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Proposal for Evaluation of the Feasibility of Erecting Regional Wind Energy System within the East Bay of Rhode Island

EAPC Wind Energy Services, LLC

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Proposal for

**Evaluation of the Feasibility of Erecting a Regional Wind
Energy System within the East Bay of Rhode Island**

Response to
'Request for Proposal
from the East Bay
Energy Consortium'

August 31st

2009

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Letter of Introduction & Executive Summary

Members of the East Bay Energy Consortium
Office of Community Development
Bristol Town Hall
10 Court Street
Bristol, Rhode Island

August 31st, 2009

Re: Evaluation of the Feasibility of Erecting a regional wind energy system

Dear Members of the East Bay Energy Consortium,

EAPC Wind Energy Services, LLC (EAPC Wind) is pleased to provide this response to the East Bay Energy Consortium to assist in the development of a plan for siting, funding, and constructing wind turbines.

We have assembled a highly competent team including Pare Corporation (PARE) and Source One to assist the East Bay Energy Consortium. Please consider the advantages of the EAPC Wind team:

- **World Class Wind Energy Experience** - EAPC Wind consultants have been involved in *several hundred* small distributed generation and large utility wind power projects adding up to over 21,000 MW. We are not an engineering firm or finance firm with a single wind analyst. Rather, EAPC was created specifically for providing quality wind energy consulting services and is comprised of consultants, engineers, wind project developers, meteorologists, and finance analysts that have over 80 years combined experience working in the wind industry since the early 1970s. We have been involved in all aspects of the industry from wind feasibility assessment to development to engineering to construction to financing to turbine supply to setting industry standards. We know how to bring projects from beginning to end because we have done it multiple times in multiple structures and have been intimately involved every step of the way. As a result, we understand that a feasibility study completed by this team extends beyond a wind model and a financial spreadsheet to include a complete investigation into the risk and opportunities of a successful and profitable project.
- **Expertise Working With East Bay Towns, Municipalities, and Private Companies** – We firmly believe that all development is local. We have included PARE, a Rhode Island firm that has solved many of the most prominent infrastructure and planning challenges in the state for both public and private clients. PARE brings local knowledge and the benefits of community, regional, and state relationships developed over forty years of project experience, including extensive engineering, planning and permitting experience throughout the East Bay.

- **Superior Wind Modeling Expertise** – Successfully modeling the wind resource is a notoriously difficult and complex process. Features such as buildings and trees can influence a site’s wind resource from long distances and require significant attention in the modeling process. Yet the energy production assessment resulting from the wind model will provide the inputs to financial spreadsheets and ultimately inform early project decisions to move forward or not. In order to reduce uncertainty, our team builds complex wind models that incorporate topographic and environmental features within a minimum radius of 12 miles in all directions. We are the sole North American instructors and distributors in North America of WindPro, the leading wind modeling software in the world. An accurate wind model requires extensive experience and an intimate knowledge of modeling dynamics. The EAPC Wind team can deliver precise models based on decades of wind modeling experience, which serve as the basis for sound financial data and project decisions. It is these precise models combined with our unique “Reverse Engineering” approach to pre-feasibility studies that set us apart from our competitors.
- **Strong Team** – EAPC Wind and Pare Corporation have worked together for several years on projects in Rhode Island and New England. The team has developed a memorandum of understanding to jointly pursue public bids in the state. The team has been augmented with the skills of SourceOne for the organizing, planning, and design of all electrical and interconnection aspects of the feasibility study. SourceOne is a leading power solutions provider managing infrastructure and energy for the nation’s leading real estate owners, municipalities, developers, healthcare organizations, life science, biotechnology and research companies, financial data managers, pharmaceutical manufacturers, and private and public institutions.

Should clarifications be needed to any portion of the attached proposal, please do not hesitate to contact us at any time. We look forward to meeting with you to discuss our qualifications and project approach in greater detail.

Sincerely yours,



Bob Sherwin
Managing Partner
EAPC Wind Energy Services, LLC
PO Box 350 - 256 Farrell Farm Road
Norwich Vermont 05055
Office +1 802 649 1511
Office2 +1 802 649 5288
Email: r.sherwin@eapcwindenergy.com

Project Understanding

Recognizing the need for clean energy alternatives and sustainable community development, the East Bay Energy Consortium (EBEC), which is tasked with championing innovative energy solutions for the benefit of the people of the East Bay region of Rhode Island, is soliciting proposals for wind pre-feasibility and feasibility study. Specifically, the consortium is seeking services for the execution of professional studies that will examine the siting, funding, and construction and operation of wind turbines within the East Bay region.

The East Bay Energy Consortium (EBEC) represents a creative, holistic approach to municipal wind energy solutions, looking creatively not just at where the wind and the users are, but also examining a way in which municipalities can share the rewards as well as the risk, across town boundaries. The EBEC has diligently pursued opportunities for renewable wind resources, working on the municipal level to evaluate potential sites, and on the state level to secure funding for further evaluation. Collaboration with Roger Williams University has strengthened the consortium's efforts.

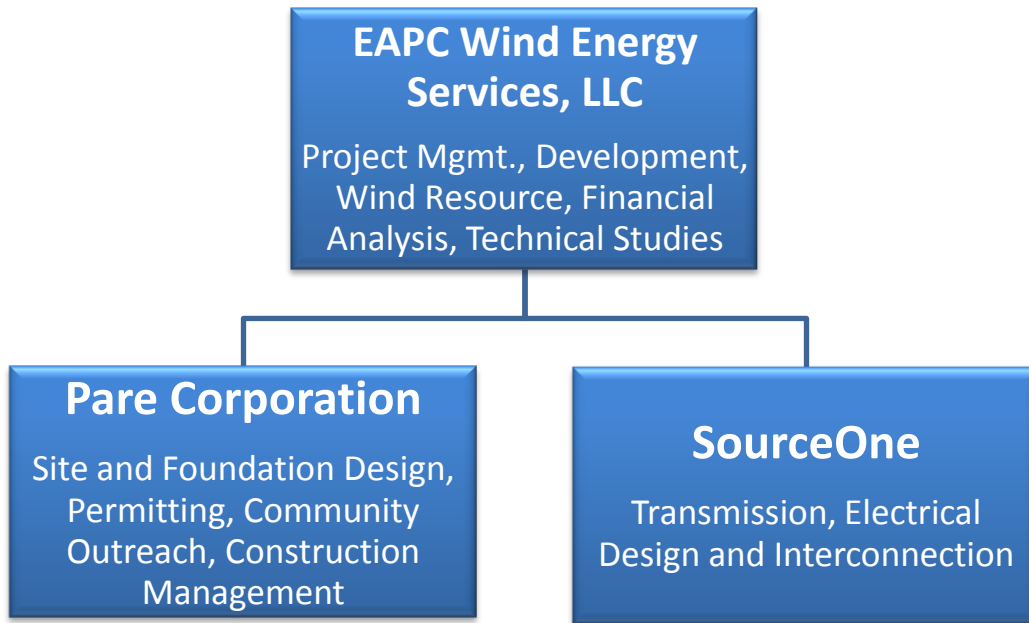
With these factors considered, the purpose of the pre-feasibility and feasibility studies will be to give the consortium the necessary information to determine the practicality of developing sites in the East Bay.

The geology and geography of the East Bay is varied through the region. Having an intimate understanding of the area will help define the potential wind resource opportunities. The many north-south trending hills, remnant of the glacial scouring that marked the creation of the East and West Passages of Narragansett Bay and the Sakonnet River, form the landscape in eastern Rhode Island. Islands including Aquidneck and Prudence, north-south trending peninsulas such as Poppasquash Point, Touisset Point, Rumstick Point, and larger landforms with north-south highpoints such as East Providence, Bristol, Tiverton and Little Compton provide opportunities to "catch" prevailing westerlies.

Many of the western faces of these coastal bluffs and hills are exposed to wide expanses of the bay or rivers, further accentuating the value of the wind resources. This is evidenced in recent developments such as the construction of two Portsmouth wind turbines and additional private turbines that are in the permitting phase. These examples point to the tremendous opportunity the East Bay may hold for wind.

Section 1: Firm Description and Key Personnel

Team Structure



Team Descriptions

EAPC Wind Energy Services, LLC

PO Box 350, 256 Farrell Farm Rd.

Norwich, VT 05055

(802) 649-1511

Main Office: Norwich, VT – 8 full time employees

Two Satellite Offices in Boston and Weymouth, Massachusetts – 2 full time employees

EAPC Wind Energy Services LLC (EAPC) of Norwich Vermont was founded in early 2007 and brings together some of the foremost experts in the wind industry with over 80 years combined experience. Since the early 1970's, EAPC consultants have been involved in making renewable wind energy viable for landowners, universities, municipalities, major corporations, and several countries. The EAPC team understands and is involved in projects from beginning to end, allowing us to perceive challenges and opportunities to wind development from the very beginning. This wide breadth of skills allows the EAPC team to potentially work closely with East Bay throughout the development, construction, contract, and operation phases.

EAPC Wind Energy Services provides:

- *Wind Project Development Feasibility* – these studies including wind resource assessments for both large and small projects including site design, production estimates, and fatal-flaw and constraint studies.
- *Development Consulting and Guidance* - guidance for project developers, universities, municipalities, landowners, and large corporations in developing wind farms.
- *Contract Review and Due Diligence* - consulting to some of the largest financial investment institutions in the wind industry through due diligence and third party engineering work.
- *Finance and Economics* - providing the financial instruments to make educated decisions about projects. EAPC provides instruments for a wide range of financing structures.

EAPC Wind Energy Services LLC is a partnership between Vermont Windpower International of Norwich, Vermont and of EAPC of Grand Forks, North Dakota. EAPC focuses on architecture and planning, interior design, mechanical engineering, electrical engineering, structural engineering, civil engineering, bond issue preparation, construction management services, forensic engineering as well as electrical, civil/structural and mechanical engineering and design, construction management and plant maintenance planning services. The company is rapidly growing with a staff of more than 100 professionals and offices in Grand Forks, Fargo, Bismarck, Minot, and Jamestown, North Dakota and Bemidji, Minnesota.

Wind Project Development Feasibility

Our team believes that a rigorous feasibility study is a vital part of project development. We use a broad set of screening criteria to help our clients identify the most promising project sites. We provide advance warning about concerns that may prove to be fatal flaws. And we deliver a detailed analysis of the wind resource that lenders and investors trust.

Our skills include:

DESKTOP WIND RESOURCE ASSESSMENT

The EAPC team has a particular strength in wind assessment. Several members are considered world class experts in WindPRO, the industry-leading wind assessment software. The reputation of the EAPC team has earned the respect of several major financial institutions which rely on EAPC to ensure bankable wind assessments. As a result,

WindPRO

EAPC is the sole North American distributors of WindPRO, the industry's most comprehensive software package for design and planning of wind farm projects.

We lead a series of WindPRO training workshops throughout North America each year.

the EAPC team has a clear understanding of the quality and rigor of “financeable” wind assessments.

Drawing on a myriad of data sources, our desktop review quickly delivers information about the wind resource available at a proposed project site. We’ve assessed hundreds of potential sites, from an area so large it stretched into three U.S. states to just a single parcel of land. We cast a wide net to collect the best data available, scrutinize its quality, identify key areas of uncertainty, and steer our clients toward the best prospects.

WIND FARM SITING AND OPTIMIZATION

Relying on the results of our geographic, environmental and infrastructure studies, we identify the optimal location for a wind farm. Using WindPRO and the powerful modeling engine WAsP, we site individual turbines within a project area to maximize production and minimize construction costs.

POWER PRODUCTION ESTIMATES

We routinely perform comprehensive estimates of annual power production from wind projects by combining information about the wind resource with turbine power curves.

As part of that process, our loss assessment will spell out how electrical losses, icing, cold temperature shut-down, and a dozen other factors could reduce a wind farm’s production. With on-site wind data in hand, we complete a detailed uncertainty analysis that assigns a probability to different production scenarios, a key piece of information for debt providers concerned with debt coverage ratios.

CONSTRUCTABILITY ANALYSIS

Personnel on the EAPC team have constructed wind projects for nearly three decades, so we have a keen appreciation of the challenges and limitations involved. That’s why we carry out an initial review of terrain, soil type, grade, erosion concerns, and site accessibility for large construction vehicles, a process that could lead to substantial savings during environmental permitting and construction.

METEOROLOGICAL TOWER ERECTION AND SETUP

Our full-time met mast crews operate from offices on the east coast and in the mid west. All year round, they erect monitoring towers, commission data loggers, and carry out routine tower maintenance at sites across North America.

We pinpoint the best location for our towers, configure them with redundant sensors at three different heights, and pull-test our tower’s anchors to ensure they’ll remain immobile. After erection, our staff manages the collection of wind data and compiles a monthly data assessment report for our clients. We monitor the towers weekly to guard against equipment malfunction.

VISUAL SIMULATIONS AND VIDEO AUTOMATION

To gauge the visual impact of a project, we simulate integration of turbines into a viewshed photographically or with video automation. Those tools allow our clients to illustrate the visual impact of a wind power projects.

SHADOW FLICKER, NOISE ANALYSIS, AND ZONE OF VISUAL INFLUENCE STUDIES

Our noise level, shadow flicker, and visual impact studies help developers, communities, and regulators understand a project's potential impact.

Development Consulting and Guidance

Hundreds of new participants join the wind industry each year, from small landowners and project developers to manufacturers and investors. Drawing on more than 80 years of combined staff experience, we help our clients determine their priorities, identify opportunities consistent with their interests, and find a path forward in a quickly changing industry.

For landowners and developers, we deliver reliable and creative guidance through the maze of wind resource assessment, permitting, interconnection, construction, and other considerations. Our clients range from a landowner's association investigating wind projects on rangeland in the West to an internationally-known developer seeking ways to advance a portfolio of projects across the United States and Canada.

Contract Review and Due Diligence

Project lenders and equity participants rely on us as independent engineers and technical experts to monitor project construction. We know the tough technical and financial standards that must be satisfied to obtain wind project financing.

We've drafted and negotiated turbine supply agreements, construction agreements, landowner agreements, and operations and maintenance agreements, drawing upon knowledge that comes only with real-world experience with the complex development process.

Finance and Economics

Our finance team helps clients understand project capital costs and operating costs, financing structures, power pricing, and overall valuation. As state and federal policy and tax incentives change, our detailed economic models keep pace. We match projects in need of funding with investors eager to put their money to work in renewable energy.

Pare Corporation

8 Blackstone Valley Place
Lincoln, RI 02865
(401) 334-4100

Headquarters: Lincoln, Rhode Island – 52 full time employees

Branch Office: Foxboro, Massachusetts – 13 full time employees

Pare Corporation (PARE) is a Rhode Island-based company with significant local knowledge and a broad spectrum of planning, engineering, and environmental permitting capabilities. PARE's expertise includes land use and municipal planning, civil and environmental engineering, transportation and infrastructure engineering, waterfront and coastal engineering, structural and geotechnical/foundation engineering, site planning and design, wetlands and natural resource identification/analysis, and environmental and regulatory permitting. PARE has performed planning studies and site feasibility assessments for a wide variety of public and private facilities throughout Rhode Island. Operating from its headquarters in Lincoln, RI, PARE has been providing expert solutions to the communities of Rhode Island for nearly 40 years.

Many PARE employees are lifelong residents of Rhode Island's East Bay communities, and are very familiar with the area's physical features, municipal and state-owned facilities, infrastructure, and neighborhoods. Their local knowledge will greatly assist the Team in evaluating potential sites for a wind power facility and in coordinating public outreach to assist the EBEC through the use of surveys, public meetings, and workshops.

Additionally, PARE possesses strong geotechnical and structural design experience, including specialized expertise with tower engineering analysis and design. PARE's services relevant to tower engineering have spanned a period of more than 20 years and have involved a variety of specialized structure types. Past projects include long-range air surveillance radar towers for the Federal Aviation Administration (worldwide), as well as structural, geotechnical and site/civil services for electrical transmission towers and power generation facilities throughout New England. The firm's past experience has resulted in the analysis and/or design of new or modified structures with applications to approximately 250 towers at worldwide locations, including towers placed in severe arctic locations and in tropical and high-wind environments. PARE performs state-of-the-art computer analysis and design for a variety of loading criteria to which tower structures are subjected, including wind, ice, seismic and equipment loads. The firm prepares subsequent designs, modifications and specifications accordingly.

Some of PARE's past and present energy-related clients include: NSTAR Electric & Gas Corporation, Narragansett Electric Company, New York Power Authority, Hartford Steam Company, Ohio Edison Company, AES Thames, Inc., Northeast Utilities Service Company, Kamine Cogen, Somerset Power, Dominion Power, PSE&G of New Jersey, Power Recovery Systems, Proto-Power, Ocean State Power, and Calpine Eastern Corporation.

SourceOne, Inc.

132 Canal Street
Boston, MA 02114
(617) 399-6100

Main Office: Boston, MA

Second Office located 7 Penn Plaza, New York, NY

Total Employees- 52

SourceOne was founded and organized to serve the emerging needs of private and public entities associated with utility infrastructure development, renewable energy technologies, traditional energy generation options, carbon and GHG inventory and reduction strategies, electrical and fuel commodity procurement, and utility bill review/processing issues.

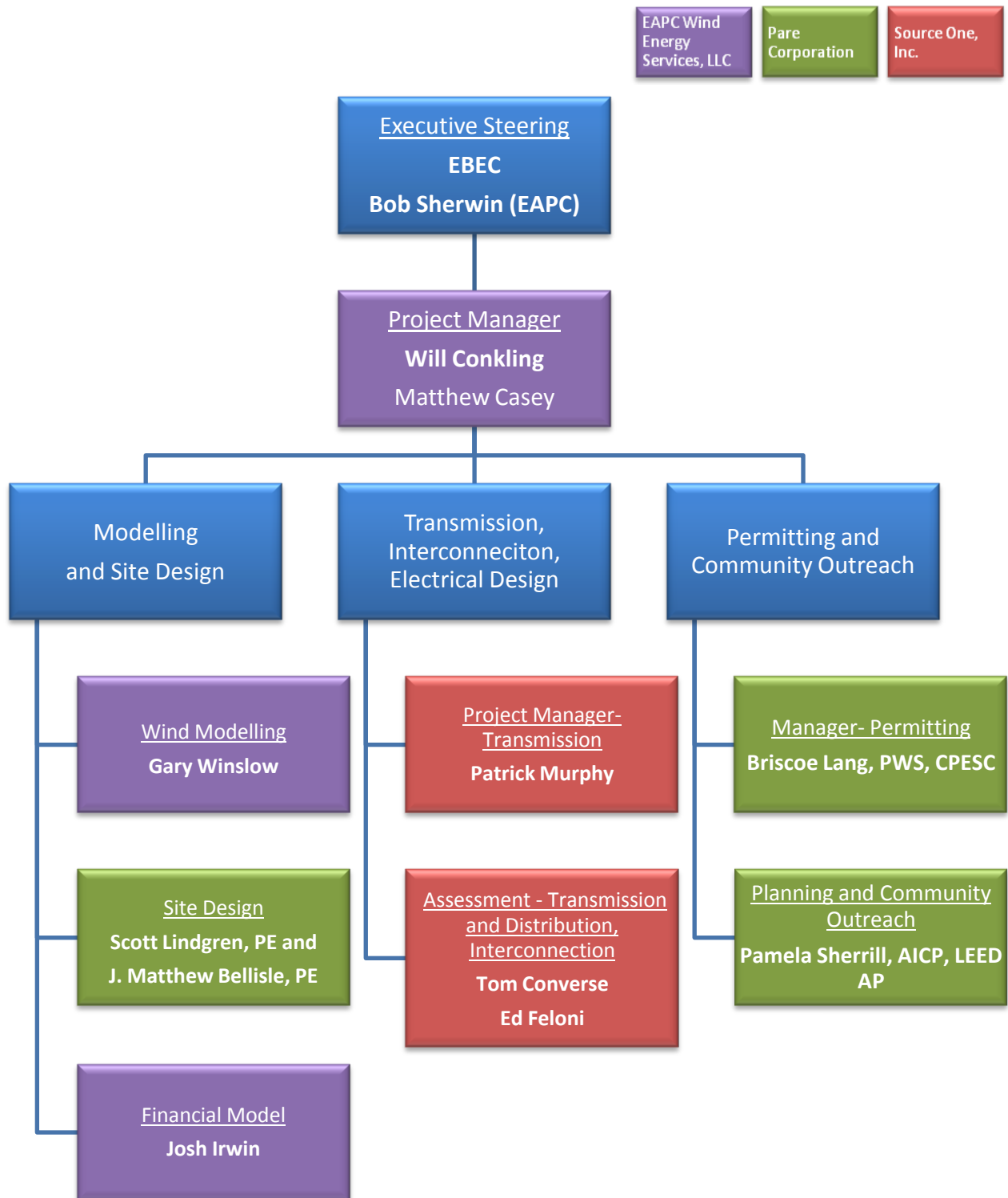
The company was established with the expectation that large entities, would seek expert support and guidance as they navigate the emerging energy marketplace and face on-going issues in regard to maintaining sustainable and economically beneficial energy infrastructures. Some eleven years after the company's founding, SourceOne now serves many of the largest loads in the Northeast and many of the region's most recognizable institutional, biotechnology, healthcare, pharmaceutical, real estate development, commercial and public entities. We have achieved this standing by offering customer centric tools, products, and services with an unwavering desire to deliver significant value.

SourceOne operates two offices located in Boston and New York City with a staff comprised of approximately 50 energy professionals. Veolia Energy, our parent company and the world's largest operator of cogeneration systems, employing some 50,000 employees in 39 countries, acquired SourceOne, Inc. (DE) in the second quarter of 2007. Veolia Energy recognizes the expertise and talents of SourceOne and we will be an integral part of their growth plans for the U.S. market. Since our acquisition, Veolia has purchased Trigen Energy Corporation, and has emerged as the U.S. leader in district energy system operations.

SourceOne has approximately 900 MW of electric commodity and 2 BCF of natural gas procurement in the marketplace. We manage nearly \$500 million of monthly utility billings for our customers and we manage \$750 million of energy infrastructure capital improvements.

Some of SourceOne's customers include: Goldman Sachs, Morgan Stanley, City of Boston, CCEDA, State of Connecticut, City of Hartford, City of New Haven, Biogen Idec, Genzyme, Boston Scientific, EMD Serono, Novartis, Merck & Co., Millennium Pharmaceuticals, Analog Devices, EMC, New York University, Yale University, Children's Hospital Boston, Boston Medical Center, Brigham & Women's Hospital, Harvard Institute of Medicine, The Town of Belmont, The Town of Hingham, Beth Israel Deaconess Medical Center, Sun Microsystems, ZOLL Medical, Boston Properties, Equity Residential, New England Development, St. Paul Travelers, Phoenix Insurance, Vornado Realty Trust, SL Green, Taconic Investments, The Durst Organization, Northland Investment Corporation, etc.

Team Management Structure and Experience



EAPC Wind Energy Services, LLC

Robert Sherwin, Managing Partner

In 1973, Robert started one of the first commercially viable wind turbine companies from his barn in Vermont. From there, Enertech became one of the largest wind turbine companies in the world for ten years. Its turbines were installed from China to California to Alaska. Robert later founded and led Atlantic Orient Corporation. He has been involved with both the European and American wind energy associations and has helped set the vision for the wind industry from its earliest days. Over the last 35 years, Robert has helped shape industry standards around the world, consulted for some of the largest project developers, built numerous wind farms, and worked with several of the largest financial institution in the nation. He brings a rich background spanning all aspects of the industry, with particular expertise in technical analysis, contract review, strategic consulting, and business growth. Robert holds a Bachelor of Arts Degree from Dartmouth (1967) and a Masters Degree from the University of Arizona (1970).

Gary Winslow, Senior Project Engineer

Gary Winslow is a senior project engineer for EAPC Wind Energy Services and has been active in the wind energy industry since 2001. Gary's expertise in the wind industry is in wind resource assessment and technical due diligence. He has managed the installation of residential and utility scale wind turbines, performed meteorological tower due diligence, analyzed wind data, performed numerous feasibility studies, and completed countless wind resource assessments. In addition, Gary has also created wind resource maps, optimized turbine layouts, and acted as an independent engineer for equity investors.

In addition to project management, Gary also manages the engineering and field services groups. The group provides expertise in wind resource assessment (using WindPRO and WAsP) and the technical aspects of the wind industry including technology reviews, wind turbine standards, preliminary balance of plant design, and balance of plant construction monitoring. Gary received a bachelor's degree in Civil Engineering from the University of New Hampshire in 1994.

Matthew Casey, Senior Development Engineer

Matthew Casey is senior development engineer for EAPC Wind and focuses on project development management and development strategy for clients. Matthew has over four years experience in the wind industry in both project development and construction. Matthew spent over a year in project development New York where he successfully added several thousand acres of land while managing environmental and interconnection process requirements. Matthew has also spent over a year working as an apprentice and assistant project manager in the construction of four wind farms in Western Texas -- Sand Bluff (Gamesa), Forrest Creek (Siemens), Roscoe (Mitsubishi), and Champion (Siemens). Matthew received a B.S. in Mechanical Engineering from Bradley University in 2000 and a M.A. in Sociology from University of Chicago in 2005.

Will Conkling, Business and Development Specialist

Will Conkling is a Business and Development Specialist for EAPC Wind Energy Services and focuses on project management, development services, management and strategy services, and distributed generation. Will has over three years experience in the wind industry in project development and development consulting. Will spent three years as a Project Developer at Citizens Energy Corporation's wind development division, focusing his efforts on developing projects in New York, Quebec, Ontario, South Dakota, Arizona, and the Northeastern US. While with Citizens Will's duties included site identification and evaluation, site acquisition, wind resource assessment, permitting, design/layout, and financial analysis. Additionally, Will provided development consulting services on Citizens Energy's behalf to Petroleos de Venezuela for a 100 MW project planned by the Venezuelan government on Margarita Island. Mr. Conkling received a B.A. in Government and Latin American Studies from Wesleyan University in 2005.

Josh Irwin, Senior Business Analyst

Josh Irwin focuses on corporate strategy for development clients, including project acquisition and sale; project valuation and finance; power pricing and REC markets; and analysis of renewable energy markets. Previously, Josh was an analyst in the New Business group at enXco, an Électricité de France company. There he helped a well-established wind development firm expand into solar and other renewable energy technology. For several years before that, he held senior leadership positions with organizations focused on the political and policy aspects of renewable energy development. He graduated summa cum laude from Middlebury in 1998, and earned his MBA from Yale in 2008.

Pare Corporation

Pam Sherrill, AICP, LEED AP, Principal Planner

Pam Sherrill is PARE's principal planner for municipal and transportation projects. She is a specialist in transportation planning and permitting for infrastructure and natural resource management projects. She has conducted public participation programs, maintained federal and state agency coordination, and addressed land use analysis, visual assessment, cultural resource impacts, hazardous waste assessments, and compliance with municipal and regional plans. She serves on the Board of Directors for Grow Smart RI and the Rhode Island Chapter of the American Planning Association. She received the RIAPA Distinguished Service Award in 2008, and she is past president of the Rhode Island Chapter of the Women's Transportation Seminar and past chairman of the Rhode Island Society of Environmental Professionals. She graduated from the University of Massachusetts Amherst in 1974 with a Bachelor of Science in Environmental Design.

Matt Bellisle, P.E., Vice President

Matt Bellisle manages PARE's geotechnical engineering division. He possesses more than 15 years of experience working on a variety of geotechnical, foundation, civil, and dam engineering projects. He has acted as principal-in-charge, project manager, and project engineer for assignments involving geotechnical design, site investigations, testing, instrumentation, and construction monitoring. He has worked on geotechnical engineering assignments from Maine to Maryland, including numerous power generation projects. He is a Registered Professional Engineer in the States of Rhode Island, Massachusetts, and New Hampshire. He received a Bachelor of Science in Civil Engineering and a Masters of Science in Civil & Environmental Engineering from the University of Rhode Island.

Briscoe Lang, PWS, CPESC, Principal Environmental Scientist

Briscoe Lang is an environmental specialist with over 20 years of experience applying environmental science disciplines to the planning, design, permitting and implementation of infrastructure and land development projects in Southern New England. He has performed more than 100 wetland identification and delineation projects on sites ranging in size from less than an acre to several hundred acres. His capabilities include feasibility studies and project planning; environmental impact, avoidance, minimization, alternative analyses and wetland mitigation design; appeals and enforcement actions; erosion and sediment control planning and implementation; construction monitoring; wetland delineations and reviews; GIS mapping; and reports and permit applications for highway, utility, commercial, and residential projects, both coastal and inland (including RICRMC). He is a licensed Professional Wetland Scientist and holds a Bachelor of Science in Earth Science from Southern Connecticut State University.

Scott Lindgren, P.E., LEED AP, Managing Engineer

Scott Lindgren manages many of PARE's largest site/civil engineering projects. He has been involved in the planning, design, permitting, and project management of land development and site engineering

projects located throughout New England. His experience includes development of master and schematic design plans; procurement of local, state and federal permits; roadway, parking, and circulation design; utility design; hydrology and hydraulic engineering design; stormwater management; and construction administration. He is a Registered Professional Engineer in the States of Rhode Island and Massachusetts, is a LEED-Accredited Professional, and holds a Bachelor of Science in Civil Engineering from the University of Massachusetts Dartmouth.

Source One

Tom Converse P.E., Vice President

Tom Converse is a Vice President for SourceOne and is responsible for running the Boston Office. With over 30 years of experience, he is well versed in all aspects of public and private utilities. His experience includes all areas of utility transmission, power distribution, substation design, system protection, meter data management and metering. He has testified at technical hearings before numerous State Public Utility Commissions, and has served as an expert witness in rate and tariff matters on private utility cases. On transmission systems, his experience includes conceptual layout, budgetary planning, development and construction of projects from 600 to 345 kV. He is a licensed Professional Engineer and holds a Bachelor of Science in Electrical Engineering from Northeastern University.

Patrick Murphy, Operations Manager

Pat Murphy is responsible for running the SourceOne Operations Department. With 12 years of experience in the electrical industry, his background includes running the Substation Operations Group for National Grid. Pat has worked on distribution equipment upgrades, HV & LV substation maintenance, infrastructure audits, one line development and new installation project management. Mr. Murphy holds a Bachelor of Science in Electrical Engineering from Clarkson University and is a candidate for a Masters in Business Administration from Syracuse University.

Ed Feloni P.E., Principle

Mr. Feloni is a principal engineer specializing in the design of, and modifications to, transmission and distribution substations and underground & overhead circuits. His system distribution projects include system conversions, circuit extensions and analysis, power factor correction, relay settings and fuse coordination. He has extensive experience in the design, operation and installation of high voltage distribution and substation systems. He has provided design and construction supervision for cable crossings, for railways, bridges, rivers, interstate and local highways, secondary roads, wetlands, and private developments. Mr. Feloni is a Professional Engineer licensed in the State of Rhode Island, and holds a Bachelor of Science degree from Northeastern University.

Section 2: Relevant Experience

Team Experience

EAPC Wind Experience – Partial List

EAPC Wind has extensive experience in delivering feasibility studies to a variety of clients. Our reports have received accolades for their level of detail, legibility, and preciseness. A large number of our clients have to remain confidential, however, EAPC Wind would be happy to explore any projects in more detail as requested. In addition to this partial list, some case samples are also provided in the next section.

In the partial list below, “Due Diligence” and “Wind Technology Assessment” refers to work in which EAPC Wind Consultants have provided technical and/or wind resource reviews of wind projects on behalf of major financial institutions or investors. Typically, these institutions have hired EAPC Wind Consultants to ensure the developer or wind turbine supplier provides a high-quality product.

“Wind Development” work involves wind resource assessments and development support. Each developer has certain in-house strengths – in many of these cases EAPC Consultants have filled in the expertise gaps along the development process. EAPC Consultants have provided everything from wind resource assessments to fatal flaw studies to FAA permits to contract drafting and review.

MW	Project Description	Location	State
357	Due Diligence	Confidential	NY
280	Due Diligence	Confidential	NY
224	Due Diligence	Confidential	OR
206	Due Diligence	Confidential	MN
200	Due Diligence	Confidential	WA
161	Due Diligence	Confidential	TX
150	Due Diligence	Confidential	KS
150	Due Diligence	Confidential	MN, SD
150	Due Diligence	Confidential	IL
131	Due Diligence	Confidential	IN
116	Due Diligence	Confidential	NY
101	Due Diligence	Confidential	OR/TX
99	Due Diligence	Confidential	Germany

80	Due Diligence	Confidential	IA
75	Due Diligence	Confidential	CO
63	Due Diligence	Confidential	TX
50	Due Diligence	Confidential	CA
45	Due Diligence	Confidential	NY
35	Due Diligence	Confidential	PA
11	Due Diligence	Confidential	Portugal
11	Due Diligence	Confidential	Brazil
**	Due Diligence	Confidential	MN
**	Due Diligence	Confidential	Ontario
**	Due Diligence	Confidential	PA/IL
**	Due Diligence	Confidential	CA
**	Due Diligence	Confidential	NY
**	Due Diligence	Confidential	
**	Due Diligence	Confidential	TX
**	Due Diligence	Confidential	Brazil
**	Due Diligence	Confidential	TX
**	Due Diligence	Confidential	NY
2,691	Subtotal, Due Diligence		
2,000	Wind Development	Hartland	ND
900	Wind Development	Emmons County	ND
500	Wind Development	Mistissini	QB
450	Wind Development	Delaware	NJ
375	Wind Development	Center	ND
370	Wind Development	Napoleon	ND
235	Wind Development	Martinsdale	MT
216	Wind Development	Abingdon	IL
200	Wind Development	Clanwilliam	MB
200	Wind Development	Eagle Butte	SD
200	Wind Development	Langdon	ND

200	Wind Development	Notre Dame	MB
200	Wind Development	Valley City	ND
200	Wind Development	Hays	HKS
200	Wind Development	Laramie County	WY
165	Wind Development	Geary	KS
160	Wind Development	Estherville	IA
150	Wind Development	Finley	ND
150	Wind Development	Lake Shetek	MN
150	Wind Development	Luverne	ND
150	Wind Development	Rock Island	WA
150	Wind Development	Rugby	ND
150	Wind Development	Solano County	CA
150	Wind Development	Stanley	ND
150	Wind Development	Swift Current	Saskatchewan
150	Wind Development	Wishek	ND
130	Wind Development	Jeffers	MN
126	Wind Development	Churchill Falls	Newfoundland
120	Wind Development	Eustis	ME
102	Wind Development	SE Colorado	CO
101	Wind Development	Cavalier County	ND
101	Wind Development	Kimball	MN
101	Wind Development	MW Trimont	MN
100	Wind Development	Albion	NY
100	Wind Development	Almont	ND
100	Wind Development	Baker	MT
100	Wind Development	Benedict	ND
100	Wind Development	Bolivar	MS
100	Wind Development	Crow Lake	SD
100	Wind Development	Devils Lake	ND
100	Wind Development	Dogden Butte	ND
100	Wind Development	Killdeer	ND
100	Wind Development	Kiskatinaw	BC
100	Wind Development	Margarita Island	Venezuela
100	Wind Development	Minnedosa	MB
100	Wind Development	Minot	ND
100	Wind Development	Reston	MB
100	Wind Development	Rolla	ND

100	Wind Development	Rollette	ND
100	Wind Development	Ruso	ND
100	Wind Development	Smokey Hills	KS
100	Wind Development	Spiritwood	ND
100	Wind Development	Swan Lake	MB
100	Wind Development	Tiro	OH
100	Wind Development	Trimont	MN
100	Wind Development	Walsenburg	CO
99	Wind Development	St. Leon	Manitoba
99	Wind Development	SW Nebraska	NE
99	Wind Development	W Kansas	KS
98	Wind Development	Cedar ridge	WI
75	Wind Development	Central NE	NE
75	Wind Development	Rockridge	IL
72	Wind Development	Enning	SD
60	Wind Development	Edgeley & Kulm	ND
50	Wind Development	Bickleton	WA
50	Wind Development	Erie County	PA
50	Wind Development	Goodland	KS
50	Wind Development	Jeffers	MN
50	Wind Development	Morgan	MN
50	Wind Development	Rhame	ND
50	Wind Development	San Diego	CA
50	Wind Development	Stony Creek	PA
50	Wind Development	Watertown	SD
50	Wind Development	Wauneta	CO
50	Wind Development	Amboy	MN
50	Wind Development	Northeastern NM	NM
50	Wind Development	SE Colorado	CO
50	Wind Development	South Dakota	SD
45	Wind Development	Prattsburg	NY
40	Wind Development	Central NE	NE
40	Wind Development	Hyde County	SD
30	Wind Development	Amherst	Nova Scotia
30	Wind Development	Kaheawa	HI
30	Wind Development	Lake Desolation	NY
24	Wind Development	Martinsdale	MT

21	Wind Development	Chokio	MN
21	Wind Development	Danvers	MN
21	Wind Development	Garvin	MN
20	Wind Development	Worthington	MN
18	Wind Development	Gwinner	ND
17	Wind Development	Sibley	MN
13	Wind Development	Morgan	MN
12	Wind Development	Velva	ND
11	Wind Development	Hagerman	ID
11	Wind Development	Hawaii Island	HI
11	Wind Development	Almont	ND
10	Wind Development	Baja	Mexico
10	Wind Development	Chandler	MN
10	Wind Development	Martinsville	WI
8	Wind Development	Jamestown	ND
7	Wind Development	Springfield	MN
6	Wind Development	Henry County	IL
6	Wind Development	Tracy	MN
5	Wind Development	Lake Wilson	MN
5	Wind Development	Tyler	MN
5	Wind Development	Charleston	IL
4	Wind Development	Willmar	MN
3	Wind Development	Southern MN	MN
3	Wind Development	Tiskilwa	IL
2	Wind Development	Cumberland	RI
2	Wind Development	Deer Grove	IL
2	Wind Development	Schodack	NY
50	Wind Development	Hartsville	NY
54	Wind Development and Wind Turbine Installation	Mont Copper	Quebec
54	Wind Development and Wind Turbine Installation	Mont Miller	Quebec
40	Wind Development and Wind Turbine Installation	Munnsville	NY
0.05	Wind Development and Wind Turbine Installation	Calverton	NY
13,272	Subtotal, Wind Development		

<u>2,325</u>	<u>Site Assessment</u>	<u>Tri-State ND, SD, MN</u>	<u>SD</u>
243	Environmental	Horicon Marsh	WI
183	Environmental	Bellefontaine	OH
150	Environmental	Shilo	CA
100	Environmental	Stockton	WI
9	Environmental	Martinsville	WI
8	Environmental	New Holstien	WI
5	Environmental	Westby	WI
N/A	Technology Evaluation	Allegheny I and GSG Wind	PA/IL
N/A	Technology Evaluation	Clipper 2.5MW Turbine	
N/A	Technology Evaluation	Fuhrlander Turbines	
N/A	Technology Evaluation	DeWind 8.2 Wind Turbine	
N/A	Technology Evaluation	RePower Systems 2MW Turbine	
5	Wind Turbine Installation	Champaign	IL
5	Wind Turbine Installation	Mattoon	IL
3	Wind Turbine Installation	Fargo	ND
2	Wind Turbine Installation	Mattoon	IL
2	Wind Turbine Installation	Mercer County	IL
2	Wind Turbine Installation	Minot	ND
2	Wind Turbine Installation	Prior Lake	MN
1	Wind Turbine Installation	Oriska Hills	ND
1	Wind Turbine Installation	Petersburg	ND
1	Wind Turbine Installation	Southern Minnesota	MN
1	Wind Turbine Installation	Spirit Lake	IA
1	Wind Turbine Installation	Manlius	IL
0.01	Wind Turbine Installation	Brookhaven	NY
91	Wind Turbine Operation & Maintenance	Manuwatu Range	New Zealand
91	Wind Turbine Operation & Maintenance	Yorke Penninsula	Australia
89	Wind Turbine Operation & Maintenance	Geraldton	Australia
79	Wind Turbine Operation & Maintenance	Cervantes	Australia
35	Wind Turbine Operation & Maintenance	Challicum Hills	Australia

20	Wind Turbine Operation & Maintenance	Yambuk	Australia
<u>1,882</u>	<u>Subtotal, Other Services</u>		
21,000+	Grand Total of Partial List		

HIGHLAND CORPORATE PARK, CUMBERLAND, RI

In March 2008, EAPC Wind and PARE Corporation provided The Economic Foundation of Rhode Island a preliminary feasibility study to determine if a wind project located within the corporate park would be feasible.

The results from the study provided The Foundation with key data necessary to make educated decisions about the viability of a wind project according to their needs and goals.

The feasibility study included a fatal flaw analysis, wind resource assessment, zoning and permitting reviews, and a financial model. EAPC Wind performed fatal flaw study using GIS software to review the site for potential fatal flaws and to establish a buildable area where wind turbines could be placed. The study included reviewing wetlands, nearby airports, microwave interference, transportation/constructability constraints, environmentally sensitive areas, zoning regulations, and other exclusion areas.

The second part of the study was a wind resource assessment. To match the wind turbine size to the local businesses, EAPC Wind and The Foundation gathered actual electricity consumption data for

those businesses interested in participating. EAPC Wind modeled the predicted wind resource and potential energy production figures for three different wind turbine models, at three different locations within the park.

At the completion of the initial feasibility study, EAPC Wind applied for an FAA determination to see if several wind turbine locations throughout the park would affect air traffic, receiving “No Hazard” findings for each site in July 2008.

Finally, EAPC Wind ran an economic model tailored to The Foundation’s needs and goals.



Buildable Area Analysis (yellow).

Client

The Economic Foundation of Rhode Island
Scott Gibbs, President
1300 Highland Corporate Drive, Suite 202
Cumberland, RI 02864
Tel: 401-658-1050

EAPC Wind Services Provided

- Wind Feasibility Study
- Fatal Flaw Study
- Wind Resource Assessment
- Economic Analysis

Key

Achievements

- Foundation was able to make informed decisions about potential project
- Reviewed potential fatal flaws and established buildable area for wind turbines
- Utilized actual electricity consumption data for wind turbine models
- Provided project economics for potential project

HIGHLAND CORPORATE PARK, CUMBERLAND, RI

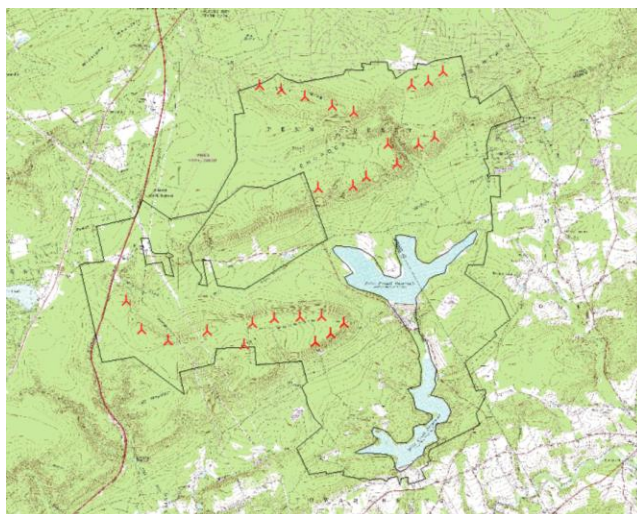
In May 2009, EAPC Wind provided Delsea Energy, LLC with a feasibility study for a project with over 12,323 acres of land. The feasibility study included a fatal flaw analysis, wind resource assessment, and a financial model.

EAPC Wind performed a fatal flaw study using GIS software to review the site for potential fatal flaws. The study included reviewing wetlands, nearby airports, microwave interference, transportation/constructability constraints, environmentally sensitive areas, zoning regulations, and other exclusion areas. To determine where turbines could be placed, a buildable area was established excluding a state forest and the Penn Forest Reservoir, both removing a significant amount of land.

In addition to the initial 'fatal flaw' study, EAPC Wind modeled the predicted wind resource and

potential energy production figures for five different wind turbine models. With such a big area and various wind speeds, EAPC Wind worked with the client to focus on three ridgelines with the best wind within the buildable area. In this process only the two best performing turbines were modeled to produce energy production figures. EAPC Wind ran each of the three areas separately as their own project to calculate production numbers. This was so the client could see which area(s) they should focus on and start with first. With EAPC Wind later ran an economic model detailing the predicted return on investment the client would expect to see.

Delsea Energy, LLC was able to make an educated decision on whether to move forward with an on-site wind measurement program.



Preliminary turbine layout

Client

Delsea Energy, LLC
John Renz,
Vice President –
Business Development
10 Allen Street, Suite 1-A
Toms River, NJ 08753
Tel: 732.240.3883

EAPC Wind Services Provided

- **Wind Feasibility Study**
- **Fatal Flaw Study**
- **Wind Resource Assessment**
- **Economic Analysis**
- **Marketing services: potential customers served and avoided pollution.**

Key Achievements

- **Equipped client with information required to make go/no-go decision.**
- **Identified optimal wind turbine model and layout for site**
- **Provided project economics for potential project**

Project Completion

May 2009,
ongoing work

DUE DILIGENCE, 3 MW WIND PROJECT, RHODE ISLAND

In January 2009, a major U.S. bank asked EAPC Wind to carry out technical and economic due diligence of a wind project seeking construction and long-term debt financing. That work began with a comprehensive review of the wind resource and project site information submitted to the bank by the project developer.

After reviewing that data and identifying possible issues of concern, EAPC Wind created its own WindPRO-based wind resource model of the project site.

The resulting energy yield assessment, which incorporated a comprehensive assessment of production losses, provided a more reliable capacity factor for the project.

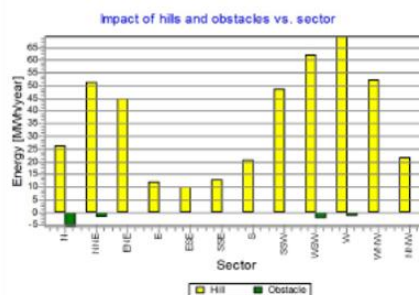
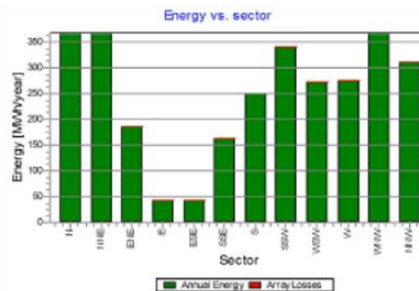
In addition, EAPC Wind experts generated an uncertainty analysis to help the bank understand how the project would fare in “low wind” years. That work played a critical role in helping the bank determine how to size a loan that would ensure the project could meet its debt service obligations.

In the second phase of project due diligence, EAPC wind scrutinized the project’s capital and operating costs, dissected the developer’s

economic model line by line, and verified that all policy and tax-related incentives were captured and treated accurately.

Further, the economic model underwent a series of stress tests, in which key assumptions were modified, all with an eye toward verifying the project’s ability to support debt.

Ultimately, EAPC Wind recommended moving ahead with the loan, but suggested additional protections for the bank, including the creation of reserves for operating and debt service.



Sample WindPRO report illustrating how energy production varies by sector.

EAPC Wind Services Provided

- Detailed Wind Resource Assessment
- Detailed Economic Assessment

Key Achievements

- Identified weaknesses in wind data submitted to bank and created own model to verify energy assessments.
- Scrutinized capital and operating costs, as well as treatment of policy and tax-related incentives.
- “Stress-tested” economic model to gauge project’s ability support debt.
- Recommended creation of reserves with specific amounts to ensure project could satisfy debt obligations.

SITE LAYOUT & ENERGY PRODUCTION, PRINCETON, MA

In August of 2007, EAPC Wind was engaged by Lumus Construction to provide an assessment of a wind energy project site located in Princeton, Massachusetts and owned by Princeton Municipal Light District (PMLD).

Wind turbines have existed on the site for more than 20 years and PMLD decided that it was time to replace the original four 40 kW wind turbines with two, large Furhlaender 1.5 MW wind turbines.

Lumus Construction won the

contract to construct the two turbines and, upon gaining knowledge of the site terrain, engaged EAPC Wind to assess alternate locations for one of the two wind turbines.

To complete the study, EAPC Wind created a model of the site and estimated the annual energy production for five different turbine locations.

It was determined that Alternative Site 4 (shown below) was the most favorable when considering energy production, turbulence, and constructability.



Client

Lumus Construction

EAPC Wind Services Provided

- Prepared a wind resource model of site
- Incorporated on-site time series wind data
- Assessed four possible locations for the southern wind turbine

Key Achievements

- Recommended the most favorable site for the southern wind turbine

Project Completion

Study completed in September, 2007

(Installation and commissioning of the wind turbines is planned for the fall of 2009)

Pare Experience

PARE has provided engineering and planning services for most of the East bay municipalities over the past nearly 40 years. In addition, PARE has completed projects for other clients such as the Rhode Island Department of Transportation, the Rhode Island Department of Environmental Management, the Aquidneck Island Planning Commission, and many private entities. Below is a listing of some of the projects with which PARE has been involved, illustrating their familiarity with the local area.

Municipal Projects	Projects for Other Clients
EAST PROVIDENCE	
<ul style="list-style-type: none"> • Warren Avenue Revitalization • Water Distribution System Improvement • Proposed Dunkin Donuts Traffic Impact Study • WSSMP 5-Year Update • TIF Consultant (sub to Ninigret Partners) • Water Supply Dam Inspection • Turner Pond Dam Insp • Hunt's Mills Site Design (sub to Bradford Associates) 	<ul style="list-style-type: none"> • Traffic Impact Analysis, Bradley Hospital • South Berth Bulkhead Repairs & Monitoring, ExxonMobil • Site improvements, tank relocations, pier repairs, etc., Capital Terminal Company • South Quay development, P&W Railroad • Rumford Center Mixed-Use Development, The Peregrine Group • Coastal Medical Site Design, The Peregrine Group • East Bay Bike Path, RIDOT
<ul style="list-style-type: none"> • BARRINGTON 	
<ul style="list-style-type: none"> • Town Hall Parking & Traffic Circulation Study • Housing-Land Use Planning Study • Hampden Meadows School Safe Routes to School • DPW Garage SPCC Plan Update • Public Safety Complex SPCC Plan Update • Landfills 3 & 4 Site Investigation Work Plan 	<ul style="list-style-type: none"> • Montessori Ctr Expansion Traffic Review, Ramona Skelly • Central Bridge Final Design, RIDOT • East Bay Bike Path, RIDOT
<ul style="list-style-type: none"> • WARREN 	
<ul style="list-style-type: none"> • Public Works Garage Addition • Franklin St. Catch Basin Repairs • Bike Path Design • Town Beach/Belcher Cove Drainage Study 	<ul style="list-style-type: none"> • Seawall Inspection, Alternatives Analysis, & Design of Repairs, MMF Realty, LLC • Phase I ESA Update, Harbor Marine Corporation

Municipal Projects	Projects for Other Clients
<ul style="list-style-type: none"> • On-Call Engineering Services • Main Street and Market Street Streetscape Improvements • Seymour Street Improvements • Serpentine Road Drainage Improvements • Town Hall Tower Inspection • Kickemuit Reservoir Drainage • Town Fishing Pier 	<ul style="list-style-type: none"> • Emergency Permit for Dredging, Rent-a-Cruise • East Bay Bike Path, RIDOT
<ul style="list-style-type: none"> • BRISTOL 	
<ul style="list-style-type: none"> • Viking Village Drainage Improvements • Consulting services to the Bristol Planning Board • Downtown Traffic Study • Metacom Ave Corridor Management Plan • Chestnut Street Improvements • Golf Course Subdivision Feas. Study 	<ul style="list-style-type: none"> • Water System Study & Hydraulic Model, Bristol County Water Authority • Mt. Hope Bridge Const. Reviews, Cianbro • Robin Rug Mill Conversion, J.W. Roiter • Colt State Park Lighting Design, RIDOT • Dock Design, Paul C. Nicholson, Jr. • East Bay Bike Path, RIDOT
<ul style="list-style-type: none"> • PORTSMOUTH 	
<ul style="list-style-type: none"> • Land Use Evaluation • Zoning Board of Review, Bristol Ferry Wharf • Assisted Living Complex Review • Evaluation Of Land Use Lots 14 & 15 • Stormwater / Drainage - Benedict Ave., Harrington Ave. • Wave Fence at Sand Point Pier • Portsmouth Gateway Project • Portsmouth Wastewater Treatment Facility • Wave Fence for Sand Point Ferry Pier, Prudence Island • Wicks Farm Subdivision Review • Melville Ponds Restoration • Landfill Site Remedial Actions Review 	<ul style="list-style-type: none"> • West Side Transportation Guide Plan, Aquidneck Island Planning Commission (AIPC) • West Side Master Plan, AIPC • Weaver Cove Marina Development, Weaver Cove, LLC • Shoreline Drive Gateways Feasibility, Aquidneck Island Planning Commission • Multiple projects for Mt. Hope Maritime Terminal • Hog Island Ferry Pier Inspections, Hog Island, Inc. • Water System Engineering Projects, Portsmouth Water & Fire District • Prudence Island T-Pier Improvements, RIDEM • Prudence Island, Sand Point Ferry Pier, RIPTA

Municipal Projects	Projects for Other Clients
	<ul style="list-style-type: none"> • Marina Pump-Out Permit, Hinckley Yacht Services • Water System Master Plan and System Improvements, Prudence Island Utilities Corporation
<ul style="list-style-type: none"> • MIDDLETOWN 	
<ul style="list-style-type: none"> • Development Plan Reviews <ul style="list-style-type: none"> ○ 62-Unit Age-Restricted Housing Development Impact Review ○ Subdivision Impact Analysis Reviews ○ Hotel Development Impact Analysis Reviews ○ Review of 48-Unit Hotel Expansion Development Impact Statement • Corporate Build-out Analysis • Buck Road Extension Traffic Study • Maidford River Bank Stabilization • Prospect Ave. Bridge Evaluation • Office Park Zoning Amendment Analysis 	<ul style="list-style-type: none"> • West Side Transportation Guide Plan, AIPC • West Side Master Plan, AIPC • Site Feasibility Study, Economic Development Found. of RI • Omni Street Subdivision Review, Omni Land Company • Wetlands delineation for proposed Village Mall, The CW Companies, Inc.
<ul style="list-style-type: none"> • NEWPORT 	
<ul style="list-style-type: none"> • Soundings at Fort Adams • Patriots Park Improvements • Van Zandt Pier Restoration • Lawton Valley Water Treatment Plant Sedimentation Basin Repair 	<ul style="list-style-type: none"> • West Side Transportation Guide Plan, AIPC • West Side Master Plan, AIPC • Pier 9 and L-Dock, RIDEM • Newport Harbor Waterfront Access, Coastal Resources Center • Newport Intermodal Marine Terminals, RIDOT • Touro Synagogue Drainage Improvements, Touro Synagogue Foundation • Various structural projects at the Newport Navy Base, U.S. Navy
<ul style="list-style-type: none"> • TIVERTON 	
<ul style="list-style-type: none"> • Education Facilities Comprehensive Study 	<ul style="list-style-type: none"> • Bourne Mill Mixed-Use Development, The Armory Revival

Municipal Projects	Projects for Other Clients
<ul style="list-style-type: none"> • Elementary Schools Renovations • New Elementary School Design • Municipal Landfill Engineering Services 	<p>Co. and E.A. Fish Assoc.</p> <ul style="list-style-type: none"> • Pier and Dolphin Repairs, Inland Fuel
<ul style="list-style-type: none"> • LITTLE COMPTON 	
	<ul style="list-style-type: none"> • Long Pond Beach Restoration, Warren’s Point Beach Club

SourceOne Experience

<p><u>Electric Utility Clients</u></p> <p>ISO New England ISO New York</p> <p><u>Massachusetts</u></p> <p>Ashburnham Municipal Light Plant Belmont Municipal Light Department Concord Municipal Light Plant Danvers Electric Division Georgetown Municipal Light Department Groveland Municipal Light Department Holyoke Gas & Electric Department Ipswich Municipal Light Department Mansfield Municipal Electric Department Mass. Electric New England Electric NStar (Boston Edison) Paxton Municipal Light Department Peabody Municipal Light Plant Princeton Municipal Light Department Rowley Municipal Lighting Plant Russell Municipal Lighting Company Templeton Municipal Light Wellesley Municipal Light Plant</p> <p><u>New Hampshire</u></p> <p>Granite State Electric Littleton Water & Light Department Public Service Co. of NH -Schiller Coal Conversion</p>	<p><u>Connecticut</u></p> <p>City of Groton Depart. of Utilities Northeast Utilities - Waste Water Treatment Facilities</p> <p><u>Maine</u></p> <p>Eastern Maine Electric Cooperative, Inc. Fox Island Electric Cooperative Houlton Water Company Kennebunk Light and Power District Madison Electric Works Swan’s Island Electric Cooperative Van Buren Light and Power District</p> <p><u>New York</u></p> <p>Fishers Island Electric Corporation Village of Solvay Electric Department</p> <p><u>Florida</u></p> <p>Florida Power Corp. Tampa Electric</p> <p><u>Rhode Island</u></p> <p>Narragansett Electric</p>	<p><u>Independent Power Producers</u></p> <p>American National Power Androscoggin Energy Bucksport Energy CBX Energy Exelon Power General Electric (Calpine) Lake Road Generating LLC Mass Power Sithe Energy UAE Power Energy Initiatives (Onondaga Co-gen)</p> <p><u>Colleges & Universities</u></p> <p>Harvard University Massasoit College Tufts University Wellesley College</p> <p><u>Industrial & Commercial Clients</u></p> <p>CB Richard Ellis Fidelity Investments General Dynamics Co. Interstate Electric Corporation Mass. Electric Construction Co. Payton Construction Pfizer Pharmaceuticals Siemens Energy & Automation</p>
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References – EAPC Wind Energy Services, LLC

Below is a short list of references. Further references can be provided as requested, especially if a reference to a specific task is desired.

Site Assessment/Project

Feasibility/Economic Modeling

- Robert Christensen
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Saint Antoine Community
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N. Smithfield, RI 02896
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- Scott Gibbs, President
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sgibbs@edf-ri.com
- Al McBride
P.M. – New Resource Qualification
FCM & Tariff Administration
ISO New England Inc.
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Vice President - Business Development
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- Michael Novello
Renewable Energy Analyst
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mnovello@wagnerforest.com

Meteorological Tower Install/Data Analysis

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Section 3: Scope of Work and Schedule

Throughout the scope of work, EAPC Wind team wishes to emphasize that the underlying focus will be on the needs and concerns of all stakeholders, most importantly of the people residing in the region in question.

In addition, since EAPC has been deeply involved in all stages of the development of a multitude of wind projects, we pride ourselves in always keeping our eyes on the goal, the eventual successful financing, construction, and operation of a wind turbine or wind project. Through our pre-feasibility and feasibility analysis, the EAPC team will be on the lookout for potential fatal flaws or ways in which to save time and money later during the development process.

The EAPC Wind team will employ a unique approach, to the pre-feasibility study. The pre-feasibility approach will be to “reverse engineer” a typical feasibility study. Instead of reviewing a particular site, performing a wind assessment and fatal flaw analysis, and then plugging in the results into a pro-forma, EAPC Wind proposes to work backwards from the pro-forma to understand the necessary wind resources to meet project economics. In conjunction with this effort, EAPC will develop its own proprietary wind resource map for the entire East Bay region. The wind resource map will incorporate high resolution inputs that may show high wind resource areas that may not be available on publicly available maps. EAPC Wind will then work with municipalities to overlay their available land to these maps in order to discover the optimal opportunities for their district.

There are several advantages to this approach including a more thorough yet more efficient review of the East Bay Region. The primary advantage to the reverse engineering approach is that all sites within the municipality are more fully considered and vetted. If a municipality is using a publicly available wind map to see which areas may be best for wind in their area, they may not be considering other areas that EAPC Wind’s map shows to have a strong wind resource. By using the reverse engineering approach and determining the wind threshold to meet project economic performance standards, EAPC Wind can then single out areas that meet the necessary wind speeds. This approach will ensure that only high wind sites are submitted to higher levels of pre-feasibility screening, allowing for a more streamlined overall process.

In the second task, the feasibility study will confirm the assumptions made in the pre-feasibility study through a more thorough study in the traditional feasibility approach.

Task 1 - Pre-Feasibility Study

Kick-off meeting

After the award of the contract, the EAPC Wind team would request a kick-off meeting with EBEC and other relevant stakeholders. Before the meeting, EAPC Wind would perform a number of high level mapping studies to review potential areas and regions as well as to help identify initial concerns/questions. The resulting maps will be used at the kick-off meeting as a basis of discussion.

The purpose of the kick-off meeting would be multi-fold:

- Introduction of key team members and presentation of our approach. A key team member would be assigned as a primary contact for all concerns and questions.
- Identification of concerns and preferences of EBEC
- Explain screening process and approach for identifying utility-scale wind project sites (600kw and above)
- Presentation of key filtering criterion for screening sites and add additional filters as requested
- Present EAPC Wind's schedule and goals

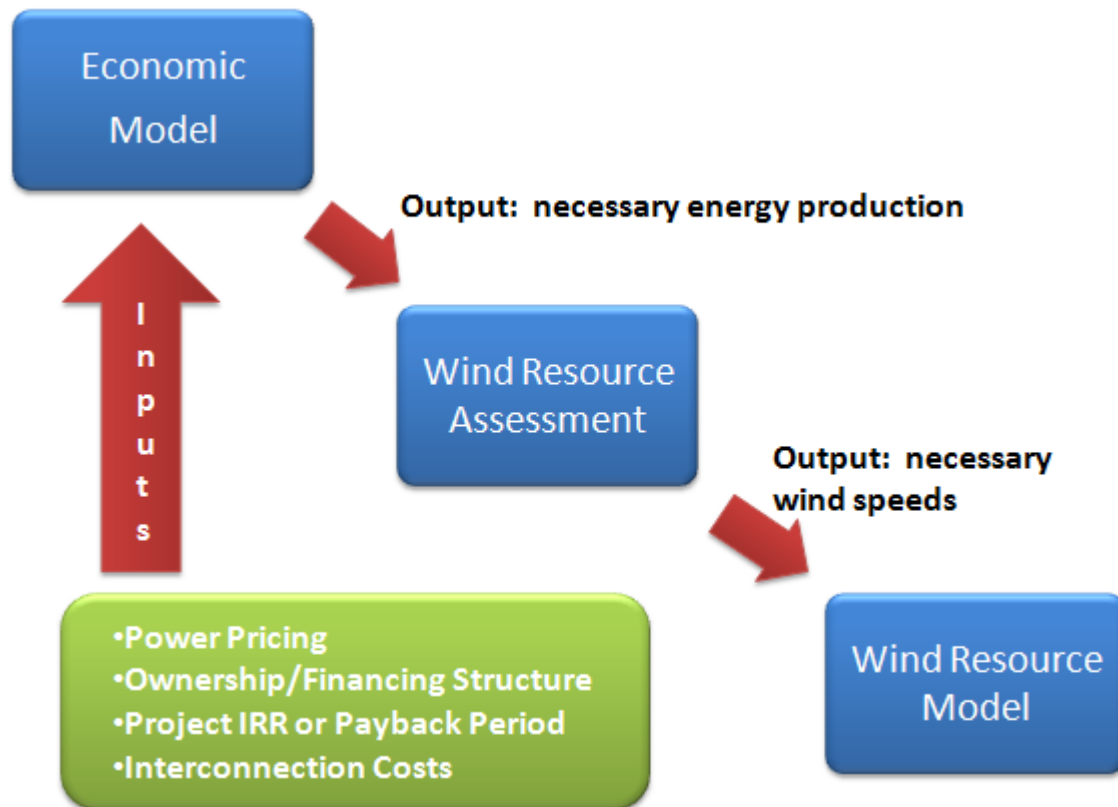
The objective of Task 1 will be to identify multiple potential projects within a short timeline. At the end of Task 1, decision makers will have the information necessary to make educated decisions about the potential sites for which EAPC Wind should perform detailed feasibility analyses.

"Reverse Engineering" Pre-Feasibility Approach

A successful wind project requires more than just strong winds. Indeed it is the coincidence of a strong wind resource combined with an adequately sized site, in an appropriate setting, that is devoid of any environmental permitting hazards and is accessible and flat enough to allow for a reasonable cost of construction. These and many other factors define any successful project. It is for this reason that EAPC has adopted a unique approach to pre-feasibility studies.

Instead of simply seeking out strong winds and only then examining all of the factors that will lead to project success, EAPC defines the requisite corollary ingredients up front, including cost to build and the wind speed necessary to create a financeable project based on those capital costs, and incorporates the entire picture into its pre-feasibility screening process. In this way EAPC Wind ensures only the highest quality sites with a realistic chance of progressing from feasibility to reality are considered during later, more expensive and time consuming stages of project development.

The graphic below details the "reverse engineering" approach with the following sections detailing each step.



Interconnection Requirements and Costs

As part of the EAPC team SourceOne will develop a Transmission & Distribution Flow Chart. The flow chart will address the typical site selection variables (behind the meter versus direct to grid installation, turbine size, proximity of location to existing grid, and associated interconnection costs). Based on the site variables, the Flow Chart will then provide an estimated cost for the transmission & distribution costs. This Flow Chart will help facilitate the site selection process through providing inputs to the financial model and screening process.

Review of Project Ownership Structure and Preliminary Models

The Team will analyze various ownership structures for different wind turbine applications. A behind-the-meter application for a municipality will have a significantly different structure than several wind turbines sited on farmland connecting into the grid to offset municipal load. Once the different ownership structures are defined, a preliminary economic model will be created to determine the potential returns of each, as well as the requisite wind speeds and power prices for a viable project. These wind speeds, power prices, and different turbine applications will define the initial screening criterion.

East Bay Wind Resource Model – Preliminary

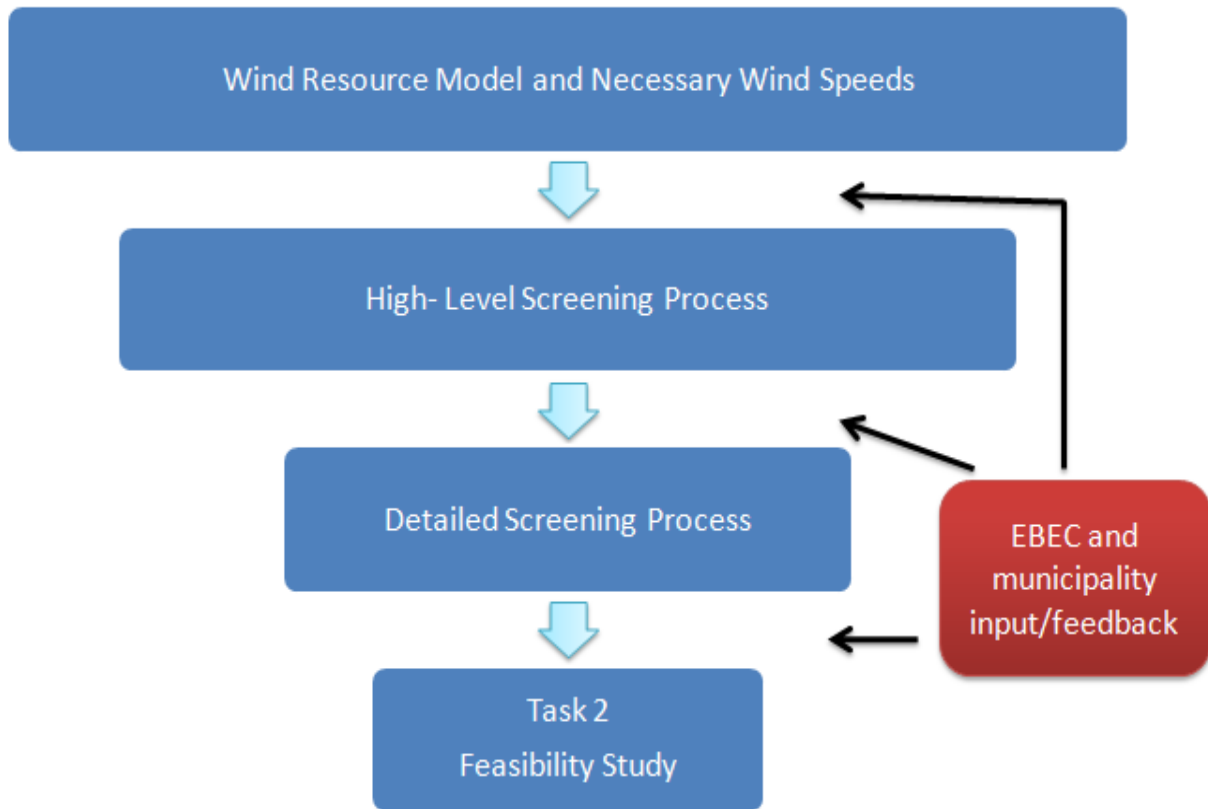
At the same time, EAPC Wind will develop a high-resolution (200m resolution) wind resource map for East Bay. The high-resolution map will use publicly-available data from nearby meteorological masts as well as other public data sources and will incorporate local conditions such as topography, surface roughness (lakes, trees, etc.) and other criterion.

EAPC believes very strongly, based on our extensive experience in the industry, that this is a valuable and extremely necessary step. The map that we create will be significantly more detailed than the 2.5km resolution NREL and AWS wind maps found in the public domain and will help more closely filter specific areas and identify potential sites. Were we or anyone else to rely solely on the publicly available wind maps there is a great chance that either a) potentially high-value sites could be missed completely, or b) sites that are thought to be suitable based on less-precise mapping will turn out not to be and EBEC and its partners will have wasted significant time and money in arriving at this unfortunate outcome.

Screening Studies

The purpose of the screening studies will be to reduce possible candidate sites down to a few selected for Task 2 feasibility work. Throughout the process, the EAPC Wind team fully expects to work closely with EBEC and municipalities to narrow down the field of potential sites.

The typical wind resource assessment and screening process inputs wind resource information into computer models that then predict the energy production for a given turbine. In the reverse engineering approach, EAPC Wind will know the annual energy production required for project success from the financial model and will review the necessary wind speeds to meet this energy production for several selected turbine models. As these models will be used for pre-feasibility screening, archetypal models will be used. Once a site is selected, several turbines models will be reviewed in the feasibility stage at the site to reduce uncertainties.



Pre-Feasibility Screening Exercise

Implementing screening material from the initial economic model along with the high-resolution wind resource model, EAPC Wind will be able to identify all potential sites. EAPC Wind will work with municipalities to overlay their available lands over the wind map to identify potential opportunities. It is understood that several municipalities have already established pre-determined sites. The wind map will provide an initial review of the viability of these sites. Additional screening criteria will be implemented including, but not limited to, airports, sensitive environmental areas, sensitive view shed areas, land-use, wetlands and other environmental concerns.

During the next stage of the screening exercise, the list of potential sites generated during the first step will undergo additional scrutiny for feasibility. The EAPC Wind team will work closely with EBEC through the reduction of potential sites. In the detailed screening exercise, the buildable area will be defined, which is the area where a turbine could be placed and a number of considerations will be used to “confine” the area to only those spots a turbine can be built. The exercise of defining a buildable area will involve considering electrical interference (Fresnel Zone study), local wetland, zoning setbacks, construction accessibility, ease of connection to electrical system/grid, and other environmental concerns including neighborhood context.

Municipal Load Assessment

Given EBEC's goals of supplying energy to municipal loads within all of the member communities of the consortium, it will be necessary to quantify the amount of electricity consumed by the municipal customers on an annual basis assess the feasibility of address all or a portion of this need with wind turbines sited in the East Bay region. The number of viable sites and the appropriate size of turbines suitable to these sites will be vital in making this determination.

Zoning, Regulation, and Permitting Review

Pare Corporation will lead efforts in discussions with the project's respective town and other relevant agencies. PARE will collect zoning and regulation guidelines that pertain to wind development. Information gathered from this effort will be plugged into the project model to modify the project layout if needed. In conjunction with the various municipalities involved, PARE will also review existing zoning databases and sources with respect to potential zoning red flags. PARE will report its findings on required zoning/regulatory changes and any local permits that would be necessary for a project to move forward.

Progress Reports and Meetings

The EAPC Team will provide brief bi-weekly progress reports to EBEC as required by the RFP. Additionally the EAPC Team will be available to attend monthly meetings with EBEC at large and bi-weekly meetings with the EBEC Technical sub-committee, as set out in the RFP.

Pre-Feasibility Report

The EAPC Team will summarize and present its pre-feasibility findings and recommendations in a report delivered initially in draft form for comment by EBEC and then a final version that will represent the finished product and deliverable for the pre-feasibility task.

EBEC Participation

EAPC Wind and PARE will work with municipal planners to best utilize their knowledge of the communities and their connections with municipal departments. The first task will be to request information on sites that the EBEC has preliminarily considered for wind turbine installation. Secondly we will request information on municipally-owned parcels including Map/Lot and regulatory encumbrances (including zoning, easements, or funding constraints such as Land and Water Conservation Act or RI Open Space Bonds) that could limit consideration of parcels. Emphasis will be on undeveloped municipal properties and parcels developed as schools, landfills, public works garages, sewage treatment facilities, and properties taken for taxes. Clarification will be requested on consideration of quasi-public properties such as the Mount Hope Farm in Bristol. Thirdly we will request any parcel based GIS mapping and zoning for each community. This will enable the EAPC Wind team to

efficiently review setback distances and adjacent land use issues. Fourthly, we request the assistance of municipal planners in collecting data on electrical demand and the electric rates paid to National Grid.

Legal and Regulatory Issues

The EAPC Team will make key members available for meetings and responses to questions on legal and regulatory issues to be taken up by EBEC and Roger Williams University Law School fellows. In fact, EAPC provides significant added value in this area. Bob Sherwin, Managing Partner, who will be one of the participants in these meetings, has extensive legal and regulatory experience relating to wind power. He served as the Chief Technical Advisor for the United States to the International Electro-Technical Commission (IEC) Board and played a key role in setting international standards for turbine technology and other aspects of the wind industry. In addition he routinely consults contract and legal document review for contracts relating to many aspects of the wind energy industry. He would be a very valuable participant in and legal and regulatory discussions. EAPC assumes up to two (2) meetings will be held on these matters during the pre-feasibility stage.

Wind Resource Assessment

Selection of Wind Turbine Model

Up to five utility-scale wind turbine models will be selected for the wind resource assessment. Turbine selection will be based on suitability for the site, preference from local officials and stakeholders, proximity to other similar turbines (to control operating costs), availability of turbine, and reputation in the industry.

Turbine Optimization and Energy Production

The Team will use complex wind modeling software WindPro and WaSP to calculate the optimal turbine location and energy production for each turbine model at each site within the buildable area. WindPro is the most widely used wind modeling software in the wind industry.

Turbine Siting Conditions

Many of the siting conditions will be addressed in Task 1. However a closer, on-site review of the site will be considered in the turbine optimization model.

Meteorological Mast Review

Smaller projects often cannot justify the economics of buying and installing a meteorological (met) mast. The Team will review options to acquire or lease a met mast through public funding or review the possibility of not using a meteorological mast.

Constructability Analysis

PARE Transportation Engineers will review all potential transportation and access routes for wind turbine equipment vehicles and cranes. Steepness, road angles and widths, and structural integrity to bridges will be reviewed. Proper notifications to transportation agencies will be made.

A desktop study evaluating the local geology will outline the viability of constructing wind turbines and the associated structures. SourceOne, Inc. will assist The Team in evaluating the logistics of electrical interconnection.

Foundation Requirements

Determining foundation requirements typically requires drilling the area at the proposed turbine location and analyzing the core samples. In the feasibility study, this approach is not economically appropriate. However, a preliminary review of the geology in the area may suggest if special consideration to foundation design may be necessary.

Meeting with Local Electric Utility

The Team will meet with representatives of National Grid to discuss interconnection costs and options. The Team will review the potential wind turbine sites and determine their proximity to the distribution lines and substations. For distribution-level electrical lines, we will contact the local distribution company (LDC) to determine the availability of lines and the attributes associated (kW capacity, available load, etc.).

The Team will review all available information on the existing electrical infrastructure (transformers, equipment name plate data, current grid tie-in, one-line diagrams, previous studies). The Team will review any relevant load flow studies, maps or circuit diagrams available.

Review of Electrical Load Profile (if necessary)

In the case of a distributed generation application, the Team will review existing electrical load profile to map out the electrical usage on an annual basis. This will help determine average seasonal loads, peak and low load periods, and on-peak and off-peak variations. This data will be used to examine constraints that low load periods may impose on sizing.

Permitting

Review of Regulatory Environment

Regulatory issues are critical to determining permitting parameters for site selection. The EAPC Team recommends a three prong approach:

- Meet with State and Federal Regulators
- Review Existing Databases and Sources
- Document Findings

Meet with State and Federal Regulators

PARE will schedule a meeting with the DEM Office of Customer and Technical Assistance (OCTA) at the start of the project to discuss many issues that are only now coming to the forefront of DEM's considerations. Michael Sullivan, DEM director, has pledged his support to achieve Gov. Carcieri's goal of generating 20 percent of the state's energy needs from sustainable/renewable sources. DEM is key to several areas of concern for siting wind turbines including potential wildlife/avian impacts, wetland impacts, and restrictions (or opportunities) to use brownfield sites, parks, and properties with conservation easements. This initial discussion will help refine the site selection process by identifying opportunities and regulatory processes, or establishing which sites may pose fatal flaws that should be screened out in the selection process.

We recommend following the OCTA meeting with a similar meeting with representatives of DEM, CRMC, US Fish & Wildlife and the US Environmental Protection Agency. Ideally this meeting would be

scheduled to coincide with a monthly Interagency screening meeting. This will afford us the benefit of initiating dialogue with, and receiving direction from, many of the concerned federal and state agencies at once. We will start the dialogue, receive permitting direction, and more importantly, help define regulatory issues for site selection. One of the key objectives of both the DEM OCTA and the Interagency Review Meeting will be to document agency concerns and recommendations so that as the public process begins, we already have that information in hand.

Review Existing Databases and Sources

The Team will identify known environmental constraints from existing databases maintained by the Rhode Island Geographical Information Systems (RIGIS), DEM Natural Heritage Program, the US Fish and Wildlife Service (USFWS), CRMC, and Narragansett Bay Research Reserve on Prudence Island. The available data will be reviewed for existing information on avian state and federally-listed Threatened and Endangered species, flyway habitat, as well as other documented wetland and cultural resources.

Avian and Bat Considerations. There are no wind-directed studies of avian populations in the state. PARE will coordinate with Dr. Peter Paton from the University of Rhode Island Department of Natural Resources regarding any available avian information at project sites. We will also consult with DEM biologists regarding the availability of any data or avian and bat studies that have been conducted in the project vicinity. Although DEM is currently compiling previous avian studies for CRMC, DEM wildlife biologists have indicated that little work has actually been done on avian assessment either offshore or along the coastline for wind energy installations. There is a data gap regarding species, how they move through the area, and where "hot spots" are known to exist. Charles Brown, DEM bat specialist, has concurred that no bat studies have been conducted in Rhode Island to date (with the exception of those performed for the Block Island installation). Radar studies can track populations but this data requires multiple years to collect. The Team will review best-available data and recommend appropriate next steps for consideration by EBEC.

Brownfield Considerations. Previously degraded sites including Tiverton's Landfill #2 (the only active landfill in the state outside of RI Resource Recovery Corporation's Central Landfill in Johnston), former landfills (including abandoned but not capped landfills in Tiverton, the former Forbes Landfill in East Providence, and the Bristol transfer station), and other municipally owned brownfields may provide opportunities for sustainable energy development. The Team will contact DEM Office of Waste Management for a listing of East Bay sites in the state inventory.

Use of Park Property. DEM Planning will be consulted to determine if use of any municipally owned parks where improvements have been constructed with Ocean State Bond Fund or federal Land and Water Conservation Act funds would be precluded from consideration. These funding sources include a "conversion of use" clause that prohibits other than recreational use without substitution of recreation properties of at least equal fair market value and reasonable equivalent usefulness and location (as well as the approval of the Secretary of the Interior).

Historic Resources. RIGIS databases will be reviewed and the RI Historic Preservation and Heritage Commission (State Historic Preservation Officer) will be consulted for cultural resource sites and to discuss if there are areas where turbine installation might be compatible with an historic resource. This initial conversation will be important guidance as to whether many of the areas prominent locations including Tiverton's Fort Barton, Miantonomi Park in Newport, and Mount Hope Farm in Bristol should be dropped from consideration.

Non-governmental Organizations. The Team will contact the Audubon Society of Rhode Island and Save the Bay for early input into their concerns (or support). The Audubon Society, with Environmental Education Center in Bristol and wildlife refuges in Tiverton and Touisset will be an important stakeholder.

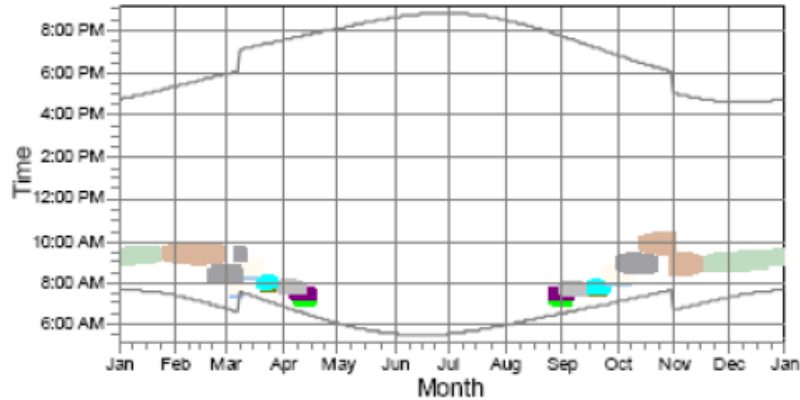
Zoning and Local Permitting. PARE will ask representatives of each municipality to provide information on the status of zoning for utility scale and typical homeowner wind energy turbines in their community. Information will be compiled on fall zones and the need for a special permit

Report Findings

PARE will document findings of the regulatory process to identify wind turbine siting opportunities and fatal flaws for the site selection process. A memo of findings will be prepared.

Environmental Impact

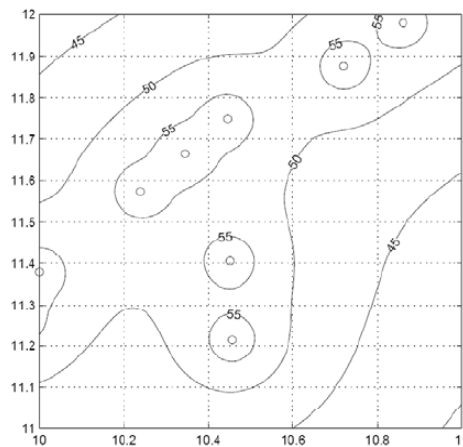
- *Shadow Flicker*



Shadow flicker graphic for a receptor site. Different colors represent different turbine locations with lines representing limits of daylight period. The “blots” indicate periods where shadow flicker events **may** occur. For example, the sea green blot shows that from mid-Nov to late-Jan, shadow flicker **may** occur from approximately 9:00 am to 10:00 am. This location experienced 12.4 hrs/year of flicker.

The Team will perform a shadow flicker study on a number of receptor locations (with a maximum of up to 30 per location). This is especially important for nearby schools, recreation fields, and residences. The Team has a long history of performing shadow flicker studies for clients. A digital model of the site will incorporate wind turbine generator location, elevation, obstacles, average wind speeds and direction, forestry, and receptors for the area of consideration.

- *Noise Analysis*



Sample Noise Analysis Graphic. Smallest circles represent turbine locations.

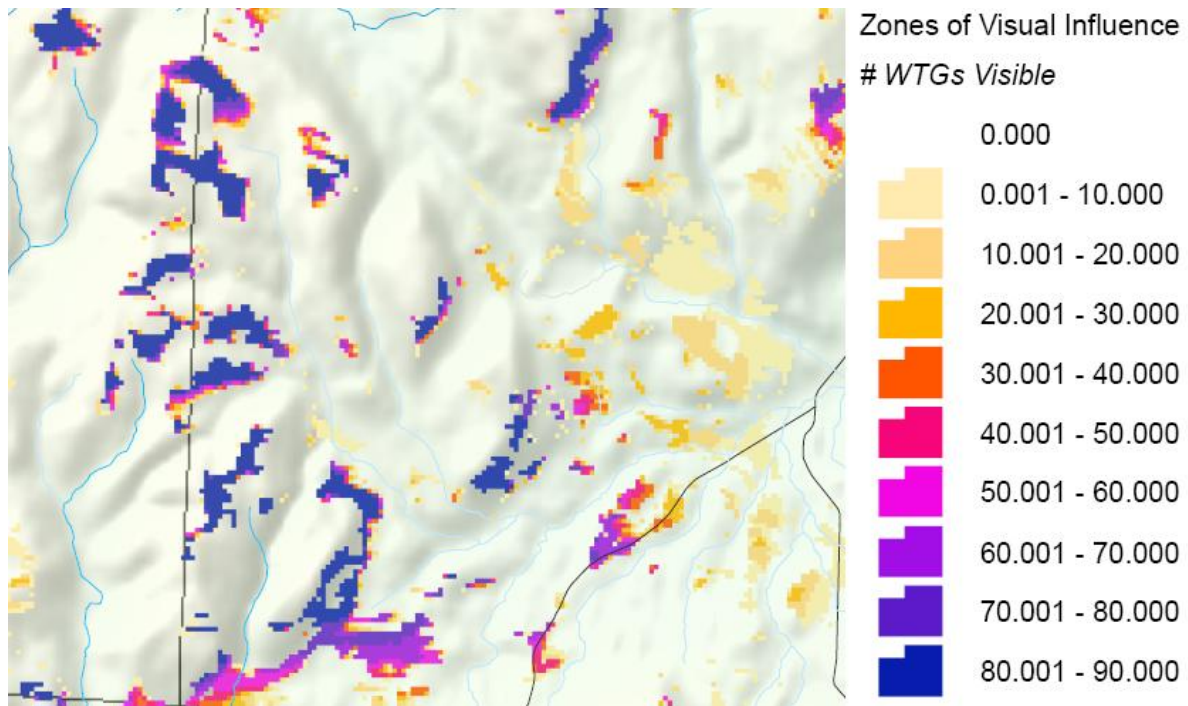
The Team will perform Noise Analysis studies for three sites, as requested. Noise Analysis will be based on a digital model of the site and will detail sound levels at specific receptor locations.

- *Photo Montage (visualizations)*



The Team has performed collections of photo montages for clients over the years. Pictures will be taken off the site at locations requested by stakeholders.

- *Zone of Visual Influence (ZVI)*



Sample ZVI study. Colors represent the number of turbines seen from a particular location.

The Team can perform a Zone of Visual Influence (ZVI) Study to measure how far and where a turbine can be seen. A digital model will accommodate for both leaf-on and leaf-off conditions.

Economic Assessment

Assessing the project's economic viability is an iterative process. The Team will begin with an evaluation of the ownership structures and likely financing options. Those decisions will help shape the structure of the pro forma, which itself requires a series of detailed inputs.

Those include:

- Estimates of development costs, including, among others, site work, foundations, and environmental permitting.
- Estimates of capital costs for the turbine determined by the resource assessment report to be the most productive. Typically, this cost includes turbine, tower, freight, and erection costs.
- Estimates of balance of plant and interconnection costs.
- Estimates of annual operating costs, with particular attention to variation in these costs at different periods in the project's lifetime and as warranties expire. Typically, this line item will include operations and maintenance costs, as well as insurance, management fees, spare parts, and other considerations.

This information will come from the Team's experience with similar projects, as well as discussions with manufacturers and vendors.

Other inputs will include:

- Avoided costs from savings in electricity purchased from the local electric utility, which requires a detailed understanding of how demand and energy charges will be reduced by production from the turbines.
- Value of the power and RECs produced by the turbines, with particular attention to understanding how well production from the turbines aligns with the profile of any on-site load.
- Applicable state and federal policy incentives including, but not limited to, tax credits and net metering.

An iterative process allows the Team to run through these steps several times, eventually identifying the options that maximize project value. We will provide a detailed list of the inputs and assumptions used

in the model, a pro forma, and a sensitivity analysis demonstrating how the value of the project varies as important inputs change.

Progress Reports and Meetings

The EAPC Team will provide brief bi-weekly progress reports to EBEC as required by the RFP. Additionally the EAPC Team will be available to attend monthly meetings with EBEC at large and bi-weekly meetings with the EBEC Technical sub-committee, as set out in the RFP.

Final Report

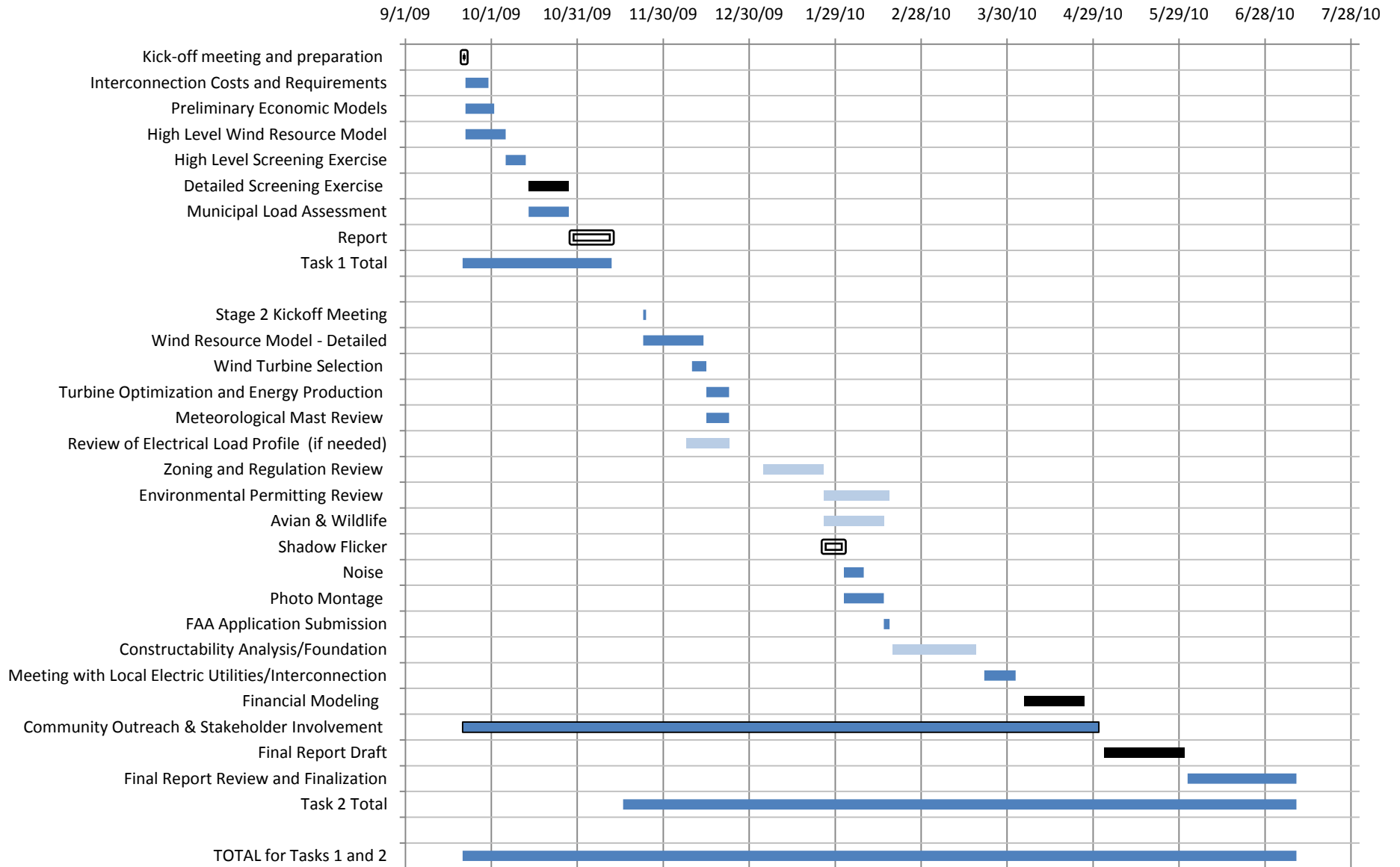
The EAPC Team will prepare a final written report presenting feasibility findings first in draft form for EBEC review and comment and then in a finalized version to complete work on the project.

Additional Tasks

The EAPC Team has experience throughout the entire wind project cycle, from pre-feasibility to operation and maintenance. If appropriate, EAPC Team would welcome the opportunity to present a development and pre-construction plan. EAPC, PARE, and SourceOne all have resources that can provide professionally engineered technical designs including civil, foundation, and electrical designs. We can also draft and review bids for completeness of scope and can review contracts for industry standards in pricing and terms. Additionally, all team members have experience in construction management including specific construction management of wind farm sites.

Project Schedule

East Bay Wind Power Feasibility Study - Project Schedule



Assurance of product delivery

Within reasonable notice, those individuals within the team management structure above shall be available to commence work immediately on the scope as defined in section Section 3 of this RFP. EAPC Wind assures the EBEC that the services and products described in Section III of the RFP will be completed in the timeline specified and to the utmost quality. EAPC Wind and its team have significant resources to perform the Scope of Work.

Professional Liability Coverage

EAPC Wind Energy Services currently holds a \$1,000,000.00 professional liability insurance policy and can provide proof of insurance upon request. PARE and SourceOne also hold professional liability insurance of \$1,000,000 and proof can be provided upon request.

Team Resumes

Robert W. Sherwin
Partner

Project Assignment

Managing Partner

Educational Background

1973 - 1975: Rutgers University, PhD Candidate in Geography

1971 - 1972: University of Arizona, PhD Candidate in Geochronology

1970: University of Arizona, Masters in Geography

1967: Dartmouth College, Bachelor of Arts

1963: Paris American School

Work History

2006 - Present: Managing Partner, EAPC Wind Energy Services, LLC

2003 - Present: President, Vermont Windpower International, LLC

1985 - 2002: President/CEO, Atlantic Orient Corporation

1974 - 1984: Executive Vice President, Energetech Corporation

Relevant Experience

Managing Partner, EAPC Wind Energy Services, LLC

- EAPC is a partnership of Vermont Windpower International and EAPC Architects and Engineers of Grand Fork ND. Services include site prospecting, feasibility studies, project development, monitoring tower siting, wind resource development, data collection and analysis including the effects of arrays and topography. These services are provided on an international basis.

President, Vermont Windpower International, LLC

- Senior Technical Consultant to Sigma Energy Solutions (Alstom): Due diligence and technology assessments including technology risk assessment, review of contracts, including PPAs, turbine supply, warranty and OM contacts. As well as technical site assessments. Clients include developers, major financial institutions and windfarm operations.
- AREVA Transmission and Distribution: Provide market input strategy for AREVA's electrical products to the renewable energy industry including development of automated substation product line.
- Airtricity Inc.: A major windfarm developer. Project manager for 3 (40-80mW) windfarm developments in New York State. Responsibilities include land acquisition permitting and technical assessment. Take projects from conception to construction including electrical and civil infrastructures. Corporate input for business development activities. First project was completed in 2007.
- Work with European organizations (ECN and Delft University) for wind turbine design in the built environment.
- Development of wind energy expertise and rural electrification for international development.

President/CEO, Atlantic Orient Corporation

Founded AOC in 1985 to develop high reliability small wind turbines for the distributed generation and remote diesel based utility market. Managed a very professional design and engineering team to develop equipment for these markets. Major accomplishments include:

- Several major contracts totaling around \$4 million dollars from NREL to develop test and certify a 50 kW wind turbine.
- Successfully deployed the 15/50 to major international laboratories for testing for IEC documentation.
- Developed certification plan with UL.
- Successfully deployed turbines to remote markets in South America, Alaska, Canada, Russia and the United Kingdom.
- Sold and installed ten 15/50 wind turbines in Northern Alaska in the mid 1990's. This project is still very successful to this day. This project has been reproduced in other Alaskan locations. The wind farm is being maintained and evaluated for performance by the DOE Wind Turbine Verification Program.
- Pioneered the development of the combination of diesel engines and wind turbines.
- Worked closely with the Netherlands Energy Foundation to develop analytical techniques for wind turbine design – such as failure modes and analysis for reliability.
- Worked with Aerpac, a Dutch blade manufacturer, to develop new blade manufacturing methodologies to increase performance and reliability while decreasing costs.

Executive Vice President, Enertech Corporation

Founding partner and major stockholder. Primary responsibilities at Enertech included: management of up to 80 people mostly technical, engineering, and marketing staff; corporate planning; corporate negotiations with other major stockholders such as the Bendix Corporation; developed bank relations in project financing and capital investment including with 1st Bank of Minneapolis and Capital Cogeneration. Major accomplishments include:

- Marketing of Enertech's product line which included development of a dealer network, service and installation organization.
- Windfarm development including syndication with Kidder Peabody and others; financing, and construction management for complete turn-key installations.
- Development of foreign market applications especially Asia, the Pacific and South America.
- Shared Product Development and Engineering responsibilities with the President of Enertech, including such responsibilities as determining the ability to manufacture new products, development of Enertech E-44, 40kW, 60kW and smaller products, development of Enertech windfarm grade turbine.
- Negotiations with various zoning administrations, planning boards, public utility corporations including local, state, and federal organizations.
- Management of marketing and research contracts.
- Responsible for personnel management and personnel functions including

benefits programs.

- Planning and deployment of corporate offices including the marketing installation service capabilities at Livermore, CA and Palm Springs, CA.
- Management of multimillion dollar windfarm construction projects.
- Developed relations with utility companies for permitting utility companies for permitting utility interconnection, construction and power purchase contracts.

Professional Activities

- Corporate member of American Wind Energy Association (AWEA) since 1974:
 - President 1986-1987
 - Served on Board of Directors for 16 years
 - Served on Executive and Ethics Committees
 - Served on Legislative Committee
 - Small Wind Turbine Committee
 - Chairman Standard Coordinating Committee
 - Directed and participated in the drafting of AWEA Wind Turbine Standards
 - Established partnership for AWEA to be an approved ANSI Standards Writing Organization
- Member of the Institute of Electrical and Electronics Engineers (IEEE) Standards Coordinating Committee on Dispersed Storage and Generation (SC23).
- Participated in the writing and approval of IEEE Recommended Practice for the Electrical Design and Operation of Windfarm Generating Stations IEEE STD 1094-1991
- Associate Member Canadian Standards Association Technical Committee on Wind Energy Conversion Systems. Participated in the development of:
 - Recommended Practice for the Installation of Wind Energy Conversion Systems, CAN/CSA – F429 – M90
 - Wind Energy Conversion Systems Performance, CAN/CSA – F417 – M91
 - Wind Energy Conversion Systems Interconnection to the Electric Utility, CAN/CSA – 418 - M91
- Chief delegate for the U.S. Technical Advisory Group to Technical Committee (TC) 88 (Wind Energy) of the International Electro-technical Commission (IEC) 1988 – 2001. Rejoined TAG to (TC) 88 in 2007. Coordinated U.S. technical input to the development of IEC Standards. Held leadership role in TC 88 – chairing and participated in many of the technical committees leading to published standards. They include:
 - IEC 61400, Ed 1, Ed 2, Wind Turbine Generator Systems, Part 1, Safety Requirements, 1998
 - IEC 61400 – 2, Wind Turbine Generator Systems, Part 2, Safety of Small Wind Turbines, 1996
 - IEC 61400 – 11, Wind Turbine Generator Systems, Part 11, Acoustic Noise Measurement Techniques, 1998
 - IEC 61400 – 12, Wind Turbine Generator Systems, Part 12, Wind Turbine Power Performance Testing, 1998

- IEC 61400 – 22, Wind Turbine Generator Systems, Part 22, Wind Turbine Certification, 2001
- U.S. representative to the Standing Committee of the International Energy Agency Program for Research and Development on wind energy conversion systems. Contributing author to:
 - Expert Group Study on Recommended Practices for Wind Turbine Testing and Evaluation, Power Performance Testing, Part 1, 1990
 - Expert Group Study on Recommended Practices for Wind Turbine Testing and Evaluation, 1994
 - Estimation of Cost of Energy from Wind Energy Conversion Systems, Part 2
 - Expert Group Study on Recommended Practices for Wind Turbine Testing and Evaluation, 1988
 - Structural Safety, Review of Standards Code of Practice, Part 6
- Member of International Energy Agency (IEA) Annex 8 – Wind Diesel Systems.
- Member IEA Annex 13 Round Robin Wind Turbine Group Testing – utilized AOC 15/50 for baseline test in the U.S., Canada, Denmark and Greece.
- Founder and Co-Chairman of the International Wind Diesel Workshop – 14 years.
- Technical Advisor to the Program Committee of the European Wind Energy Association Conference and Exhibition.
- U.S. Representative to the International Meetings of Test Stations during the 1990's.
- Numerous wind energy presentations and meetings to enhance the industry in such places as Ireland, Greece, Alaska, Japan, China, Kazakhstan, Brazil, Chile, Argentina and Puerto Rico sponsored by U.S., U.N. and European governments.
- Director Solar Rating and Certification Corporation, 1986-1988.

Awards Received

American Wind Energy Association Man of the Year Award in 1985 for outstanding service to AWEA for standards and legislation.



Jay Haley, P.E.
Partner

Project Assignment

Mechanical Engineer

Registration

Registered Mechanical Engineer - North Dakota, Minnesota

Educational Background

1985: Bachelor of Science, Mechanical Engineering University of North Dakota, Grand Forks, ND

Work History

2000 - Present: Mechanical Engineer/Partner, EAPC, Grand Forks, ND

1998 - 2000: Mechanical Engineer, EAPC, Grand Forks, ND

1989 - 1998: Senior Design Engineer, Energy and Environmental Research Center, Grand Forks, ND

1985 - 1989: Director of Engineering, Ideal Aerosmith, Inc., East Grand Forks, MN

Professional Experience

Mr. Haley has been involved in wind energy since 1983. He's performed numerous wind resource assessments for community economic development groups, utilities, wind developers, Native American Tribes, and private citizens. He's been involved in the planning, permitting, design, construction, and operation of wind Farms. He's made more than two hundred public presentations on wind energy in the past three years and has been the wind industry's primary spokesperson in ND. Mr. Haley is a member of the National Wind Coordinating Committee, the North Dakota Wind Coordinating Committee, Co-Chair of the Energy Cluster of ND's New Economy Initiative, Vice-Chairman of the ND Renewable Energy Partnership, founding Executive Board member of the ND SEED Coalition, a member of U.S. Senator Dorgan's wind conference planning committee, and is also the founding Chairman of the Wind Energy Council, a regional trade organization in the upper Midwest.

Relevant Experience

- Wind Consultant for the Griggs-Steele Wind Development Group, Cooperstown, ND: Convinced the group to pursue wind development, established wind monitoring program, organized and assisted in the selection of wind developer, assisted with preparation of 80 MW bid to Xcel Energy which was the first proposed wind farm in North Dakota.
- Wind Consultant for the Coteau Hills Wind Development Group, Edgeley, ND: Convinced the group to pursue wind development, established wind monitoring program, organized and assisted in the selection of wind developer.
- Wind Resource Assessment for Cass County Rural Electric Cooperative, Fargo, ND: Performed feasibility analysis and made site recommendations for the Cooperative's 900-kW wind turbine as a part of their green pricing program.
- Wind Resource Assessment for Moorhead Public Service Department, Moorhead, MN: Performed wind resource assessment, made siting recommendations, and supplied wind turbine production estimates used in the determination of green pricing plan for a 750 kW wind turbine for the

City of Moorhead. Provided siting recommendations for the second turbine added during the summer of 2001.

- Wind Resource Assessment and Turbine Demonstration for the Turtle Mountain Chippewa, Belcourt, ND: Installed wind monitoring towers, performed wind resource assessment, wind turbine site selection, wind turbine production estimates, turbine procurement and erection, windsmith training, and monitored wind turbine production.
- Wind Resource Assessment and Turbine Demonstration for the Spirit Lake Nation, Fort Totten, ND – Installed wind monitoring towers, performed wind resource assessment, wind turbine site selection, wind turbine production estimates, turbine procurement and erection, windsmith training, and monitored wind turbine production.

Other Wind Consulting Clients include:

Dunn County JDA, High Country Wind Power, McIntosh County Wind Development Committee, Napoleon Economic Development Corp., Kenmare Community Development Corp, SW REAP Zone, Bay Mills Indian Community, Mark Schroeder, Three Affiliated Tribes, Shakopee Mdewakanton Sioux Community, Wind Associates, Red River Regional Council, Standing Rock Sioux Tribe, Kansas Wind Power, Van Raden Properties, and FPL Energy.

Northern States Power – Developed wind data logger, Minneapolis, MN

Turtle Mountain Chippewa – 100 kW Project, Belcourt, ND

Spirit Lake Nation – 100 kW Project, Fort Totten, ND

Moorhead Public Service – 1.5 MW Project, Moorhead, MN

Cass County Electric Cooperative – 900 kW Project, Fargo, ND

Kenmare EDC – Resource Assessment, Kenmare, ND

SW REAP Zone - Resource Assessment, Southwest ND

Standing Rock Sioux - Resource Assessment, Fort Yates, ND

Three Affiliated Tribes – 100 kW Project, New Town, ND

Cooperstown/Griggs EDC – 80 MW, Finley, ND

PPM Energy – 100 MW Project, Trimont, MN

Nebraska Public Power District (NPPD) – 75 MW Project, Ainsworth, NE

Trimont, LLC (Kimball Wind) – 100 MW RFP, Trimont, MN

UPC Wind Partners, LLC – 30 MW Photomontages, Maui, HI

Global Renewable Energy Partners (GREP) – 50 MW Project, Velva, ND

FPL Energy – 60 MW Project, Edgeley, ND

FPL Energy – 40 MW Project, Highmore, SD

Kansas Wind Power (KWP) – 100 MW Project, Leon, KS

AgQuest Financial Services – 6 MW Project, Springfield, MN

Tholen - 8.25 MW Project, Aetna, MN

Van Raden Properties – 10 MW Project, Binford, ND

Powers Lake EDC – 75 MW Project, Powers Lake, ND

K & S Windpower – 3 MW Project, Lake Crystal, MN

University of North Dakota - Turbine Integration Study, Grand Forks, ND

North Dakota State University - Turbine Integration Study, Fargo, ND

North Dakota State College of Science - Turbine Integration Study, Wahpeton, ND

Lake Region State College - Turbine Integration Study, Devils Lake, ND

Bismarck State College - Turbine Integration Study, Bismarck, ND

Cooperstown/Griggs EDC - Wind Resource Mapping Project, ND

Bureau Valley Schools - Feasibility Study/Turbine Installation, Manlius, IL

McIntosh County - Resource Assessment, Wishek, ND

Shakopee Mdewakanton Sioux - Resource Assessment, Prior Lake, MN
Jamestown EDC - Resource Assessment, Jamestown, ND
Sisseton Wahpeton Sioux Tribe - Resource Assessment, Sisseton, SD
Elgin EDC - Resource Assessment, Elgin, ND
Morton County - Resource Assessment, Mandan, ND
Fredrikson & Byron, P.A. - Resource Assessment, Clovis, NM
Fagen Inc. - Resource Assessment, Granite Falls, MN
Northern WindPower - Resource Assessment, Terry Island, ON Canada
Cheyenne River Sioux - Resource Assessment, Eagle Butte, SD
White Earth Indian Reservation - Resource Assessment, Mahnomon, MN
Turning Point Management - Resource Assessment, Amboy, MN
Ada EDC - Resource Assessment, Ada, MN
Joe Richardson - Resource Assessment, Colfax, ND
Joel Sumption - Resource Assessment, Hecla, SD
Bay Mills Indian Com. - Resource Assessment, Brimley, MI
Mark Schroeder - Resource Assessment, Hagerman, ID
Rolla JDA - Resource Assessment, Rolla, ND
Exergy Development Group - Photomontages, Great Falls, MT
Schlossman & Gunkelman - Resource Assessment, Fargo, ND
Red River Regional Council - Resource Assessment, Cavalier, ND
Edgeley EDC - Resource Assessment, Edgeley, ND
Dunn County JDA - Resource Assessment, Killdeer, ND
Napoleon EDC - Resource Assessment, Napoleon, ND
High Country Power - Resource Assessment, Stanley, ND
National Renewable Energy Laboratory (NREL) - Met Mast Installations
Apr-1996 WindPRO Course Participant – Grand Forks, ND
Apr-2002 WindPRO Course Participant – Paris, France
Jun-2002 WindPRO Course Participant – Portland, OR
Aug-2002 WindPRO Course Instructor – Grand Forks, ND
May-2003 WindPRO Course Instructor – Austin, TX
Sept-2003 WindPRO Course Instructor – Grand Forks, ND
Piping, Pressure Vessel, and Structural Steel Design –
Transport Reactor Development Unit, Energy and Environmental Research Center,
Grand Forks, ND
Piping, Pressure Vessel, and Structural Steel Design – Hot Gas Cleanup Test Facility,
Energy and Environmental Research Center, Grand Forks, ND
Piping, Pressure Vessel, and Structural Steel Design – Combustion 2000 Test Facility,
Energy and Environmental Research Center, Grand Forks, ND
Piping, Pressure Vessel, and Structural Steel Design – Coal Prep Facility, Energy and
Environmental Research Center, Grand Forks, ND
Low-Energy Building Design – Grand Forks County Office Complex, Grand Forks,
ND
Energy Systems Analysis – Perimeter Acquisition Radar Facility, Cavalier Air Station,
Cavalier, ND

Project Assignment

Senior Project Engineer

Educational Background

1995: BS Civil Engineering, University of New Hampshire

1995: Engineer in Training, State of New Hampshire. Serial No. 3173

Work History

2006 - Present: Project Engineer, EAPC Wind Energy Services

2005 - 2006: President, Twin State Renewables, LLC

2002 - 2005: Project Engineer, AWS Truewind, LLC

2001 - 2002: Field Engineer, Atlantic Orient Corporation

1997 - 2001: Assistant Project Engineer, Raytheon Polar Services

1995 - 1997: Sheet Metal Worker, Antarctic Support Associates

1995: Junior Engineer, Tirey and Associates

Professional Experience

Worked as a civil/structural engineer for seven years before entering the renewable energy sector in 2001. Entered the wind energy sector through work with a wind turbine manufacturing company which manufactured 50kW wind turbines. Transitioned to commercial scale wind through a position with AWS Truewind, LLC. Currently working for EAPC Wind Energy Services, LLC.

Relevant Experience

EAPC Wind Energy Services is a wind energy consulting company that provides services to wind farm developers, financiers, utilities and other companies and organizations. Services include wind resource assessment, wind farm design, owners engineering, and much more. Responsibilities for EAPC include wind farm design, on-site client engineering support, and project management. Has successfully completed the WindPRO training course.

AWS Truewind, LLC (AWST) is a wind energy consulting company specializing in advanced atmospheric modeling and measurement, and engineering services. The following is a list of tasks performed thus far at AWST:

- Met Tower verification.
- Wind Farm site assessment.
- First order wind resource assessments and wind farm economics.
- Data analysis for multilevel meteorological masts including analysis for NYSERDA Tall Tower Program which entailed boundary layer analysis of data up to a height of 120m.
- Manual wind farm layouts using ARC GIS.
- Project Manager and engineer for the LIPA Farm Bureau project, which focused on the incubation of small and medium wind projects on Long Island initially through the installation of LIPA owned turbines.
- Have been involved with complete wind turbine installation design including contractor selection, construction supervision, commissioning, and power curve verification for small and large wind turbines.
- Acted as project engineer for the NYSERDA Small Wind project and co-taught 3 small wind turbine installation workshops for NYSERDA.

Atlantic Orient Corporation manufactured 50 kW wind turbines. Responsibilities included project management, field service, wind turbine installation, and client engineering support.

Other Experience

- **Raytheon Polar Services** is a specialty division of Raytheon which was formed for the purpose of fulfilling the support contract for the United States Antarctic Program.
- Project management and design of civil and structural projects under the guise of a registered P.E. for the U.S.A.P. for construction in Antarctica.
- Worked as a field engineer at McMurdo Station, Antarctica.
- Reviewed structural steel designs for the new South Pole station.
- Completed piping designs for sewer, water, and co-generation projects

Project Assignment

Senior Development Engineer

Educational Background

- 2005:** University of Chicago Masters of Arts in the Social Sciences,
- Areas of concentration: study of emotion, experience theory, cultural psychology
- 2000:** Bradley University Bachelors of Science in Mechanical Engineering (*cum laude*)
- Area of concentration: material science, gas dynamics, thermodynamics
- 1998:** University of Copenhagen International Studies Program,
- Area of concentration: environmental policy

Work History

- 2008 - Present:** Senior Development Engineer, EAPC Wind Energy Services
- 2005 - 2008:** Assistant and Project Manager, Airtricity North America
- 2003 - 2004:** Energy Engineering Surveyor/Conservation Specialist, Kema-Xenergy
- 2000:** Assistant Designer Intern, Insinooritoimisto Enmac Oy

Relevant Experience

EAPC Wind Energy Services - *Senior Development Engineer*

- Consulting on the development of portfolios for multiple clients.
- Marketing and business acquisition.
- Performing site feasibility studies including wind resource assessment and wind farm design.
- Successfully completed WindPRO training course.

Airtricity North America - *Assistant Project Manager – Construction - Roscoe and Champion*

- Managed 2M+ budget to design, build, and implement Regional Center and O&M facility.
- Collaborated with project manager in daily oversight of constructing 264 MHI and Siemens turbines.
- Apprenticed under several senior inspectors regarding wind farm construction.

Project Manager – Development – Steuben County New York

- Ethically signed on 23 landowners in contentious NY project, doubling size of project in 3 months.
- Managed New York regulatory requirements: Interconnection Studies, SEQR & EIS, and local processes.
- Negotiated with town officials and local Industrial Development Agency on payments schemes.
- Maintained efficient and effective PR campaign: held town meetings, landowner meetings, and bus tours.

Assistant Project Manager – Development – Albany New York

- Apprenticed under several land developers.
- Collaborated with local officials and state agencies to put together large wind forum for the Steuben project.

Kema-Xenergy - *Energy Engineering Surveyor*

- Collected energy data for equipment in large commercial buildings and skyscrapers.
- Organized and presented energy models of sites to the California Energy Commission.

Energy Conservation Specialist

- Performed cursory energy audits for residential sites.
- Conducted interviews with KEMA residential customers inquiring about their energy usage patterns.

Insinoritoimisto Enmac Oy - *Assistant Designer Intern*

- Adapted to European engineering standards and business culture.
- Facilitated design of industrial equipment using Finnish design software (Vertex).

Project Assignment

Business and Development Specialist

Educational Background

2005: BA in Government, Latin American Studies; Certificate in International Relations, Wesleyan University

- Semester study abroad at Universidad de Concepción, Concepción, Chile

Work History

2009 - Present: Project Developer, EAPC Wind Energy Services

2007 - 2009: Project Developer, Citizens Energy Corporation

2006 - 2007: Development Associate, Citizens Energy Corporation

2005 - 2006: National Climate Change and Clean Energy Campaign Coordinator, The State Public Interest Research Groups (PIRGs)

2005: Organizer, The State Public Interest Research Groups (PIRGs)

Summer 2004: Research Associate, Council on Hemispheric Affairs

Other Languages

Spanish

Relevant Experience

EAPC WIND Energy Services

Business and Development Specialist

- Consulting on the development of portfolios for multiple clients.
- Marketing and business acquisition.
- Performing site feasibility studies including wind resource assessment and wind farm design.

CITIZENS ENERGY CORPORATION

Citizens Energy Corporation is a non-profit corporation that exists to help make life's basic needs more accessible and affordable. At the same, Citizens Energy seeks to use market opportunities, through for-profit energy ventures, to help low-income families.

Project Developer, Wind Energy

Managed Citizens Wind's expansion of greenfield wind power development into the Northeast United States and Venezuela.

- Oversaw the development of 60 MW wind project in collaboration with the Penobscot Indian Nation and of 40 MW project in central Maine, with combined potential profit of \$5-10 million. Managed new project acquisition in New England and New York. Directed all aspects of project development, including land acquisition and land-lease negotiation, wind resource assessment, community outreach, permitting, environmental review, engineering, design, and financial modeling.
- Lead development of 100 MW Venezuela-based wind project with estimated first-phase profit of \$500K. Managed project development efforts, including wind resource assessment, early permitting, contractor

oversight, and budget planning and tracking. Negotiated consulting services contract to carry out all project development tasks. Conduct business in Spanish, including contract review and oral communication.

- Track changes in federal, regional, and state renewable energy and climate change policy.

Development Associate, Wind Energy

- Eliminated \$50 million dollars from construction cost of wind project in Quebec through detail-oriented review of foundation design and site's soil suitability.
- Worked closely with Citizens' strategic partner to finish project development and construction, while managing landowner relations for Citizens' 34.5 MW wind project in upstate New York (now operating).
- Supported project management of Citizens' portfolio of wind projects in Canada and the United States, including market and policy research, site identification and acquisition, financial and feasibility analysis, wind resource assessment, and site design. Projects totaled approximately 2000 MW of wind power potential and were located in Quebec, Ontario, Arizona, New York, Texas, upper Midwest, and the Northeast.

Other Experience

THE STATE PUBLIC INTEREST RESEARCH GROUPS (PIRGs)

The state PIRGs are a network of independent, state-based, citizen-funded organizations that advocate for the public interest.

National Climate Change and Clean Energy Campaign Coordinator

- Led national campaign on global warming and climate change with the goal of transitioning colleges, universities, and cities to renewable energy and energy conservation solutions.
- Researched and wrote sample policy proposals to curb greenhouse gases and implement alternative solutions.
- Compiled data on a range of renewable energy alternatives, including wind, solar, and alternative fuels, in order to serve as the organization's resource and clearing-house for renewable energy and global warming information.
- Designed and led training, both in person and over conference calls, for advocates and activists across the country.
- Spearheaded outreach program to build up network of speakers, experts, and researchers to help advance cause.

Organizer

- Canvassed door-to-door and led community organizing around MassPIRG's energy and climate change initiatives.

COUNCIL ON HEMISPHERIC AFFAIRS- *Research Associate*

Managing Editor of Washington Report on the Hemisphere, a highly respected policy research journal.

- Published articles in Washington Report on the Hemisphere, Scoop.com, and various other media outlets.

Project Assignment

Senior Business Analyst

Educational Background

2008: Yale School of Management, Master of Business Administration

1998: Middlebury College, Bachelor of Arts in English (*summa cum laude*)

Work History

2008 - Present: Senior Business Analyst, EAPC Wind Energy Services

2007: New Business Group Summer Associate, enXco

2005 - 2006: Executive Director, Environmental Action

2002 - 2005: Director, New Hampshire Public Interest Research Group

Relevant Experience

Senior Business Analyst, EAPC Wind Energy Services

- Spearhead market research in the turbine manufacturing, balance-of-plant, and O&M markets in North America.
- Conduct economic and detailed capital cost, cash flow, and valuation analysis of wind power projects.
- Conceive and shape market strategy for large corporate clients weighing entry into the renewable energy industry, with a particular focus on opportunities within supply chains, turbine manufacturing, project operations and maintenance, and greenfield and early-stage development.
- Build expertise in U.S. wholesale electricity markets, as well as economic consequences of renewable energy standards and carbon constraints.

New Business Group Summer Associate, enXco

- Co-authored \$7M bid to develop 1MW solar photovoltaic project.
- Analyzed biofuel and renewable energy firms enXco considered for buyout and partnerships.
- Researched and modeled quantitative business cases for developing renewable power projects in key U.S. states based on expected power prices, required return, incentive and regulatory support, and available renewable resources. Presented recommendations to senior management.
- Collaborated with finance groups to refine power pricing models and to negotiate tax equity agreements with investment partners.

Other Experience

Executive Director, Environmental Action

- Hired, trained, and supervised policy research, political, and communications staff in Boston, Denver, and Washington, D.C. Administered \$1.4 million budget.
- Represented organization at press events with members of Congress to support the Production Tax Credit, an aggressive federal RPS, and other policy initiatives.

Director, New Hampshire Public Interest Research Group

- Drove education and advocacy efforts with New England congressional delegation, the state Legislature, and state regulatory agencies.
- Appointed to stakeholder groups drafting rules for regional carbon cap-and-trade agreement and funding for clean energy development.
- Directed policy research into state and regional energy policy challenges.
- Co-authored series of reports on clean energy and energy efficiency policy options.

Project Assignment

Senior GIS Analyst

Educational Background

2003: Bachelors Degree in Geography, GIS Specialty, Keene State College

Work History

2008 - Present: Development Specialist, GIS Analyst, EAPC Wind Energy Services

2005 - 2008: Assistant Vice President, Airtricity Inc.

2004 - 2005: Development Associate, Airtricity Inc.

2003 - 2004: Market Research Analyst, Airtricity Inc.

Relevant Work Experience

Development Specialist, GIS Analyst, *EAPC Wind Energy Services, LLC*

- Chief GIS analyst and cartographer with in-depth development and project management skills.
- Successfully completed WindPRO training course
- Project manager for several potential onshore wind projects in the State of Rhode Island
- Lead coordinator for state-wide feasibility studies for developer clients
- Developing interactive GIS maps for clients using ArcEditor software
- Evaluating current energy market conditions for future business strategies

Assistant Vice President, *Airtricity Inc.*

- Managed two 50+ MW wind energy projects in New York while maintaining GIS databases for Northeast Development Region.
- Trained ESRI ArcMap 9.1 GIS software to Airtricity employees
- Created, updated, and maintained GIS databases for 11 projects in four regions
- Established tax map acquisition guide for North American project managers
- Developed highly detailed thematic maps for Airtricity's Board of Directors
- Completed intricate Pennsylvania site identification map for Governor
- Effectively executed several 28-year wind energy agreements
- Managed the ordering, installation, and maintenance of 60m HD met masts

Development Associate, *Airtricity Inc.*

- Primary focus on nine month long permitting process for a 40.5MW wind farm in New York. Maintained efficient methods of GIS programming and cartography.
- Identified and visited 11 Greenfield sites in New York and Pennsylvania to make recommendations to Airtricity Inc. Vice President
- Successfully permitted Airtricity's first wind project in North America, a 40.5MW wind farm in Central New York
- Achieved successful 40.5 MW grid interconnection with NYSEG Corporation
- Implemented landowner prioritization guide for Airtricity Inc.

Market Research Analyst, *Airtricity Inc.*

- The second employee of a start-up renewable energy company, reporting directly to the company CEO.
- Researched market structures in nine states, primarily New York and Texas
- Formulated streamline process for municipal tax map acquisition
- Analyzed surface roughness to determine impacts to wind velocity
- Developed interactive mapping database for potential wind energy sites
- Bulk geo-referenced raster tax maps for overlay on wind resource grids
- Coordinated GIS software standards with company's Midwest subsidiary

Project Assignment

Electrical Engineer

Educational Background

2001 - 2001: Master in Energy Studies, University of Melbourne

1996 - 2000: Bachelors of Engineering, Rensselaer Polytechnic Institute

Work History

2008 - Present: Electrical Engineer, EAPC Wind Energy Services

2006 - 2008: WTG Technical Support Engineer, Vestas

2003 - 2005: Sales and Projects Electrical Engineer, Vestas

2001 - 2002: Electrical Engineer, Atlantic Orient Corporation

Relevant Work Experience

Electrical Engineer, EAPC Wind Energy Services

- He is the primary individual responsible for transmission assessments in the screening and development of new wind turbine projects.
- Contributes to wind assessment activities and uses his considerable experience with wind turbine technology to provide expert advice on the details of wind turbine internal components.
- Has successfully completed the WindPRO training course.

WTG Technical Support Engineer

- Was responsible for a wide variety of technical support tasks in Australia, supporting over seven wind farms in Australia and New Zealand totally over 250 turbines.
- He coordinated inspections, damage reporting, and failure analysis on a number of turbine components including generators, generator bearings, wind turbine controllers, wind turbine grid support equipment, yaw bearings, and blades.
- Provided call-in technical support for wind turbine technicians for trouble shooting and wind turbine SCADA issues.
- Oversaw the repair and maintenance of grid support devices for wind farms, including Statcon and SVC systems.
- Created technical reports for customers on failures, failure analysis, on-going technical issues, and major repair activities.
- Performed various internal technical reporting activities, including long term failure and repair costs for major issues and processed over one thousand turbine component damage reports.

Sales and Projects Electrical Engineer

- Provided electrical engineering support for sales, projects, construction and service activities.
- Carried on his work with wind turbine electrical modelling by assisting with development and validation of wind turbine transient electrical models on the PSCAD and PSS/E platforms for the Vestas V80-1.8MW and V47-660kW wind turbines.
- Supported end users of these models including project developers, utilities, and grid support solution providers.
- Responded to enquiries regarding grid connection issues for wind turbine

generators, including grid interconnection request forms.

- Provided technical support for on electrical equipment including medium voltage switchgear, generator step up transformers, and temporary power solutions during wind farm construction.
- Reviewed drawings and compiled documentation packages for wind turbine projects, including balance of plant design documentation.

Electrical Engineer, Atlantic Orient Corporation

- Responsibilities included design improvements, production, and quality control for wind turbine electrical and control panels; interpretation of electrical codes for wind turbine applications, and field service activities for small scale wind turbines.
- Worked with the electrical transient simulation package ATP on the development, documentation, and use of electrical transient models for a 50kW induction generator wind turbine and a 10kW direct drive permanent magnet generator wind turbine.
- Projects he was involved in spanned from Chile to Arctic Canada and Alaska.

Project Assignment

Atmospheric Scientist/Wind Analyst

Educational Background

2004: University of North Carolina – Asheville – BS in Atmospheric Science and Applied Mathematics

Work History

2008 - Present: Atmospheric Scientist, EAPC Wind Energy Services

2005: Summer Intern, Delta Airlines

2004: Technical Assistant, Watershed Concepts

2003: Hydrology Technician, U.S.G.S.

Relevant Experience

EAPC Wind Energy Services - *Atmospheric Scientist*

- Successfully completed WindPRO training course
- Analyzed buildable areas for wind farm layouts in WindPRO
- Determined total energy output
- Assisted in writing reports
- Monitored meteorological data coming in from towers
- Validated data

Other Experience

Delta Airlines - *Summer Intern*

- Analyzed maps of various levels for various isobars.
- Learned how to forecast turbulence.
- Plotted twice daily routes used by pilots between North America and Europe.

Watershed Concepts - *Technical Assistant*

- Organized maps of flood plains.
- Digitized flood plain maps and profiles for use in automated watershed modeling using GIS.
- Assisted in daily administrative activities related to the quality production of FEMA flood maps.

U.S.G.S. - *Hydrology Technician*

- Assisted in routine collections of surface-water, ground-water, and water quality data from strategically located gauging and monitoring stations and wells to support timely data collection and analysis efforts.
- Assisted in performing laboratory analysis of water samples to determine specified sediment, chemical, or biological concentrations or physical characteristics.
- Collected field measurements and completed office calculations for stream discharge measurements.

Arne Rickert

Project Assignment

Meteorological Tower Operations Manager

Educational Background

1981 - 1986: University of North Carolina – Chapel Hill – BA in English and Latin American Studies

1978 - 1981: The Lawrenceville School

Work History

2007 - Present: Met tower operations manager, EAPC Wind Energy Services

2001 - 2007: Corporate Sales Associate, Berlitz Language Services

2000 - 2001: Vice President, Systems Development, Urban Data Solutions

1999 - 2000: Director of CAD Development, Urban Data Solutions

1997 - 1998: Division Director, Time Warner Electronic Publishing

1994 - 1997: Director of Online Development, Time Warner Electronic Publishing

1992 - 1994: Associate Director, Little Brown & Company

1998 - 1992: Subsidiary Rights Manager, Random House, Inc.

1986 - 1988: Subsidiary Rights Associate, Random House, Inc.

Relevant Experience

Met tower operations manager, **EAPC Wind Energy Services**

- Installations and site surveys in NY, ME, MA, MD and Venezuela



REGISTRATIONS AND CERTIFICATIONS

American Institute of Certified Planners 013504

LEED-Accredited Professional

OSHA Construction Safety 10-Hour Training

OSHA HAZWOPER 40-Hour Training and Refreshers

PROFESSIONAL AFFILIATIONS

RI Chapter American Planning Association, Professional Development Officer

Women's Transportation Seminar, RI Chapter

Grow Smart RI, Board of Directors

Rhode Island Society of Environmental Professionals, Board of Directors, past Chair

Millis, MA Conservation Commission, past Co-Chair

EDUCATION

University of Massachusetts, Amherst:
B.S., Environmental Design, 1974

Northeastern University:
Certificate of Professional Achievement in Hazardous Waste Management, 1996

RELEVANT EXPERIENCE

Ms. Sherrill is PARE's principal planner for municipal and transportation projects. She is a specialist in transportation planning and permitting for infrastructure and natural resource management projects. Ms. Sherrill has conducted public participation programs, maintained federal and state agency coordination, and addressed land use analysis, visual assessment, cultural resource impacts, hazardous waste assessments, and compliance with municipal and regional plans. She serves on the Board of Directors for Grow Smart RI and the Rhode Island Chapter of the American Planning Association. She received the RIAPA Distinguished Service Award in 2008, and she is past president of the Rhode Island Chapter of the Women's Transportation Seminar and past chairman of the Rhode Island Society of Environmental Professionals. Representative project experience includes:

- **Highland Park Wind Energy Feasibility Study:** Principal planner for analysis of zoning requirements, local approval process, and site selection. Cumberland, RI.
- **Aquidneck Island Planning Commission - West Side Master Plan:** Deputy Project Manager for a master plan of lands along the western side of Aquidneck Island to address the development and/or preservation of parcels along a 10-mile long corridor west of West Main Road (Route 114). Newport, Middletown, and Portsmouth, RI.
- **Town of Tiverton – Economic Development Plan:** Project Manager/Principal Planner for the completion of a plan to prepare the Town for anticipated development pressure. Components included market analysis, analysis of a business survey, public participation, assessment of utility infrastructure, zoning recommendations and action strategies for economic development. Tiverton, RI.
- **Town of Bristol – Metacom Avenue Corridor Management Plan:** Project Manager/Principal Planner for development of a corridor plan using traffic improvements and design guidelines to create a sense of place and improve the quality of life for adjacent residential neighborhoods along Metacom Avenue, the highest volume roadway in Bristol, RI. Services included an inventory of existing traffic conditions, a preliminary speed study, a review of signal plans and crash data from the Town and RIDOT, preparation of zoning tables identifying traffic generation of permitted uses under current zoning, and recommendations for short and long term traffic improvements and zoning amendments for creation of a mixed use district, traffic overlay zone, and design guidelines. Bristol, RI.
- **Barrington Housing-Land Use Planning Study:** Project Manager/Principal Planner for planning study to focus on two large parcels of land that recently became available for redevelopment—the campus of Zion Bible College and the Sowams Nursery property, as well as a parcel purchased by the Barrington Housing Trust and a neighborhood business district. The Town's goal is to apply innovative planning strategies developed in conjunction with proactive public outreach to create a framework that facilitates production of a range of housing types and densities for these and other priority sites in town. Barrington, RI.
- **Utility Undergrounding Master Plan:** Principal Planner for Master Plan developed to assist in prioritizing the reconstruction of borough streets and

sidewalks with undergrounding of utilities. Tasks included development of a Master Plan for Undergrounding including identification of areas for undergrounding aerial utilities, preliminary costs, and potential funding sources; and several public workshops. Stonington, CT.

- **Aquidneck Island Planning Commission – LNG Tanker Transit Impact Study:** Principal Planner for an assessment of the impact of proposed liquid natural gas (LNG) transit—resulting from the potential establishment of an LNG terminal in Fall River, MA or Providence, RI—on recreational and commercial boating on the waters of Narragansett Bay and Mount Hope Bay. Newport, Middletown, and Portsmouth, RI.
- **East Providence Waterfront Special Development District - Tax Increment Financing Consultant Services:** Principal Planner for project team to review infrastructure plan and provide planning services. East Providence RI.
- **Town of Middletown – Corporate Buildout Analysis:** Principal Planner for assessment of existing and potential office/light-industrial space within the Town to assist the Town in strategically positioning itself to attract and retain office development. Middletown, RI.
- **Town of Portsmouth – Shoreline Drive Gateways Feasibility Study:** Principal Planner for a feasibility study of possible “gateways” at both ends of the proposed Shoreline Drive Corridor, an alternative north/south transportation corridor recommended in the Aquidneck Island West Side Master Plan. Services include base plan development, traffic studies, alternatives development, utility coordination, Navy coordination, design recommendations, task force meetings, and public meetings. Portsmouth, RI.
- **United American Hydropower Corporation – Environmental Assessments:** Conducted Phase I site investigations for hydroelectric facility, including municipal, state and federal documentation of past site use, past and current site worker interviews, and report preparation in accordance with ASTM standards. Prepared Health and Safety Plan and conducted Phase II soil and groundwater exploration of site of former paper mill. Harrisville, NY.
- **Dolgeville Hydroelectric Facility – Phase I Environmental Assessment:** Conducted Phase I site investigations for hydroelectric facility including municipal, state and federal documentation of past site use, past and current site worker interviews, and report preparation in accordance with ASTM standards. Dolgeville, NY.
- **Rhode Island Department of Transportation – Improved Access to Quonset Point/Davisville:** Performed water quality impact analysis and wetland delineation according to US Army Corps of Engineers and RI Division of Freshwater Wetlands parameters for the construction of a seven-mile access road. Analysis included identification of wetlands which would be impacted by stormwater runoff and drainage improvements associated with the new roadway. East Greenwich and North Kingstown, RI.

PUBLICATIONS/PRESENTATIONS

Sherrill, Pamela, 2008. *Wind Power: A Renewal Energy Opportunity for Rhode Island*. Moderator, Grow Smart RI Power of Place Summit, Providence RI. May 2, 2008



REGISTRATIONS AND CERTIFICATIONS

Professional Engineer –
Rhode Island,
Massachusetts,
New Hampshire

PROFESSIONAL AFFILIATIONS

American Society of Civil
Engineers
Association of State Dam
Safety Officials

EDUCATION

University of Rhode Island:
M.S., Civil Engineering 2001
B.S., Civil & Environmental
Engineering, 1992

RELEVANT EXPERIENCE

Mr. Bellisle possesses more than 15 years of experience working on a variety of geotechnical, foundation, civil, and dam engineering projects. He has acted as principal-in-charge, project manager, and project engineer for assignments involving geotechnical design, site investigations, testing, instrumentation, and construction monitoring. His experience also includes over 150 Phase I inspections and Phase II design services for earthen and concrete dams. Relevant project experience includes:

- **State Police Radio Towers:** Project Engineer responsible for the design and supervision of subsurface investigations to support the replacement of five radio towers at five separate locations in southern Rhode Island. The exploration programs were design to be compatible to the existing facility, provide design parameters for the foundation system, and allow flexibility in siting the anticipated tower. Various locations - Southern Rhode Island.
- **Towantic Energy Center:** Project Manager for the site evaluation in support of the development of a gas-fired power plant. The site evaluation included subsurface investigations, field testing, resistivity testing, and a comprehensive laboratory program. Oxford, CT.
- **Holliston Standpipe Tank:** Project Manager for the implementation of a field quality control program to ensure proper site preparation and backfill. Holliston, MA.
- **NSTAR Substation 385-D Design:** Principal-in-Charge and Geotechnical Project Manager for the design and preparation of construction documents for a 225MVA Distribution Substation in South Boston. The geotechnical design included pile supported foundations within the Boston Blue clay to limit differential settlements across and between components and spread footings for the control house. The design required coordination with PARE's structural engineering division and NSTAR to locate conduits and provide necessary structural elements to support the anticipated equipment loads. South Boston, MA.
- **RI Army National Guard – Quonset Aviation Support Facility:** Principal-in-Charge of geotechnical investigations and a report which provided recommendations for building support, pavement design, and general site construction for the design of a 150,318 sq. ft. hangar and work area. North Kingstown, RI.
- **South Quay Ship/Rail Terminal:** Senior Engineer for the preliminary site evaluation which included implementation of a subsurface investigation and sampling program, laboratory data review, and an evaluation of soil consolidation resulting from the development of a 44-acre container-port on man-made land on the Providence River. East Providence, RI.
- **RIDOT Bridges:** Project Engineer for monitoring soil borings and rock cores to determine subsurface conditions beneath the abutments. Prepared subsurface profiles and recommendations based on accumulated data. Southern Rhode Island.
- **Tiverton Elementary School:** Geotechnical Project Engineer responsible for the preparation of a geotechnical report for a new \$8.5 million, 40,000-SF elementary school off North Brayton Road. Tiverton, RI.

- **Lincoln Middle School:** Geotechnical Project Engineer responsible for preparation of a geotechnical report for design of a new \$25 million, 135,000-SF middle school building and complex. Duties included developing, coordinating, and conducting a subsurface investigation across the entire proposed site, undertaking laboratory analyses, determining an allowable recommended bearing capacity, and preparation of the geotechnical report. Lincoln, RI.
- **New Dining Hall – University of Rhode Island:** Geotechnical Project Manager for geotechnical investigations and design for a new \$13 million, two-story, 47,000-SF dining hall. The foundation design criteria study includes the development of cross sections of the soil boring data, which are used to estimate allowable soil/rock bearing pressures and settlements, and to estimate maximum settlements of the proposed building foundations. Kingston, RI.
- **BioScience/BioTech and Chemistry Buildings – University of Rhode Island:** Geotechnical Project Manager responsible for the design and implementation of subsurface investigations for two new building projects. Kingston, RI.
- **Norwood High School:** Geotechnical Project Manager for the evaluation of subsurface conditions and development of geotechnical recommendations for the design of a multi-story school building and athletic facility. Throughout the project, coordinated with the project civil and structural engineers to resolve settlement and drainage concerns through designed solutions. Norwood, MA.
- **Fall River State Pier - South Basin Improvements:** Principal-in-Charge for the planning, design, permitting and preparation of bid documents for this \$10M waterfront infrastructure project. Design included a 400 foot long fixed pier, 400 foot long bulkhead structure and 180 foot long ADA compliant floating dock for support of this multi-use waterfront facility. Fall River, MA.
- **Proposed Providence Hotel:** Principal-in-Charge/Project Manager for the implementation of a subsurface investigation program and the development of a design basis report for the construction of a proposed 18-story hotel in downtown Providence. The project included a review of feasible foundation alternatives, a review and summary of seismic design criteria along with an evaluation of liquefaction potential, and an evaluation of possible deep foundation configurations. Providence, RI.
- **Rodney Hunt Facility Expansion:** Project Manager for the implementation of a subsurface exploration program and development of a design basis report for the proposed structure and crane system. The project included on evaluation of liquefaction potential and the development of design parameters for use by the project structural engineer. Orange, MA.
- **Emerson Swan Facility Expansion:** Project Manager for the implementation of a subsurface exploration program and the development of rock removal requirements in support of the proposed expansion. The project indicated test borings, test pits, the development of bedrock contours, and the preparation of construction documents to support the site preparation. Randolph, MA.



REGISTRATIONS AND CERTIFICATIONS

Professional Wetland
Scientist #1816

Certified Professional in
Erosion & Sedimentation
Control #2507

Certified Wetland Delineator
CCCE Rutgers University

Rhode Island Low Impact
Development Master Design
Certification

PROFESSIONAL AFFILIATIONS

Society of Wetland Scientists

Rhode Island Association of
Wetland Scientists

Association of
Massachusetts
Wetland Scientists

International Erosion Control
Association

Member, Cumberland (RI)
Conservation Commission

EDUCATION

Southern Connecticut State
University:
B.S., Earth Science 1988

University of Rhode Island:
Graduate Level Courses In
Wetland Ecology, Wetland
Field Investigations,
Wetlands and Land Use

Cook College of Continuing
Education (Rutgers
University):

Vegetation Identification for
Inland Wetland Delineations,
Methodology for Delineating
Jurisdictional Wetlands

RELEVANT EXPERIENCE

Mr. Lang is an environmental specialist with more than 18 years of diverse experience applying environmental science disciplines to the planning, design, permitting and implementation of land development projects in Southern New England. Over his career Mr. Lang has performed more than 100 wetland identification and delineation projects in Southern New England on sites ranging in size from less than an acre to hundreds of acres. His capabilities include feasibility studies and project planning; environmental impact, avoidance, minimization, alternative analyses and wetland mitigation design; appeals and enforcement actions; erosion and sediment control planning and implementation; construction monitoring; wetland delineations and reviews; GIS mapping; and reports and permit applications for highway, utility, commercial, and residential projects, both coastal and inland. Current projects include permit applications for: Rhode Island Department of Environmental Management Freshwater Wetlands; Coastal Resources Management Council (CRMC); Rhode Island Pollutant Discharge Elimination System; Water Quality Certifications; US Army Corps of Engineers Section 404; Massachusetts Wetlands Protection Act Filings; Chapter 91 Waterways Licensing; and Massachusetts Environmental Policy Act Reviews. Representative project experience includes:

- **Tiverton Elementary School:** Environmental Scientist responsible for environmental permitting for a new \$8.5 million, 40,000-SF elementary school off North Brayton Road. The 300-student facility includes two classroom wings, a kindergarten wing, a library/media center, student dining, administration offices, and a combined auditorium/gymnasium. Tiverton, RI.
- **Cove Bridge Waterline Design:** Successfully permitted through CRMC the construction of 4,800 linear feet of 10-inch ductile iron water line to replace 6- and 8-inch waterlines along two state-owned roadways. This project included 360 feet of 10-inch exposed waterline attached to the Cove Bridge, which replaced an existing subaqueous pipeline beneath the Sakonnet River. Portsmouth, RI.
- **Warren Bike Path:** This rails to trails project extends approximately 0.85 miles from the tidal portion of the Kickemuit River to the intersection with Long Lane. The project required unavoidable impacts to adjacent wetland resources, which is prohibited under RI Coastal Resources Management Council (CRMC) regulations. Prepared permit application materials demonstrating the unavoidable nature of the impacts. Coordinated efforts to minimize impacts by substituting a timber bridge for a concrete culvert. Prepared variance documentation and obtained CRMC Category B Assent for the project. Warren, RI.
- **Serpentine Road:** Performed field reviews for potential water quality improvement Best Management Practices (BMP's) along Serpentine Road. The road is located directly adjacent to a public water supply, the Kickemuit Reservoir. Identified opportunities included water quality swales and a constructed wetland. Participated in the development of 10% design plans and generated a summary report. Project funded through a Clean Water Act Section 319 non-point source grant. Warren, RI.
- **Warren River and Belcher Cove Water Quality Improvement Study:** Lead environmental scientist in a watershed evaluation to identify non-point source pollutant abatement opportunities in the Warren River and Belcher

Cove watersheds. The study included a review of existing land use, soils, and environmental constraints in the highly developed watersheds, and evaluation of structural and non-structural Best Management Practices to minimize or eliminate the generation or transport of non-point source pollutants. Participated in field reconnaissance and map review. Lead author for Summary Report documenting the study. Project funded through a Clean Water Act Section 319 non-point source grant. Warren, RI.

- **Bristol Town Beach Stormwater Outfall Retrofit:** Lead Project Environmental Scientist for watershed study and design of stormwater outfall retrofit to incorporate best management practices (BMP's) to improve beach water quality. The project includes the identification of the tributary sub-watershed limits; performance of a hydrologic analysis; development of conceptual and final designs for water quality improvement BMP's targeting bacteria removal; and the preparation of CRMC permit applications. Funded in part by a Clean Water Act Section 319 Nonpoint Source Management Grant, the goal of the project is to address bacterial contamination after rainfall events that have previously resulted in temporary beach closures. Bristol, RI.
- **Mt. Hope Maritime Terminal:** Prepared technical documentation to support a CRMC Assent Modification for construction of new sheet pile bulkhead, wave fence system and dredging. Portsmouth, RI.
- **Sand Point Ferry Pier:** Responsible for preparation and submittal of a CRMC Request for Maintenance Certificate for the replacement of a deteriorated pier facility used to provide emergency services to the residents of Prudence Island. Coordinated closely with Client and Civil Engineering staff to demonstrate that replacement of the structure qualified as a Maintenance activity. Portsmouth, RI.
- **Blount Oyster Pond Dredging:** Prepared a RI CRMC Assent Application for maintenance dredging of an existing oyster spawning pond located along the tidal Jenny's Creek on Prudence Island. Project included developing dredge plans, evaluating disposal areas, and coordinating with the Owner and the applicable regulatory agencies. Portsmouth, RI.
- **Westport Youth Athletic Association Sports Complex:** Project involved the development of seven new baseball and softball diamonds, three soccer fields, a field house with two indoor basketball courts and concession area, stormwater management system, and utilities on a 78.8 acre undeveloped parcel of land. Prepared Notice of Intent and Environmental Notification Form. Westport, MA.
- **Rhode Island Department of Transportation – Group 6 Bridges:** Responsible for natural resources inventories and assessment of project environmental impacts for Design Study Reports addressing selected bridges throughout the State. Statewide, RI.
- **Central Landfill Permitting – Rhode Island Resource Recovery Corporation:** Environmental Scientist responsible for the preparation and submission of the Stormwater Pollution Prevention Plan and the Construction Phase RIPDES Notice of Intent for the Phase II and III Permanent Cap project. Consulted on responses to review comments from the RI Department of Environmental Management related to Corporation's permit applications to relocate Cedar Swamp Brook. Johnston, RI.



RELEVANT EXPERIENCE

Mr. Lindgren has been involved in the planning, permitting, design, and project management of numerous land development and site engineering projects. His experience includes development of master and schematic design plans; procurement of local, state and federal permits; roadway, parking, and circulation design; utility design; hydrology and hydraulic engineering design; stormwater management; and construction administration. Representative project experience includes:

REGISTRATIONS AND CERTIFICATIONS

Professional Engineer –
Rhode Island,
Massachusetts

LEED-Accredited
Professional

MADEP Licensed Soil
Evaluator

PROFESSIONAL AFFILIATIONS

American Society of Civil
Engineers

Rhode Island Society of Civil
Engineers

EDUCATION

University of Massachusetts,
Dartmouth:
B.S., Civil Engineering, 1992

- **Bourne Mill Redevelopment:** Project Manager for an \$80 million, 330,000-SF residential and mixed commercial mill redevelopment. Services include site plan development, stormwater management, water & sanitary sewer evaluation and design, multi state and town/city permitting services, USGBC LEED consultation services, and construction-phase services. Tiverton, RI.
- **University of Rhode Island - Hope Dining Hall “LEED Silver Certified”:** Project Manager for a new \$22 million, two-story, 43,000-SF dining hall. Services included geotechnical investigations, wetland delineation and permitting, utility research and design, sanitary sewer evaluation, site plans, cost estimates, USGBC LEED consultation services, and construction-phase services. Kingston, RI.
- **University of Massachusetts Dartmouth – Cedar Dell Housing:** Project Manager for site/civil/structural engineering provided for Phase 1 & 2 renovations to the Cedar Dell South student housing complex. Project also included drainage improvements and structural engineering as well as landscape architectural services. Dartmouth, MA.
- **Rhode Island School For the Deaf Site Feasibility Study:** Project Manager for the feasibility planning study of several sites to determine their suitability for the development of a proposed new school facility. Analyzed soil conditions, wetland and topography constraints, utility infrastructure, and access for each site. Prepared several site conceptual plan studies and conceptual cost estimates. Lincoln, RI.
- **Murray Middle School - The Lincoln School:** Project Engineer responsible for providing site design improvements for the renovation and expansion of the Murray Middle School – part of the private Lincoln School complex. The project included site grading and improvements, drainage and utility design, topographical survey services, construction administration services, and wetland permitting. Providence, RI.
- **Lincoln Middle School Site Feasibility Study:** Project Manager for study of several sites performed to determine the amount and suitability of developable land at each site for a proposed new middle school. Analyzed zoning issues, soil conditions, wetland and topography constraints, utility infrastructure, and access for each site. Ranked sites according to their suitability for the proposed construction and presented findings to the Town. Lincoln, RI.
- **Cass Park Improvements:** Project Manager for engineering and environmental services for renovations to a 12-acre city park including wetland delineation and permitting, drainage evaluation and design,

structural engineering for a pedestrian bridge, and landscape design. Woonsocket, RI.

- **Stoneridge Retirement Community:** Senior Project Engineer responsible for site design elements for a new residential retirement and nursing home development. The project included developing conceptual site layouts, preparation of Design Development/Permitting and Construction Level Documents and Specifications, as well as full-service Construction Administration services. Stonington, CT.
- **Mashantucket Pequot Tribal Nation Phase 7A Housing Development:** Senior Project Engineer for the design of three miles of roadways and supporting utilities for the construction of up to 200 homes on ½-acre sites on 144 acres of tribal land. The design included extension of utility services from the Tribe's existing water and wastewater treatment facilities to provide potable water and sanitary sewer services for the housing development. Utility design was also provided for natural gas, road drainage, communications, power, and street lighting. The roadway design incorporated sidewalks and curb cuts for the individual lots. Ledyard, CT.
- **Highlands at Lincoln:** Project Manager for the development of a 180-unit 177,000-SF senior independent and assisted living residential development. The project includes preparation of conceptual, design development, permitting and construction documents. Permitting through the Town of Lincoln, and environmental permitting with the RI Department of Environmental Management. Lincoln, RI.
- **Martha's Vineyard and Nantucket Steamship Authority – Vessel Maintenance Facility Improvements:** Senior Project Engineer for site/civil engineering at this ferry maintenance site. Provided grading and utility plans, details, and technical specifications for the site improvements including water, sewer, gas, and electrical services, curbing and sidewalks, proper grading for landscaping, drainage, and erosion control, evaluation and redesign of the drainage system, and pavement design. Fairhaven, MA.
- **Whitehall Lakes Condominiums Drainage Improvements:** Project Manager for preparation of design development, permits, and construction documents to improve the residential development's drainage pattern and reduce the flooding experienced in several of the buildings on-site. Amesbury, MA.
- **Comfort Inn Improvements:** Project Manager for geotechnical investigations, site improvements including drainage, sidewalks, curbs, ADA accessibility, driveway and parking lot, and permitting for improvements to a Comfort Inn which included a new vestibule, portico, and covered pool structure. Pawtucket, RI.
- **Hopkinton Police Station:** Senior Project Engineer for project involving construction of a new 10,000-SF, two-story police station and associated site improvements, including driveways, parking areas, utility services, stormwater management system, site pedestrian walkways, landscaping and site amenities. Services also included wetland flagging, permitting, construction-phase services, and attendance at Building Committee, Conservation Commission, and Planning Board meetings. Hopkinton, MA.

SOURCEONE INC. RESUMES OF KEY RESOURCES

Thomas E. Converse, P.E. SourceOne
Vice President

Education

Bachelor of Science degree in Electrical Engineering from Northeastern University; Registered Professional Engineer: Commonwealth of Massachusetts; Licensed Master Electrician; Commonwealth of Massachusetts; Certified Distributed Generation Professional: Association of Energy Engineers

Summary of Experience

Mr. Converse has over 30 years experience in the electrical industry; with municipal and investor owned electric utilities, as well as a consultant, in the areas of transmission, power distribution, substation design, system protection, meter data management and metering. In addition, he has operated his own electrical contracting business. He has testified at technical hearings before the Massachusetts and Maine Public Utility Commissions, and spoken at national conferences on billing and metering issues.

Detailed Project and Managerial Experience

Mr. Converse's management experience includes heading up the Metering Operations group for NSTAR Electric & Gas Corporation. His duties included overseeing 350 employees, setting the strategic direction for Metering and testing, and overall responsibility for a \$34 million dollar annual budget. Major initiatives included development of metering standards, a system AMR deployment strategy, development of inventory controls, and implementation of standardized testing requirements across the multiple operating companies of NSTAR. Other duties included heading up meter reading re-routing efforts and development of regulatory procedures to provide customers with ability to access to metering data via secure web site access, or to tie output into customer on site energy management systems.

Mr. Converse's engineering projects have included transmission and distribution substation design-build installations. His experience includes conceptual layout, budgetary planning; development and construction of projects fm 600 volt through 345 kV.

Affiliations

Mr. Converse's strategic planning work includes leading several organizational design and consolidation efforts related to industry mergers. He has participated in regulatory proceedings and technical hearings, including the Massachusetts Electric Industry Restructuring. He has also testified at technical hearings and spoken nationally on issues related to deregulation of metering services and on technical advancements in metering technology.

Mr. Converse is a member of the National Society of Professional Engineers, Institute of Electrical and Electronics Engineers, the International Association of Electrical Engineers and is the President of the Massachusetts Society of Professional Engineers.

Patrick A. Murphy, SourceOne
Director of Operations

Education

Mr. Murphy holds a Bachelor of Science degree in Electrical Engineering from Clarkson University and is a candidate for a Masters in Business Administration from Syracuse University.

Summary of Experience

Mr. Murphy is responsible for managing the Operations staff at the Boston Office of SourceOne. He has 11 years experience in the electrical industry; with municipal and investor owned electric utilities focused in the areas of transmission and power distribution, substation design, system protection and metering. In addition, he has worked for a multi national Power Equipment Manufacturer as a Field Service Engineer. He has 6 years of management experience both in the manufacturing and project management fields.

Detailed Project & Managerial Experience

Mr. Murphy's management experience includes supervising Substation Operation group at NSTAR Electric & Gas and the Metering Operations group for National Grid. He also led a team of engineering and various sub-contractors for a \$2 Million infrastructure upgrade at a Steel Manufacturing facility in Cartersville, GA while with ABB Service Inc. Mr. Murphy's accomplishments included the implementation of a system wide standard of installation and replacement of electric and gas meters, creation of productivity reports to track project progress and best practices, investigated and resolved customer complaints. Additionally, he has worked with various entities to resolve power quality and other electrical issues within their facilities.

Mr. Murphy's engineering experience includes distribution equipment upgrades, HV & LV substation maintenance, facility infrastructure audit, electrical one line development and new equipment installation projects. His abilities include: budgetary planning, conceptual development of underground and overhead distribution systems, due diligence investigations and project management for wide range of disciplines including upgrades or installation of new facilities.

Mr. Murphy has consistently leveraged his knowledge and strong analytical skills to procure his customers cost effective and reliable solutions for energy needs including contingency planning, outage and equipment failure analysis

CONSULTING ENGINEERS GROUP INC. RESUME

EDMUND F. FELONI, P.E.

Northeastern University

B.S. in Electrical Engineering (Power)

Wentworth Institute of Technology
Licensed Professional Engineer:

A.S. in Electrical Engineering Technology
Massachusetts, New Hampshire, Maine,
Rhode Island, Connecticut, New York, Maryland

Professional Affiliations:

National Society of Professional Engineers
National Fire Protection Association
IEEE, Power Engineering Society

Mr. Feloni is a principal engineer specializing in the design of, and modifications to, transmission and distribution substations and underground & overhead circuits along with telecommunications systems. Mr. Feloni has consulted to investor-owned and municipal electric utilities, CATV and telephone companies, and well-known colleges and universities on a variety of electrical, construction, and telecommunications issues. Mr. Feloni has specified and completed designs for the implementation of both large and small-scale SCADA/EMS systems for several utilities and electrified rail systems. This work included equipment and installation specifications, modifications to switchgear, reclosers and controllers, and other distribution equipment, programming and training/operating procedures, wiring and control schemes, and load shedding and peak shaving philosophies.

His system distribution projects include system conversions, circuit extensions and analysis, power factor correction, relay settings and fuse coordination. He has directed utility line crews in the cutover sequences of system voltage conversion projects, storm restoration, equipment decommissioning and installation. Mr. Feloni has an extensive background in the design, operation, and installation of underground high voltage systems and secondary network systems. He has designed and installed a variety of distribution and subtransmission systems utilizing PILC cables as well as solid dielectric cables for public utility and private industry applications. He has completed numerous designs for new lines and facilities, substation and customer interconnections, switching schemes, contingency plans, along with applicable relay settings and fuse coordination.

Mr. Feloni has also engineered and planned the modification and installation of several 138 kV class and below distribution substations, switching stations and primary metering stations. This work has included the addition of circuit breakers, automatic switching schemes, SCADA interconnection, power transformer replacements, relaying and metering. He has provided designs and construction supervision for cable crossings, both underground and overhead, on railroads, bridges, rivers, interstate and local highways, secondary roads, wetlands, and private developments.