Brooke E. Barnes

Senior Project Manager, Regulatory Specialist

Line 56 Project, Maine

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

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

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

Penobscot River Module Facility, Brewer, Maine

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

Cabela's Commercial Development, Scarborough, Maine

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

Wind Farm Development

Oakfield Wind Project, Oakfield, Maine

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

Brooke E. Barnes

Senior Project Manager, Regulatory Specialist

Stetson II Wind Project, Washington County, Maine

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

Rollins Wind Project, Penobscot County, Maine

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

Stetson Wind Project, Washington County, Maine

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

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil Scientist

Mr. Knapp is a Senior Project Manager and the Director of the Water Resources Division at Stantec. His primary responsibilities include staff management, project administration and management, ecological field surveys, strategic planning for permitting, and report preparation. In addition to managing and implementing large scale permitting and restoration projects, Mr. Knapp has conducted a variety of field biological sampling efforts to determine risk to ecological receptors and water quality determinations. He has also provided expert witness testimony regarding the findings of various ecological field surveys. Mr. Knapp also has extensive experience in soil mapping, morphology, and subsurface wastewater design.

Under Mr. Knapp's direction, the Water Resources Division performs wetland delineations, vernal pool surveys, threatened and endangered species surveys, ecological community characterizations, permitting, biological assessments, environmental planning, fish and wildlife surveys, wetland mitigation and compensation, project management and document preparation in accordance with the state and federal regulatory agencies.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Senior Project Manager, Director of Water Resources.
- Woodlot Alternatives, Inc. 2005-2007. Project Manager.
- Corinne Leary. 2002-2005. Field Scientist.
- Leary Soil Works. 2001-2002. Construction.

EDUCATION

BA, University of Maine, Orono, Maine, 2003

Preserving the Wetland Landscape - Tools for Successful Mitigation, Grappone Center, Concord, New Hampshire, 2006

Subsurface System Inspector, Joint Environmental Training Coordination Committee, Portland, Maine, 2006

Hydric Sandy Soils Workshop, Maine Association of Professional Soil Scientists, Scarborough, Maine, 2006

Basic and Advanced Erosion Control Practices, Maine Non-point Source Training and Resource Center, Portland, Maine, 2007

40-Hour HAZWOPER Certification, OSHA, Topsham, Maine, 2010

REGISTRATIONS

Onsite Sewage Disposal System Inspector #523, State of Maine, An Office of the Department of Health and Human Services - Subsurface Wastewater Program

Apprentice Wetland Scientist #WSA-18, New Hampshire Joint Board

Licensed Site Evaluator #386, State of Maine, An Office of the Department of Health and Human Services - Subsurface Wastewater Program

Enviro-Septic Certified #5058MEES, Presby Environmental Inc.

PROFESSIONAL ASSOCIATIONS

Vice President, Maine Association of Site Evaluators

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil Scientist

Member, New Brunswick Environment Industry Association

Member, Society of Wetland Scientists

Professional Member, Society of Soil Scientists of Southern New England

President, Maine Association of Wetland Scientists

Recognized Wetland Delineator, New Brunswick Department of Environment

Member, Association of State Wetland Managers

Member, Maine Association of Professional Soil Scientists

PROJECT EXPERIENCE

Natural Resource Services

Pine Tree Landfill Restoration Project, Hampden, Maine

Senior Project Manager responsible for conducting natural resource surveys and developing and implementing a restoration plan to repair and rehabilitate habitat affected by an incidental release of liquid material of unknown composition from a gas-to-energy recovery system at the Pine Tree Landfill.

Rollins Wind Project, Penobscot County, Maine

Senior Project Manager responsible for organizing and managing all natural resource surveys for an extensive 60-megawatt wind project consisting of 40 turbines, 2 transmission lines, an electrical substation, and an operations and maintenance building. He also helped address agency questions and concerns, including those of the U.S. Fish and Wildlife Service regarding impacts to eagles and oversaw the QA/QC of natural community mapping and permitting efforts, which included Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications. The project is expected to be fully operational in 2010.

Oakfield Wind Project, Oakfield, Maine

Senior Project Manager responsible for organizing and managing all natural resource surveys for a 34-turbine wind project encompassing 600 acres, including 12 miles of collector line, capable of generating 51 megawatts of renewable energy. Survey efforts included wetland delineations, vernal pool surveys, and rare, threatened and endangered species plant and wildlife surveys. He also oversaw the QA/QC of natural community mapping and permitting efforts, which included Maine Department of Environmental Protection, U.S. Army Corps of Engineers, and local permit applications. The project is expected to be fully operational in 2010.

Old Port Village Peer Review, Kennebunkport, Maine

Senior Project Manager. Reviewed documents filed by the applicant as they pertained to natural resource impacts associated with a proposed subdivision and the presence or absence of rare, threatened, and endangered (RTE) species that may occur within the proposed project area. Work done on behalf of an abutting property owner to the proposed development.

Penobscot River Restoration Natural Resource, Penobscot County, Maine

Technical Lead. Coordinated and participated in natural resource assessment of three dam impoundments along a 10-mile stretch of the Penobscot and Piscataquis Rivers. Characterized existing ecological resources and collected existing infrastructure information. Tasks included wetland reconnaissance, site specific delineation and Function Value Assessments along the backwater of all three impoundments. In addition, coordination of invasive/exotic plant management and supporting development of ecological changes post removal.

Wind Farm Development Surveys and Risk Assessments, Maine

As Senior Project Manager, Mr. Knapp has managed preconstruction wind farm development surveys and assessments at multiple sites throughout Maine. These assessments include site prospecting for wind farm sites, landscape analyses, fatal flaws, and ecological community characterization.

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil Scientist

Hoosac Wind Project, Massachusetts

Field Manager/Senior Project Manager. Conducted a series of wetland delineations in concert with other environmental team members. Field surveys included confirming mapped wetlands and other natural communities and delineating the boundaries of wetlands, streams, and other natural resource features. He also conducted extensive botanical field surveys within the project area to determine if any state- or federal-listed rare plant species were present.

Cabelas Retail Development, Scarborough, Maine

Wetland Scientist. Conducted wetland delineations and vernal pool surveys. Completed a systematic mitigation site search through several counties in suppport of permitting efforts.

Highland Wind, Maine

Senior Project Manager responsible for the organization and management and oversaw the QA/QC of the wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys conducted on an approximately 1,500-acre project area.

Line 56, Maine

Senior Project Manager responsible for organization and management of all natural resource work along more than 50 miles of transmission line corridor.

Maine Power Connection Transmission Corridor, Maine

Senior Project Manager responsible for the organization and management and oversaw the QA/QC of the wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys conducted along over 140 miles of existing and proposed power line corridor between Haynesville and Chester, Maine.

Grand Manan Wind Farm Phase I, New Brunswick

Senior Project Manager responsible for organization and management of all wetland delineations and impact assessments for a 20 MW wind project covering 250 acres on the island of Grand Manan.

Stetson Wind Farm, Maine

Field Manager and Permitting Support. Responsible for completing natural resource surveys on a 1,300-acre project area for this 24 MW wind project. Mr. Knapp functioned as field leader responsible for leading teams of 4-6 person crews. Studies included wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys. Assisted in the completion of required state and federal permit applications filed in support of the project.

Record Hill Wind Farm, Roxbury, Maine

Senior Project Manager supporting the Record Hill wind project, which is a 22-turbine, 55 MW wind project on a forested ridge environment in the western Maine mountains. This project has included planning and feasibility studies, wetland delineations, wildlife impact studies, noise and visual impact assessments, and coordination of all state and Federal environmental permitting.

Redington Wind Farm, Maine

Field Manager and Permitting Support. Responsible for completing natural resource surveys on a 1,700-acre project area. Functioned as field leader responsible for leading teams of 4-6 person crews. Studies included wetland delineations, vernal pool surveys, natural community mapping, and RTE plant and wildlife surveys. Assisted in the completion of required state and federal permit applications filed in support of the project.

Dale F. Knapp

Senior Project Manager, Wetland Scientist, Soil 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.

Presentation: The Dirty Side of Wetland Science. *Distinguished Speaker Series: University of Maine Fort Kent, Fort Kent, Maine*, 2009.

Guest Lecturer: College Level Course PSE 413/PSE 533 Wetland Delineation and Mapping. *University of Maine, Orono, Maine*, 2009.

Guest Lecturer: College Level Course PSE 413/PSE 533 Wetland Delineation and Mapping. *University of Maine, Orono, Maine*, 2008.

Workshop: Hydric Soil Determination. *Stantec Consulting*, 2007.

Guest Lecturer: College Level Course PSE 413/PSE 533 Wetland Delineation and Mapping. *University of Maine, Orono, Maine*, 2007.

Workshop: Intro to Soil Science. *Stantec Consulting*, 2006.

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager

Mr. Arsenault is a Certified Ecologist and expert Botanist responsible for performing ecological and botanical assessments and characterizations; natural resource inventories including rare, threatened, and endangered species surveys; wetland delineations and function and value assessments; wildlife population surveys; long-term biological monitoring; and water quality monitoring surveys.

Mr. Arsenault has worked on numerous ecological projects, including natural community and rare plant and wildlife survey projects throughout the northeastern and mid-Atlantic United States. These projects have ranged from general reconnaissance observations to quantitative, community- and species-specific surveys. These projects have involved detailed natural community mapping and analysis. He has provided expert witness testimony regarding the findings of various ecological field studies.

Mr. Arsenault has taught many workshops and led field trips on plant identification and ecology. Continuing education and training has included many workshops with the New England Wildflower Society, Josselyn Botanical Society, Maine Association of Wetland Scientists, and Delta Institute of Natural History.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager.
- Woodlot Alternatives, Inc. 2005-2007. Project Scientist.
- Delorme Mapping. 2004-2005. Map Technician.
- Maine Natural Areas Program. 2003-2004. Assistant Ecologist.
- Shenandoah National Park. 2003. Biological Science Technician (Exotic Survey Crew).
- University of Maine. 2001-2003. Biological Research Assistant

EDUCATION

BS, Botany, summa cum laude honors, University of Maine, Orono, Maine, 2003

Wetland Delineation Methods, University of New Hampshire, Durham, New Hampshire, 2005

10-Hour Construction Safety & Health Certified, OSHA, Topsham, Maine, 2009

40-hour HAZWOPER Certified, OSHA, Topsham, Maine, 2010

Wilderness First Aid Certified, SOLO, Topsham, Maine, 2010

Heartsaver CPR Certified, SOLO, Topsham, Maine, 2010

REGISTRATIONS

Ecologist, Ecological Society of America

PROFESSIONAL ASSOCIATIONS

Survey-approved Botanist, Massachusetts Division of Fisheries & Wildlife, Natural Heritage and Endangered Species Program

Plant Conservation Program Task Force, New England Wildflower Society

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager

Member, Maine Natural Areas Program (Botanical Advisory Group)

Member, New England Wildflower Society

Member, New England Botanical Club

Member, Friends of the Maine Herbarium, The University of Maine Herbaria

Member, Josselyn Botanical Society

Recognized Wetland Delineator, New Brunswick Department of Environment

Member, Ecological Society of America

Member, Maine Association of Wetland Scientists

PROJECT EXPERIENCE

Natural Resource Services

Blanding's Turtle Survey, Galloo Island, New York

Project Scientist responsible for performing surveys for Blanding's turtles at a proposed development site. Survey methods included binocular surveys, nesting surveys, and trapping.

Rare Plant Survey, Lower Chichester, Pennsylvania

Lead Project Scientist responsible for performing a rare plant survey and natural community characterization of a proposed development site.

Rare Plant Survey, Londonderry, New Hampshire

Lead Project Scientist responsible for performing a rare plant survey and natural community characterization of a proposed development site.

Moresville Wind Power Project, Delaware County, New York

Lead Project Scientist. Conducted a broad-spectrum survey and characterization of the existing natural resources including natural communities, rare plants, and rare wildlife along an approximately 5-mile ridgeline in south central New York. Provided a detailed report of the results of the field surveys.

Ecological Characterizations, Windham and Westbrook, Maine

Field Manager and Lead Project Scientist. Responsible for leading field surveys including surveys for rare, threatened, and endangered species of plants and wildlife; assessments of existing wildlife habitat values; and mapping of wetland and stream resources. Provided detailed reports of the findings as well as an analysis on the overall landscape value of each parcel and mitigation potential.

Wetland Mitigation Monitoring, Kennebunkport, Maine

Project manager responsible for conducting and coordinating annual wetland monitoring of a created wetland mitigation site in southern Maine. Prepared annual reports that were submitted to state regulatory agencies describing the existing wetland conditions as well as functions and values. Assessments were made regarding the overall success of the wetland mitigation site.

Wetland Delineation and Vernal Pool Survey, Madison, Maine

Project manager responsible for conducting and coordinating field efforts and report preparation for a wetland delineation and subsequent vernal pool survey of an approximately 100-acre parcel.

Blanding's Turtle Survey, Lyman, Maine

Field Manager and Lead Project Scientist. Conducted binocular and meander surveys targeting the state endangered Blanding's turtle at a project site in southwestern Maine. Prepared a detailed report describing the methodology and results of the field surveys.

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager

MBTA Greenbush Line Ecological Monitoring, Scituate, Cohasset, and Hingham, Massachusetts

Project Scientist. Conducted annual monitoring of wetlands and vernal pools including quantitative sampling of vegetation, macroinvertebrates, and water quality. Responsible for conducting radio telemetry monitoring of spotted turtles to determine seasonal movement patterns. Conducted regional de novo surveys targeting spotted turtles. Survey methods included binocular surveys, meander surveys, and trapping.

Proposed Transmission Line Natural Resource Identification, Penobscot and Aroostook Counties, Maine

Project Scientist. Completed vernal pool surveys, wetland delineations, and rare plant surveys along over 40 miles of a proposed transmission line corridor in northern Maine. Coordinated with the State agencies regarding potential impacts to several species of rare plants that were identified within the project corridor.

Saddleback Maine Ski Area Expansion, Rangeley and Dallas Plantation, Maine

Field Manager and Lead Project Scientist. Completed landscape analyses and field surveys to identify and characterize the existing natural resources present on Saddleback Mountain in western Maine prior to construction of a proposed development. Provided detailed analyses and expert witness testimony relative to the potential effects of the proposed development on significant natural resources including plants and wildlife and their associated habitats.

Stetson Mountain Wind Power Project, Washington and Penobscot Counties, Maine

Project Scientist. Completed wetland delineations and rare, threatened, and endangered plant surveys of a low elevation ridgeline and over 30 miles of a proposed transmission line associated with a proposed wind power facility.

Commercial Spring Source Biological Monitoring, Southern and Western Maine

Field Manager and Lead Project Scientist. Developed and implemented biological monitoring plans designed to provide long-term monitoring of potential impacts as a result of groundwater withdrawal to significant natural resources including wetland and stream habitats. Field efforts include annual quantitative sampling of wetland and stream habitats as well as identification of rare, threatened, or endangered species of plants and wildlife. Responsible for providing detailed analyses of the potential effects of water withdrawal operations on significant natural resources.

Significant Ecological Resource Evaluations, Moosehead Lake Region, Piscataquis and Somerset Counties, Maine

Field Manager and Lead Project Scientist. Responsible for coordinating and conducting field efforts on over 300,000 acres of forest land in northern Maine. Efforts included completing a landscape analysis focused on identifying areas likely to support significant natural resources including large wetland systems, exemplary natural communities, and rare, threatened, and endangered species of plants and wildlife and their associated habitats. Subsequent field surveys targeted areas to identify and characterize the existing natural resources and their overall landscape significance. Species-specific targeted surveys were conducted for several species of sensitive wildlife including rusty blackbird, Bicknell's thrush, and Clayton's copper butterfly. Conducted detailed analyses and provided expert witness testimony relative to the potential effects of a proposed development and conservation easements on the significant natural resources present within the project area.

Matthew P. Arsenault

Certified Ecologist, Botanist, Project Manager

PUBLICATIONS

Workshop: Carex Identification. *Maine Assocaition of Wetland Scientists*, 2009.

Workshop: Winter Twig Identification. *Stantec Consulting. 2006*, 2008.

Campbell, C.S., R.C. Evans, D.R. Morgan, T.A. Dickinson, and M.P. Arsenault. Phylogeny of subtribe Pyrinae (formerly the Maloideae, Rosaceae): Limited resolution of a complex evolutionary history. *Plant Systematics and Evolution. 266. pp. 119-145*, 2007.

Potter, D., T. Eriksson, R. Evans, S.-H. Oh, J. Smedmark, D. Morgan, M. Kerr, K. Robertson, M. Arsenault, and C. Campbell. Rosaceae phylogeny and classification. *Plant Systematics and Evolution. 266. pp. 5-43*, 2007.

Presentation: Natural Resource Inventories. *Maine Land Trust Conference, Maine Coast Heritage Trust*, 2007.

Presentation: The Genus Galium. *Plant Identification Workshop for Josselyn Botanical Society Annual Meeting*, 2006.

Campbell, C.S, W.A. Wright, M. Cox, T.F. Vining, C.S. Major, M.P. Arsenault. Nuclear ribosomal DNA internal transcribed spacer 1 (ITS1) in Picea (Pinaceace): Sequence divergence and structure. *Molecular Phylogenetics and Evolution, 35: 165-185*, 2005.

Arsenault, M. and A. Haines. Rediscovery of Carex typhina (Cyperaceae) in Maine. *Rhodora, 106:52-54*, 2004.

Presentation: Alpine Ecology. *Appalachian Mountain Club Ridge Runner Program*, 2004.

Arsenault, M. et al. Incongruence between three genomes in phylogenetic studies within Picea (Pinaceae). *Botany 2003 conference, Alabama*, 2003.

Danielle M. Dyer

Botanist, Project Scientist

Ms. Dyer is a Project Scientist responsible for leading large-scale wetland delineations, vernal pool surveys and rare, threatened and endangered species surveys, including data collection, natural community surveys, habitat studies, and data analysis. She has most recently been involved in wind power developments as large-scale wetland delineation, vernal pool surveys, associated data management and reporting as preparation for state and federal permitting requirements. Prior experience includes monitoring loon nesting territories and conducting land bird vegetation and rare plant surveys.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Botanist and Project Scientist.
- Woodlot Alternatives, Inc. 2006-2007. Project Technician.
- Lake Umbagog National Wildlife Refuge. Summer 2006. Loon Monitor Intern.
- New England Wild Flower Society. May 2005-November 2005. Lovejoy Conservation Fellow.
- The Nature Conservancy/SCA, New Paltz, NY. June 2004-November 2004. Stewardship Assistant Intern.
- Vermont Dept. of Environmental Conservation, Water Quality Division. May 2003-August 2003. Intern.

EDUCATION

BS, Wildlife Conservation, Unity College, Unity, Maine, 2005

Rapanos Workshop, Maine Association of Wetland Scientists, Augusta, Maine, 2008

Identifying Sedges and Rushes, UNH Cooperative Extension, Durham, New Hampshire, 2008

Plant Systematics, New England Wild Flower Society, Framingham, Massachusetts, 2008

Basic and Advanced Soil Erosion Control Practices, Maine Nonpoint Source Training and Resource Center, Portland, Maine, 2007

Motorboat Operator Certification, USFWS, Errol, New Hampshire, 2006

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

Identifying Grasses, Delta Institute of Natural History, Bowdoin, Maine, 2009

Wilderness Advanced First Aid, Wilderness Medical Associates, Wiscasset, Maine, 2010

PROFESSIONAL ASSOCIATIONS

Volunteer, Maine Butterfly Survey

Member, Josselyn Botanical Society

Plant Conservation Volunteer, New England Wildflower Society

Membership Chair, Maine Association of Wetland Scientists

Member, Association of State Wetland Managers

PROJECT EXPERIENCE

Natural Resource Services

New England Wild Flower Society, Plant Conservation Volunteer Corps, Maine and New England

Volunteer responsible for conducting rare plant surveys, botanical inventories, and submitting data to state natural heritage programs.

Danielle M. Dyer

Botanist, Project Scientist

Loon Population Survey, Lake Umbagog National Wildlife Refuge, Errol, New Hampshire

Loon Monitor responsible for monitoring the nesting success of loon populations and the presence or absence of loons in particular territories on the lake. Provided educational presentations to visitors and camp organizations about loon behavior and population status.

Wind Project Migratory Bird Surveys and Impact Studies, Western New York and Northern New Hampshire

Provided ecological evaluations and avian impact assessments associated with three proposed wind power projects. Studies for these projects included migratory bird and bat surveys by conducting ground and aerial observation surveys, customized marine surveillance radar surveys, ceilometers, weather radar, remote acoustic receivers, and computer analysis of migration.

Stetson Wind Project, Penobscot County, Maine

Project Technician responsible for collecting global positioning system (GPS) points to accurately represent natural resource boundaries on a low elevation ridge and over 30 miles of transmission line.

Record Hill Wind Farm, Maine

Project Technician responsible for collecting global positioning system (GPS) points to accurately represent natural resource boundaries.

Rare, Threatened, and Endangered Species and Critical Habitat Surveys, Eastern United States

Project Technician performing numerous surveys for state and federal listed species and sensitive habitats for proposed development sites. Through landscape analysis, Stantec was able obtain federal and state agency concurrence on findings in a cost-effective and timely manner. The landscape analysis process relied on a combination of remote sensing, field surveys, and known information on ecological communities and species life history requirements to make determinations regarding potential for rare, threatened, and endangered species or critical habitats to occur on commercial development sites.

Oakfield Wind Project, Oakfield, Maine

Project Scientist and Field Leader responsible for organization, progress, and safety of field staff through the field work phase of large-scale wind power development. Responsible for data management and associated reporting of findings to accompany NRPA and Army Corps permits.

Highland Wind Project, Highland Plantation, Maine

Project Scientist and Field Leader responsible for organization, progress, and safety of field staff through the field work phase of large-scale wind power development. Responsible for data management and associated reporting of findings to accompany NRPA and Army Corps permits.

Bryan P. Emerson

Project Manager, Wetland Scientist

Mr. Emerson is a Project Manager responsible for conducting and coordinating a variety of natural resource projects, including wetland delineations, vernal pool surveys, wetland mitigation planning and design, and wildlife monitoring and habitat assessments. He has direct field experience working on a variety of natural community survey projects ranging from general reconnaissance observations to quantitative, community- and species-specific surveys. These projects have involved natural community mapping, data analysis, and report writing. He is also experienced in designing wetland mitigation projects, preparing compensation plans, providing construction oversight, and conducting long-term monitoring of mitigation sites. He has also assisted clients in the preparation of federal and state permit applications.

Prior experience includes designing, managing and installing wetland and stream restoration projects. Projects included native plant installation, invasive species control, stream channel modifications, bank and slope stabilization, and wetland creation and restoration. Mr. Emerson has led conservation crews doing trail work, carpentry, streambank stabilization, and historic cemetery restoration. He has also conducted field and laboratory studies on the impact to aquatic environments by non-native zebra mussels.

PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager.
- Woodlot Alternatives, Inc. 2006-2007. Project Technician.
- Restoration Logistics. 2003–2005. Project Manager.
- VT Youth Conservation Corps. 2001 and 2002. Crew Leader.

EDUCATION

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

40-Hour Hazwoper Certification, OSHA, Topsham, Maine, 2010

REGISTRATIONS

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

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

PROFESSIONAL ASSOCIATIONS

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

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.

Bryan P. Emerson

Project Manager, Wetland Scientist

Granny Hole Natural Resource Surveys and Permitting, Topsham, Maine

Project Manager. Performed a wetland delineation 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.

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.

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.

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.

Herbicide Applications, Southern Maine

Herbicide Applicator and Project Manager. Performed applications of herbicides to control invasive plant species at various sites around southern Maine. Utilized foliar spray and cut-and-paint techniques to treat both herbaceous and woody plant species.

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.

Bryan P. Emerson

Project Manager, Wetland Scientist

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 final design that would minimize natural resource impacts. Prepared state and federal permit applications.

Mitigation Site Search and Mitigation Planning, Bangor, Maine

Project Manager. Conducted a mitigation site search to find a location to compensate for wetland impacts associated with the construction of a commercial building. Designed a conceptual mitigation project and presented the results to federal regulatory agencies.

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.

DANIEL T. BUTLER, PE

EDUCATION

B.S., Civil Engineering, University of Maine, 1986
Civil Engineering Graduate Courses, University of Maine, 1995

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

NCEES Certificate #16505
Professional Engineer, Maine, (#6796), 1990
Professional Engineer, New Hampshire, (#8105), 1991
Professional Engineer, Florida, (#53332), 1998
Professional Engineer, New York, (#079800), 2002
Professional Engineer, Connecticut, (#23045), 2002
Professional Engineer, New Brunswick, Canada, (#L3291), 1998
Professional Engineer, New Jersey, (#24GE04574600), 2005
Professional Engineer, New Mexico, (#17752), 2006
Professional Engineer, Arizona, (#45969), 2007
Professional Engineer, Prince Edward Island, Canada, (#1141), 2007
Professional Engineer, Massachusetts, (#47517), 2008
Professional Engineer, West Virginia, (#18069), 2009
Professional Engineer, Vermont, (#46232), 2009
Professional Engineer, Rhode Island, 2009

AREAS OF EXPERTISE

Mr. Daniel T. Butler, PE has management and technical experience in the following general areas:

- Engineering Management
- Civil & Structural Design
- Project Management
- EPC Project Management
- Preliminary & Conceptual Design
- Condition Assessment
- Engineering Studies
- Equipment Specifications
- Detailed Engineering Design
- Project Scheduling and Estimating
- Spill Prevention, Control & Countermeasure Plans (SPCC)
- Site Layout & Grading
- Foundation Design
- Licensing & Permitting
- Water Management Permitting

REPRESENTATIVE EXPERIENCE
Mr. Butler has approximately 25 years of broad based civil/structural engineering experience with over 10 in the power delivery sector with specific expertise in substation site grading and development; foundation and concrete design; roadway design; sanitary sewer and water system designs; storm water and erosion control management; environmental permitting; and extensive experience with engineering, procurement, and construction (EPC) contracts.

ENGINEER OF RECORD
As Manager of the Civil and Transmission Engineering Department, Mr. Butler's primary duties are those as an Engineer of Record. As an Engineer of Record, Mr. Butler is responsible for the preparation, reviewing, coordinating, signing, dating, sealing, and issuing of any engineering document prepared by himself or by others working under his direction.

Recent projects which Mr. Butler assisted, supervised the civil/structural design effort, and performed as the Civil Engineer of Record includes the following:

First Wind, Oakfield II 106MW (46Turbines) Wind Farm, Oakfield, ME
TRC's scope of work included design of the ridge-top turbine sites, about 20 miles of crane and access roads, over 30 miles of 34.5 kV collector system including 2 miles of underground collector, a 34.5 to 115 kV substation, 60 miles of 115 kV transmission system, and site design for the Operation and Maintenance facility. TRC's work also included coordination with the Owner's environmental engineer to identify and minimize impact on significant natural resources.

TransCanada, Kibby Wind Project, Kibby Township, ME
The Kibby Wind Project consisted of two distinct project developments-one on Kibby Mountain and the other on nearby Sisk Mountain. For the Kibby project, TRC designed the 30 mile 115kV transmission line and served as the Owner's Engineer for the design of the substation. For the Sisk project, TRC provided all permitting and engineering design services including the preparation of the stormwater and erosion control management plans and the design of the access and ridge top roads, 34.5kV collector system, and the 115/34.5kV substation. When completed, the overall wind development will consist of over 50 3.0MW, v90 Vestas wind turbines spread along the two mountain ranges making this wind project the largest in New England.

National Grid, Wakefield Junction Substation, Massachusetts
As the prime consultant/contractor on the Wakefield Junction Substation project, TRC is providing engineering, procurement, and construction services for a new 345/115kV GIS substation under the terms of an EPC contract. The project includes engineering, designing, procuring, constructing, and testing equipment to provide the owner with complete operational facilities. These facilities include an indoor 115kV twelve breaker gas insulated substation, an indoor 345kV

twelve breaker gas insulated substation, and four 345/115kV autotransformers. Completion of this project is a critical part of various improvements to the transmission system associated with the North Shore Area Upgrades.

Northeast Utilities, Barbour Hill Substation, South Windsor, CT
TRC provided engineering, procurement and construction services to Connecticut Light & Power for the Barbour Hill Substation Modification Project. This project included the removal and disposal of 3000 cubic yards of contaminated soils, the construction of a new 115kV substation, the cut-over of six 115kV overhead lines from an existing 115kV substation to the new 115kV substation, the demolition and removal of the existing 115kV substation, the construction of a new 345kV substation, and the cut-over of an existing 345kV overhead line.

Central Maine Power, Maguire Road Project, Southern Maine
TRC, as a joint venture, provided engineering, licensing, procurement and construction services to Central Maine Power. This project was designed to improve the reliability of the transmission system in Southern Maine and included the construction of a new 115kV substation, a major expansion of a 345kV substation, upgrades at multiple remote end substations, and transmission line rebuilds and re-conductors.

Bangor Hydro Electric Company, NRI Orrington 345kV Substation Expansion Project
TRC provided engineering, procurement, and construction services to BHE for an expansion at the existing 345/115kV Orrington Substation Facility as part of the Northeast Reliability Interconnect 345kV Transmission Line Project. Changes included the relocation of the existing Orrington-Maxcy's tie-line, the addition of a series compensation of the Orrington-Maxcy's 345kV Line, termination of an additional second tie-line to New Brunswick Power, expansion of the existing control house to accommodate new and future protection & control equipment, cable trench and conduit additions to comply with NPCC separation requirements.

Rochester Gas & Electric, Rochester Transmission Project, Rochester, NY
TRC, working in partnership with two other firms, completed final design, procurement and construction of the Rochester Transmission Project EPC project. At the time of award this project was the largest one of its kind in the country. The scope of work included engineering, procurement, project management, civil and electrical construction, testing and commissioning of all facilities in this project. The facilities in this project included approximately 38 miles of new or rebuilt 115kV transmission lines, two new 115kV substations, and expansion and equipment upgrades at nine existing substations.

Ventus Energy, West Cape & Norway Wind Projects, PEI, Canada
TRC's scope of work included the design, procurement, project management, construction oversight and commissioning of 138/69kV interconnection facilities and 34.5kV collector systems for two wind powered generating facilities located along the north western coastline of Prince Edward Island, Canada.

National Grid, Clay 345 kV Rebuild, Clay, New York
This project consisted of reconfiguring seven existing 345kV transmission lines in conjunction with rebuilding a 40 year old substation. The project included the addition of an eighth bay to an existing seven-bay 345kV yard to allow most of the work to be done in a de-energized bay. The substation upgrade included a new 345 kV control house and station service. The transmission reconfiguration included replacement of existing lattice steel structures of several different designs with tubular steel pole structures.

DOUGLAS R. GILMAN

EDUCATION

A.S., Architectural Drafting and Civil Engineering, Central Maine Vocational Technical Institute, 1980

AREAS OF EXPERTISE

Douglas R. Gilman has program management and technical experience in the following general areas:

- Extra High Voltage (EHV) Transmission Switchyards & Power Equipment
- High Voltage (HV) Transmission Switchyards & Power Equipment
- Distribution Substations & Power Equipment
- Transmission & Distribution Line Equipment & Arrangements
- EPC Substation Contracts
- Power Equipment Technical Specifications & Procurement
- GIS & Open Air Design
- HV & Distribution Power Cable System Design
- Ground Grid Design

REPRESENTATIVE EXPERIENCE

Mr. Gilman has over 29 years of experience in the electric utility industry with electrical, mechanical, and civil design and construction knowledge. His qualifications include 24 years of experience in substation design, recently serving as discipline lead with project management responsibility. His duties include preparing electrical equipment and construction specifications, and providing technical assistance with material procurement efforts on turn-key projects. He presently performs as Lead Designer within the Substation Engineering and Design Support Group, preparing detailed drawings and material lists for large construction projects to align with industry standards. Mr. Gilman's extensive use of CADD drafting and design on various client projects using Microstation V8 and AutoCadd platforms, contribute to his ability to provide complete, organized, and constructible electronic media documents.

Bangor Hydro Electric Company, Keene Road Substation Project - Chester, ME (Lead Substation Designer, Discipline Lead: 2008-2009)

Mr. Gilman serves as discipline design lead for the Substation group responsible for the overall technical coordination and review of designs, calculations, and reports to support a 345/115kV substation three-terminal breaker and one-half Bulk Power System configured yard with 300MVA auto-transformer and control building. This facility's design included interconnection with a separate existing 115kV expanded switchyard and 345kV SVC station for a fully functional project installation to industry standards, while meeting the client's expectations and schedule.

Central Maine Power Company, Maguire Road Transmission Project - Kennebunk, ME (Lead Substation Designer: 2007 – 2008)
Mr. Gilman served as Lead Substation Designer responsible for the preparation and overall coordination of equipment technical specifications / procurement, and the design upgrades at nine switching / substation facilities (345 & 115kV). This project includes a new 115kV six terminal breaker and one-half configured station with 50MVAR capacitor bank (Maguire Road), and a three terminal 345kV breaker and one-half project expansion at Buxton station. The remote-ends portion of this project involved station yard and relay house equipment upgrades necessary to support the associated protection and communication efforts. All new and existing relay house systems and infrastructure were designed for Bulk Power System criteria operation.

Rochester Gas & Electric, Station #7 - Greece, NY (Lead Substation Designer: 2005 – 2007)
Mr. Gilman served as Lead Substation Designer responsible for the design / details of a new 115/34kV substation configured in a 9 breaker, breaker and one-half layout, with four 115/34kV 75 MVA power transformers feeding a 26 breaker 34kV ring-bus. The substation terminates three overhead 115kV transmission supply lines, stepping down to twenty 34kV distribution circuits, with (2) 115kV 50 MVAR capacitor banks. The 34kV transformer supplies are underground to the ring-bus, with the majority of circuits exiting the station underground via encased duct banks and manholes. The 40’ x 75’ Relay House and station equipment were designed for Bulk Power System criteria operation.

National Grid, U.S.A. Service Company, Salem Harbor Substation - Salem Harbor, NY (Senior Substation Designer: 2004 – 2005)
Mr. Gilman served as Senior Substation Designer at an existing 115/23/4kV substation facility responsible for the design of a new 38’x60’ relay house, cable trench, and conduit systems which were upgraded and constructed to meet Bulk Power System (BPS) criteria.

Central Maine Power Company, Bridgton/Woodstock/Lovell - Maine (Designer: 2004)
Mr. Gilman was responsible for the design of a new 5.4 MVAR capacitor bank for the CMP Bridgton/Woodstock/Lovell Project.

Public Service of New Hampshire, Amherst Substation - Amherst, NH (Project Manager: 2003-2004)
Mr. Gilman served as Project Manager responsible for the design, construction, scheduling, and cost reporting of a five breaker 345kV ring-bus and 140 MVA transformer addition which included upgrades to a majority of the existing 345 and 34.5kV facilities; while concurrently serving as the lead substation design role during the design of this project. This project was designed and constructed to meet Bulk Power System (BPS) criteria.

Dick Corporation, South Kensington GIS - Meridan, CT (Substation Designer: 2002)
Mr. Gilman designed a new three breaker 345kV ring-bus Gas Insulated Switchgear (GIS) to meet Bulk Power System (BPS) criteria for Merchant plant interconnection.

Central Maine Power Company, Challenger Drive Substation - Lewiston, ME (Substation Designer: 2002)
Mr. Gilman was responsible for the design of a new substation with two 115kV line terminals, one 115/34kV 14 MVA transformer, and one 115/12kV 14 MVA transformer, with a 34kV circuit (aerial), and two 12kV underground distribution circuits.

Central Maine Power Company, Mussey Road Substation - Scarborough, ME (Substation Designer: 2002)
Mr. Gilman designed a new substation with two 115kV line terminals, and one 115/34kV 37 MVA transformer, with two 34kV circuits.

AES, Granite Ridge Substation - Londonberry, NH (Substation Designer: 2001)
Mr. Gilman was responsible for the design and construction of a new substation with two 230kV line terminals, and one 115kV line terminal and 24'x30' control house designed to meet Bulk Power System (BPS) criteria for Merchant plant interconnection.

Public Service of New Hampshire, Rochester Substation - Rochester, NH (Substation Designer: 2001)
Mr. Gilman was responsible for the design and construction of a 115/34.5kV 40 MVA transformer bank addition, including a new 115kV line terminal and 34 kV circuit for increased distribution capacity.

Central Maine Power Company - Various Locations (Designer: 1997 – 2000)
Mr. Gilman designed seven new breaker ring-bus substations for the 115kV Merchant plant interconnection. He designed the new 115kV addition, breaker, bus, and switch upgrades for 115 kV Merchant plant. Mr. Gilman also designed 100 MVAR, 150 MVAR 115 kV capacitor bank additions for the Merchant plant interconnection. He was also responsible for demolition and reconstruction of existing 12 kV substation for capacity increase and NESC compliance. He served as designer and field inspector, responsible for capacity increase and NESC compliance of the existing 34/12kV substation. Mr. Gilman also designed their new 34kV voltage regulator bank.

Jamaica Broilers, Wartsila Substation - Kingston, Jamaica (Designer 1999)
Mr. Gilman designed a new 69/13.8 kV substation for a manufacturing facility.

Daniel Alvarez-Valencia, M.S., EIT

EDUCATION

M.S. Civil Engineering, University of Maine, 2009
B.S. Civil Engineering, P. Universidad Javeriana, Bogota, Colombia, 2006

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Engineer-in-Training, Maine, (# 5841), 2007

AREAS OF EXPERTISE

Mr. Daniel Alvarez-Valencia, M.S., EIT, has technical experience in the following general areas:

- Structural Modeling, Analysis & Design
- Transmission Line Modeling
- Research and Development (R&D)
- Programming
- Construction
- Engineering Data Analysis
- Drafting Services
- Site Layout
- Surveying

REPRESENTATIVE EXPERIENCE

Mr. Alvarez-Valencia completed two six months internships with a construction company in Maine before graduating from a five year Civil Engineering program from the Pontificia Universidad Javeriana in Bogota, Colombia in 2006. He then worked for one year in an international consulting firm based in Bogota before graduating with a Master of Science in Civil Engineering title from the University of Maine in 2009. Since then, he has been working for TRC on the power delivery engineering division. He has five years of structural analysis and programming experience, three years of R&D experience, two years of surveying experience, three years of drafting experience, and one year of construction and bid preparation experience. He assisted Professional Engineers in the areas of structural analysis, R&D, civil design and road construction. He was responsible for the structural testing and analysis of an R&D project in composite materials at the AEWC Advanced Structures and Composites Center in Maine. Mr. Alvarez-Valencia was responsible for the development and application of multiple visual basic programs for data revision and engineering models implementation for a consulting firm in Colombia, and was responsible for construction layouts and construction crews for a company in Maine. Now is responsible for the modeling, analysis, design, and reinforcement of transmission, substation, and distribution structures.

Mr. Alvarez-Valencia currently serves in the capacity of Transmission Engineer.

National Grid, Franklin Square Substation - Providence, RI (Civil Engineer: 2010)
Mr. Alvarez-Valencia worked on the civil design for the electrical equipment attachments to the existing structure. The work included detail design of steel supports, and reviewing existing girder capacity, including a complete list of materials for construction. The scope of the project involved the replacement of 115 KV circuit breakers.

Florida Light & Power (FPL) – FiberNet - Miami, Florida (Transmission Engineer: 2010)
Mr. Alvarez-Valencia reviewed the concrete pole modeling worksheet for the analysis of the point of maximum moment and ground-line reaction. The scope of the project involved the analysis of a FPL standard 36 Kip direct embedded round spun pre-cast concrete transmission line pole.

Consolidated Edison of New York, 345 kV Transmission Line - Westchester County, NY (Civil Engineer: 2010)
Mr. Alvarez-Valencia reviewed modeled lattice steel towers in PLS-TOWER for Con Edison's E-Line double circuit 345 kV transmission line with bundled 2,493 kcmil ACAR conductors consisting of 143 towers based on structural drawings and peer review comments.

National Grid, Carpenter Hill Substation No. 435 - Charlton, MA (Civil Engineer: 2009-2010)
Mr. Alvarez-Valencia worked on the civil design for the electrical equipment attachments to the existing bus structure. The work included detail design of steel supports and analysis of insulator adequacy based on IEEE P605-1998/2008, including a complete list of materials for construction. The scope of the project involved the installation of additional substation and electrical equipment.

Central Maine Power CMP, Generator Lead Analysis, Spruce mountain wind farm - Rangeley, ME (Civil Engineer: 2009-2010)
Mr. Alvarez-Valencia worked on the generator lead analysis and report for the Spruce Mountain wind project. The work included detail modeling and analysis in PLS-CADD of the CMP distribution standard structures with CMP and NESC loading criteria, and the thermal rating review of the selected 336 AAC conductor based on IEEE 738-2006 for a 20MW wind facility, followed by a complete report of the results.

Orange & Rockland, Transmission Lines 24/25/26 - NY (Civil Engineer: 2009)
Mr. Alvarez-Valencia reviewed modeled lattice steel towers in PLS-TOWER for the Orange & Rockland's double circuit 69 kV and 138 kV transmission lines based on structural drawings.

Trans Canada, Kibby Expansion Wind Power Project – Chain of Ponds & Kibby Townships, ME (Civil Engineer: 2009)
Mr. Alvarez-Valencia worked on the 34 kV collector system preliminary engineering design for the proposed wind generator facility. The work included detail modeling and analysis in PLS-CADD of the collector system, consisting of approximately 3 miles of single circuit and 6 miles of double circuit, determining the general alignment, pole locations and typical structures.

National Grid, 2369 Line - Lawrence, MA (Civil Engineer: 2009)
Mr. Alvarez-Valencia modeled wood pole structures per NGrid Overhead Construction Stds. Section 21 "Distribution Supply", and conducted an analysis in PLS-CADD for NGrid's 2369 Line. The line was approximately 1 mile, 22 kV single circuit with 795 kcmil ACSR conductor. Assistance on the field work was also done. The scope of the project involved reconductor the 2369 line between the South Broadway substation and the South Union substation.

Consolidated Edison of New York, Analysis of 345 kV Transmission Line - Westchester County, NY (Civil Engineer: 2009)
Mr. Alvarez-Valencia edited and reviewed modeled lattice steel towers in PLS-TOWER based on field survey connection data, structural drawings and setting sheets. The scope of the project involved the modeling and analysis for Con Edison's E-Line double circuit 345 kV transmission line consisting of 143 transmission towers.

National Grid, East Longmeadow Substation No. 508 - East Longmeadow, MA (Civil Engineer: 2009)
Mr. Alvarez-Valencia worked on the analysis and report of the 13.2 kV strain bus for the single bay and double bay bus structures. The work consisted on modeling in Mathcad the existing bus system, including increased fault current levels with calculations based on IEEE P605/D14-08 and ASCE 7-05. The purpose of this analysis was to establish the adequacy of the insulator, attachment hardware, and impact on foundation supports for a safe operating system.

National Grid, Shaker Road Substation No. 522 - East Longmeadow, MA (Civil Engineer: 2009)
Mr. Alvarez-Valencia worked on the 13.2kV rigid bus and 115kV dead end structure analysis and report. The work consisted on modeling in Mathcad the existing bus system, including increased fault current levels with calculations based on IEEE 605-98, ASCE 7-05 and IBC-06. Modeling in PLS-Caisson of the existing foundations of the 115kV dead end structure for the design loads was done. The purpose of this analysis is to establish the adequacy of individual structural components for a safe operating system.

National Grid, Hampden Substation No. 524 - Hampden, MA (Civil Engineer: 2009)
Mr. Alvarez-Valencia worked on the analysis and report of the 13 kV strain bus and bus structure. The work consisted on modeling in Mathcad the existing bus system, including increased fault current levels with calculations based on IEEE P605/D14-08 and ASCE 7-05. The structure analysis consisted on the strength check of steel beams that support the strain insulators and a PLS-POLE model of the existing structure. The purpose of this analysis is to establish the adequacy of individual structural components for a safe operating system.

National Grid, Pawtucket Substation No. 1 - Pawtucket, RI (Civil Engineer: 2009)
Mr. Alvarez-Valencia worked on the analysis of the 115 kV strain bus. The work consisted on modeling in Mathcad a critical 1590 kcmil AAC strain bus three phase system, including increased fault current levels with calculations based on IEEE P605/D14-08 and ASCE 7-05. The scope of the project involved the replacement of breakers and bus conductors.

National Grid, King Street Substation No. 18 - Groveland, MA (Civil Engineer: 2009)
Mr. Alvarez-Valencia worked on the civil design for the addition of a new 115kV breaker, capacitor voltage transformers (CVT), lighting arrestors, and air-break switches with motor mechanism. The work included detail design of aluminum supports and foundation design, including a complete list of materials for construction.

SPECIALIZED TRAINING

- PLS CADD, PLS-Pole, PLS-Tower
- STAAD
- Microstation
- AutoCAD
- SAP
- MatLab
- ANSYS
- Mathcad
- Microsoft Office
- Visual Basic
- Solid Works
- RISA

PROFESSIONAL AFFILIATIONS

- Associate Member of ASCE, 2009.

CHRISTOPHER HICKEY

EDUCATION
A.A.S., Architectural and Engineering Design, Southern Maine Community College, 2008

AREAS OF EXPERTISE
Mr. Christopher Hickey has technical experience in the following general areas:

- Civil & Structural Design
- Site Layout

REPRESENTATIVE EXPERIENCE
Mr. Hickey recently graduated first in his class from a well-regarded Southern Maine engineering design program. While in attendance, he specialized in AutoCAD programming and customization as well as specific study of civil site design. He has used his expertise to develop tools to facilitate multi-division CADD standardization and quality control measures.

Central Maine Power Co., Maine Power Reliability Program (Designer: 2008-2009)
Mr. Hickey has worked to produce site plans and details for state and federal permitting of this statewide transmission upgrade initiative. This has included road and substation design/grading, open channel storm water control and treatment, and general layout.

Central Maine Power Co., Kibby Wind Project – Bigelow S/S (Designer: 2008-2009)
Mr. Hickey has designed and reviewed structural steel drawings and steel connection details for a new substation in Carrabassett Valley, Maine. The scope of the structures included switch stands, bus supports, and bay structures.

Ventura & Son Stairbuilders, LLC (Designer: 2008)
Mr. Hickey worked with contractors to produce AutoCAD-based shop drawings for curved staircase design. He also generated 3-D models for use in layout, construction, and marketing.

Fifth Generation Woodworks, Inc., (Owner/Operator: 2006 – 2007)
Mr. Hickey developed a custom woodworking business offering high-end shop-built staircases and cabinetry. He specialized in curved millwork and created plan sets and shop drawings using AutoCAD.

Bach Associates, (Craftsman: 2004 – 2005)
Mr. Hickey utilized AutoCAD generated shop drawings for the building industry and woodworking shop.

KEVIN A. VEILLEUX

EDUCATION
Architectural & Civil Drafting, Southern Maine Technical College, 1994

AREAS OF EXPERTISE
Mr. Kevin A. Veilleux has technical experience in the following general areas:

- Civil & Structural Design
- Preliminary & Conceptual Design
- Drafting Services
- Training Instructor
- Spill Prevention, Control & Countermeasure Plans (SPCC)
- Site Layout
- Surveying
- Transmission Line Re-Rating

REPRESENTATIVE EXPERIENCE
Mr. Veilleux has over 15 years of experience and progressive responsibility in the civil engineering field. His qualifications include over 16 years of AutoCAD Platform experience and over 14 years of experience with Autodesk Land Desktop in plan production and civil design. He also has an extensive field survey background that includes performing topographic, hydrographic, as-built, transmission re-rate and construction stakeout surveys. Mr. Veilleux currently serves as Lead Civil Designer for the Civil and Transmission Engineering Division.

Oakfield II 106MW Wind Farm: Oakfield, Maine (Lead Civil Designer: 2009-present)
Mr. Veilleux was involved in the Oakfield II project which included the development of a permit-level design for a 46 turbine, 106MW wind farm located in the forested mountains and hills of Eastern Maine. TRC's scope of work included the civil design of the ridge-top turbine sites, about 20 miles of crane and access roads, 31 miles of 34.5 kV collector system including 2 miles of underground collector, a 34.5 to 115 kV substation, 60 miles of 115 kV transmission system, and site design for the Operation and Maintenance facility. Mr. Veilleux assisted with the access and ridge road design and the project storm water and erosion control management plans.

Central Maine Power Company, Maine Power Reliability Program (Lead Civil Designer: 2008-present)
Mr. Veilleux's responsibilities include coordination and production of Maine DEP stormwater permit plans for five new 345kV Substations and seven major 345kV/115kV substation expansions as part of the $1.5 billion reliability project.

Bangor Hydro Electric Company, Keene Road 345kV Substation - Chester, ME (Lead Civil Designer: 2008-2009)
As Lead Civil Engineer, Mr. Veilleux's responsibilities included civil design and multi-discipline coordination on a new 345kV Substation and 115kV substation expansion & interconnect.

National Grid, Wakefield 345kV Substation - Wakefield, MA - (Lead Civil Designer: 2008-2009)
Mr. Veilleux was responsible for the civil design and multi-discipline coordination on a new 345kV GIS Substation.

Central Maine Power Company, Maguire Road Substation - Kennebunk, ME (Lead Civil Designer: 2007-2008)
Mr. Veilleux's responsibilities included the civil design, field survey and multi-discipline coordination on a new 115kV Substation and major expansions to both an existing 115kV and 345kV Substation.

Bangor Hydro Electric Company, Trenton 115kV Substation - Trenton, ME (Lead Civil Designer: 2007-2008)
Mr. Veilleux's responsibilities include civil design and multi-discipline coordination for a new 115kV Substation as part of the Hancock County Reliability Project.

Public Service of New Hampshire, Saco Valley, White Lake 115kV Substations - (Lead Civil Designer: 2007-2008)
Mr. Veilleux's responsibilities included field surveys, civil design and multi-discipline coordination on a major 115kV substation expansion.

Sprague Energy Corp, SPCC Compliance Program - Portsmouth NH (Lead Civil Designer: 2007-2008)
Mr. Veilleux was responsible for field survey and civil Design of SPCC compliance/certification of spill containment systems at several New Hampshire shipping terminals and bulk fuel storage facilities.

Maritimes & Northeast Pipeline, Phase IV Compressor Station Expansions - Various locations throughout Maine (Lead Civil Designer: 2007-2008)
Mr. Veilleux's responsibilities included coordination and production of Maine DEP stormwater permit plans for seven new compressor stations along the 24 inch natural gas pipeline which runs through Maine.

Nestle Waters North America, Poland Spring Bottling Plant - Kingfield, ME (Lead Civil Designer: 2003-2006)
Mr. Veilleux was responsible for civil/site planning of $60 million bottling plant in Western Maine from concept to construction and multi-discipline coordination with project consultants located in six states. He developed the field surveys and civil designs of approximately 12 miles of spring water pipeline located at facilities throughout Maine.

PETER G. TROTTIER, EI

EDUCATION
B.S., Architectural Engineering Technology, Wentworth Institute of Technology, 1989

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS
Engineering Intern, Massachusetts (#18717)

AREAS OF EXPERTISE
Mr. Peter G. Trottier, EI, has experience in the following general areas:

- Planning Studies
- Preliminary & Conceptual Design
- Construction Specifications
- Detailed Engineering Design
- Spill Prevention, Control & Countermeasure Plans (SPCC)
- Site Layout and Grading
- Licensing & Permitting
- Water Management Permitting

REPRESENTATIVE EXPERIENCE
Mr. Trottier has over 18 years of extensive experience in state and local permitting, site planning/layout, grading, storm water management design, sanitary sewer design, potable water system design and permitting for a number of projects in Maine, Massachusetts, New York and Florida. Mr. Trottier currently serves as Civil Engineer for the Civil and Transmission Division.

Oakfield Wind Power Project Amendment 106MW Wind Farm: Oakfield, ME (Project Engineer: 2009-present)
Mr. Trottier is the lead civil engineer for the Oakfield Wind Power Project Amendment, which includes the development of a permit-level design for a 46 turbine, 106 MW wind farm located in the forested mountains and hills of Northern Maine. TRC's scope of work included the civil design of the ridge-top turbine sites, with approximately 20 miles of crane and access roads, 31 miles of 34.5 kV collector system including two miles of an underground collector, a 34.5 to 115 kV substation, 60 miles of 115 kV transmission system, and site design for the Operation and Maintenance facility. Mr. Trottier completed the pre- and post-development stormwater runoff analysis, designed the stormwater management plan for the project, and assisted with the access and ridge road design and the project erosion control plans.

Oakfield II 110MW Wind Farm, Oakfield, ME (Project Engineer: 2009-2010)
Mr. Trottier was involved in the Oakfield II project included the development of a permit-level design for a 54 turbine, 110 MW wind farm located in the forested mountains and hills of Eastern Maine. Mr. Trottier assisted with the access and ridge road design and the project storm water and erosion control management plans.

Central Maine Power, Maine Power Reliability Program, Transmission and Substation Improvement Project, ME (Project Engineer: 2008-2009)
Mr. Trottier served as the civil engineer responsible for the storm water management design, erosion control and State permitting for the 13 substation sites throughout Maine.

National Grid, Wakefield Junction 345/115 kV GIS Substation, MA (Project Engineer: 2008)
As the civil engineer for this multi-phase project, Mr. Trottier was responsible for the site grading, potable water, sanitary sewer and storm water utility design for the on the Wakefield Junction Substation project.

Florida Power and Light Company, Broward Substation Facility Relocation Feasibility Project - Broward County, FL (Lead Civil Engineer: 2006-2007)
Mr. Trottier served as the lead civil engineer for the substation site planning and transmission line corridor layout for multiple alternatives as part of the feasibility study. He provided state and local permitting research and environmental support for the project.

Fieldstone Landing, LLC, Fieldstone Landing Subdivision Project, Waterville, ME
(Project Manager: 2007-2008)
Mr. Trottier was responsible for the site grading and layout, storm water management design and State and local permitting for the 80 Acre site.

Maritimes & Northeast Pipeline, Phase IV Expansion Project
(Project Engineer 2006-2007)
Responsible for providing the site grading and layout, storm water management design and state permitting for natural gas compression pump stations sites throughout Maine.

Rochester Gas & Electric Corp. (Project Engineer: 2005-2006)
Provided site and storm water management design and erosion control for the expansion of several substations for the Rochester Transmission project located in and around Rochester, New York.

Estuary at Grey Oaks - Collier County, FL (Project Engineer: 2000-2002)
Mr. Trottier was responsible for surface water management master planning, state and local permitting, utility master planning and site grading design for an upscale 360-acre residential community with an 18-hole golf course.

Collier Regional Medical Center - Collier County, FL (Project Manager: 2003-2004)
Mr. Trottier was responsible for the engineering services consisting of state and local permitting, utility master planning, and site grading design for a 60 acre 100 bed hospital campus.

Magnolia Square - Collier County, FL (Project Manager: 2003-2004)
Mr. Trottier was responsible for state and local permitting, utility master planning, and design for an upscale 30-acre site for 240,000 square feet of commercial/retail space.

Veracruz at Cape Marco - Marco Island, FL (Project Manager: 2001-2002)
Mr. Trottier was responsible for surface water management, utility master planning, state and local permitting, and design for a four-acre site with a 23-story high rise condominium building.

PROFESSIONAL AFFILIATIONS

- Member of the American Society of Civil Engineers

TERRENCE J. DEWAN, ASLA
Principal

Terry DeWan has over 35 years of professional experience in landscape architecture, visual resource assessment, site planning, design guidelines, community development. His experience includes work with communities, state agencies, private developers, utility companies, and the forest products industry in New England. He has written numerous studies on community planning, visual impacts, recreation planning, water access, and highway corridor redevelopment.

Maine Licensed Landscape Architect #6

EDUCATION

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

VISTA Training, University of Colorado

Visual Assessment Procedures, University of Southern Maine

PROFESSIONAL EMPLOYMENT

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

PROFESSIONAL AFFILIATIONS

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

SELECTED PROJECT EXPERIENCE

VISUAL IMPACT ASSESSMENT

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

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

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

Stetson I & II Wind Project, Evergreen Wind V, LLC, Washington County, ME. Prepared Visual Impact Assessment including 3D Modeling and photosimulations for a 28 turbine wind project and 17 turbine expansion.

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

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

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

Maine DEP / Visual Assessment Rules.
Consultant to DEP in the formulation of Chapter 315 Regulations: Assessing and Mitigating Impacts to Existing Scenic and Aesthetic Uses. Served on DEP Task Force for the development of the rules.

Hudson Landing, Kingston, NY
A review of the VIA and Development Guidelines for a 1,750-unit community on the Hudson River. Hudson River Heritage.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

SELECTED PUBLICATIONS

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

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

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

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

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

SELECTED PRESENTATIONS

Scenic Inventory Training. Maine State Planning Office. 2009.

Halifax Regional Municipality Planning Presentation. 2008.

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

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

Los Angeles River Plan. American Society of Landscape Architects Annual Meeting. Los Angeles. 1996.
Cleveland Computer Design Charrette. American Society of Landscape Architects Annual Meeting. Cleveland. 1995.

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

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

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

AWARDS AND DISTINCTIONS

Council of Landscape Architects Registration Boards. Presidents Awards

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

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

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

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