

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF  
BENJAMIN R. BRAZELL  
PRINCIPAL  
ENVIRONMENTAL DESIGN & RESEARCH,  
LANDSCAPE, ARCHITECTURE, ENGINEERING  
& ENVIRONMENTAL SERVICES, D.P.C.  
217 MONTGOMERY STREET, SUITE 1000  
SYRACUSE, NEW YORK, 13202

1 **Q: Please state your name, employer, and business address.**

2 A: Benjamin R. Brazell, Environmental Design & Research, Landscape, Architecture, Engineering &  
3 Environmental Services, D.P.C. ("EDR"), 217 Montgomery Street, Suite 1000, Syracuse, NY  
4 13202-1942.

5 **Q: What is your position at EDR?**

6 A: Principal

7 **Q: How long have you been employed with EDR?**

8 A: I have been employed by EDR since 2004.

9 **Q: Please describe your educational background and professional experience.**

10 A: I received a Bachelor of Science Degree in Natural Resources Ecosystem Assessment from North  
11 Carolina University in Raleigh, North Carolina in 2001. I have been employed by EDR since  
12 February 2004. Since that time, I have worked in the capacity as Ecologist, Project Manager,  
13 Senior Project Manager, and Director of the Environmental Division before becoming Principal of  
14 Environmental Services in 2014. I have approximately 15 years of experience performing and/or  
15 supervising projects involving wetlands delineations, state and federal wetland permitting, habitat  
16 and ecosystem analysis, environmental impact assessments, and preparation of numerous state  
17 siting board applications and environmental impact statements. My resume is attached.

18 **Q: Please describe your current responsibilities with EDR.**

19 A: As Principal, I oversee all aspects of EDR's environmental assessment projects.

20 **Q: Have you previously testified before the New York State Public Service Commission or  
21 Siting Board on Electric Generation?**

22 A: I have previously sponsored testimony in the Matter of National Grid's petition to Amend the Article  
23 VII Certificate of Environmental Compatibility and Public Need for the 115 kV Fenner to Cortland #3

24 (formerly the Oneida to Cortland #3, PSC Case 70346) Transmission Line to allow interconnection  
25 of the proposed Cody Road Substation in the Town of Fenner, Madison County.

26 **Q: Have you previously served as an expert witness before any other court, agency, or other  
27 body on the subject you plan to offer testimony on today?**

28 A: I previously served as an expert witness in the Matter of the Application of Paulding Wind Farm III  
29 LLC for a Certificate of Environmental Compatibility and Public Need for the Timber Road III  
30 Transmission Line Case No. 15-1737-EL-BTX

31 **Q: What is the purpose and scope of your testimony in this proceeding?**

32 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

33 **Q: What portion(s) of the Application is your testimony sponsoring?**

34 A: Exhibit 1: General Requirements, Exhibit 3: Location of Facilities, Exhibit 4: Land Use, Exhibit 6:  
35 Wind Power Facilities, Exhibit 9: Alternatives, Exhibit 11: Preliminary Design Drawings, Exhibit 17:  
36 Air Emissions, Exhibit 21: Geology, Seismology and Soils, Exhibit 22: Terrestrial Ecology and  
37 Wetlands, Exhibit 23: Water Resources and Aquatic Ecology, Exhibit 27: Socioeconomic Effects,  
38 Exhibit 28: Environmental Justice.

39 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your  
40 direction and supervision.**

41 A: Yes.

42 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data  
43 or documents produced by persons other than yourself/your company? If so, please cite  
44 these sources. [These are independent studies, etc.]**

45 A: References are provided in the corresponding Exhibits.

46 **Q: Does this conclude your testimony?**

47 A: Yes.



## education

North Carolina State University, Raleigh, North Carolina, *Bachelor of Science*, 2001.

## professional affiliations

*Member*, American Wind Energy Association

*Member*, New York State Wetlands Forum

*Member*, Town of Dewitt Parks & Recreation Commission

## employment history

*Principal, Director of Environmental Services* Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C., Syracuse, New York, 2014 to Present.

*Vice President*, EDR Environmental Services, LLC, Syracuse, New York, 2011 to 2014.

*Associate*, EDR Environmental Services, LLC, Syracuse, New York, 2010 to 2011.

*Division Manager*, EDR Environmental Services, LLC, Syracuse, New York, 2009 to Present.

*Project Manager*, Environmental Design & Research, Syracuse, New York, 2004 to 2008.

*Project Scientist*, EcoScience Corporation, Raleigh, North Carolina, 2001 to 2003.

*Dendrology Tutor*, North Carolina State University, 2001.

## presentations and volunteer experience

Local Control vs. State Siting. Does it even Matter? 2016 AWEA Siting Conference, Charleston, SC. March, 2016.

Presenter. Wind Development Non-Wildlife Siting Issues – Sounds, Planes, and Views...Oh my!. 2015 AWEA Siting Conference, Austin, TX. March, 2015.

Presenter. Wetlands: Mapped vs. Actual, What You Don't Know About Wetlands Could Hurt Your Project. Environmental Breakfast Club of Central New York, Syracuse, NY. March, 2014.

Presenter. Successful Siting and Community Acceptance. 2013 AWEA Ohio Wind Energy Summit, Columbus, OH. September, 2013.

Poster Presentation. An Overview of the Relationship Between Permit Commitments and Construction Realities. 2013 AWEA Wind Power Conference, Chicago, IL. May, 2013.

Presenter. Typical Impacts & Benefits of Wind Power Development in New York State. 2012 Annual Conference, NY Upstate Chapter ASLA, Binghamton, NY. June, 2012.

Poster Presentation. New York's Article 10 Regulations, Potential Implications on New York State Wind Power Development and a Comparison to the Ohio Siting Process. 2012 AWEA Wind Power Conference, Atlanta, GA. May, 2012.

Presenter. The Relationship Between Permit Commitments and Construction Realities. 2012 NYS Wetlands Forum Annual Conference, Utica, NY. March, 2012.

Presenter. SUNY College of Environmental Science and Forestry (ESF), Renewable Energy Course. March 2010.

Presenter. Herkimer-Oneida County Land Use Training Conference. October 2009.

Presenter. Herkimer-Oneida County Wind Energy Conference. April 2008.

Volunteer. USFWS, Indiana Bat Telemetry Study, Glen Park Hibernaculum, Jefferson County. 2004.

## project experience

**Cassadaga Wind Project** – Managing EDR's responsibilities associated with this 62 turbine, 126 MW project located in the Towns of Cherry Creek, Charlotte, Arkwright, and Stockton, Chautauqua County, New York. This project is being reviewed under Article 10 of the Public Service Law and is anticipated to result in the first Article 10 Application submitted in the State of New York. To date, EDR has prepared the Public Involvement Program Plan, the Preliminary Scoping Statement, and the Stipulations document.



## project experience

**Jericho Rise Wind Farm** – Serving as EDR's Principal-in-Charge for the SEQRA review for this 37-turbine, 78 MW project, located in the Towns of Belmont and Chateauguy, Franklin County, New York. EDR prepared a Supplemental EIS, a Final EIS, and multiple support studies including a Visual Impact Assessment, Shadow Flicker Analysis, Cultural Resources Reports (Archaeology and Historic Resources), a Wetland Delineation Report, and a Rare Plant Survey. EDR is also responsible for obtaining wetland/stream permits from the U.S. Army Corps of Engineers and the NYS Department of Environmental Conservation.

**Arkwright Summit Wind Farm** – Serving as EDR's Principal-in-Charge for the SEQRA review for this 36-turbine, 78 MW project, located in the Town of Arkwright, Chautauqua County, New York. EDR prepared a Supplemental EIS, a Final EIS, and multiple support studies including a Visual Impact Assessment and Shadow Flicker Analysis. EDR is also responsible for obtaining wetland/stream permits from the U.S. Army Corps of Engineers and the NYS Department of Environmental Conservation.

**Scioto Ridge Wind Farm** – Managed the preparation of a Certificate Application submitted to the Ohio Power Siting Board for this 176-turbine, 300 MW project located in Hardin and Logan Counties, Ohio. EDR's responsibilities included attending work sessions with OPSB staff, directing other subconsultants, coordinating internal staff resources, and assuring a complete application was prepared/submitted in accordance with the Ohio Administrative Code. Also managed the preparation of a separate Certificate Application for the associated 4.8-mile 345 kilovolt transmission line, which was submitted subsequent to the wind farm application and also accepted as complete following its first submittal.

**Copenhagen Wind Project** – Directing EDR's responsibilities as a third-party consultant to the USFWS. As a result of potential impacts to federally-listed species, the developer is applying for an Incidental Take Permit. EDR is responsible for preparing all NEPA documentation associated with this action.

**Crown City Wind Energy Project** – Directed EDR's SEQRA review for this 44-turbine, 71 MW project, located in the Towns of Cortlandville, Homer, Solon, and Truxton, Cortland County, New York. EDR prepared a Draft EIS, and throughout this process worked closely with the Lead Agency's consultant. In support of the Draft EIS, EDR also prepared a Visual Impact Assessment, Shadow Flicker Analysis, Addendum Cultural Resources Report, and a Socioeconomic Report.

**Buckeye II Wind Power Project** – Managed the preparation of a comprehensive Application for a Certificate of Environmental Compatibility and Public Need submitted to the Ohio Power Siting Board for this 56-turbine, 140 MW project located in Champaign County, Ohio. EDR's responsibilities included conducting initial site reconnaissance to define the project layout, attending various work sessions with OPSB review staff, directing other subconsultants, coordinating internal staff resources, and assuring a complete application was prepared/submitted in accordance with the Ohio Administrative Code.

**Allegheny Wind Power Project** – Directed EDR's SEQRA review for this 29-turbine, 72.5 MW project, located in the Town of Allegheny, Cattaraugus County, New York. EDR prepared a Draft and a Final EIS, which resulted in successful issuance of SEQRA findings statement and local discretionary approvals in July 2011. Through these efforts, EDR has worked closely with the Lead Agency Special Counsel and consultant throughout the SEQRA review process, coordinated with interested state and federal regulatory agencies, and managed numerous subconsultants. EDR was also responsible for preparation of the SWPPP in accordance with the SPDES General Permit, which was approved by the NYSDEC in September 2011.

**Hardscrabble Wind Power Project (Compliance Monitoring)** – Initially managed EDR's role as Environmental Monitor for the construction and restoration of this 37-turbine project located in the Towns of Fairfield, Norway, and Little Falls, Herkimer County, New York. In addition to preparing an Environmental Compliance Manual and providing compliance training to the project contractors, EDR's responsibilities included overseeing construction activities, monitoring the environmental, agricultural, and archeological conditions on the construction site, reporting on compliance with environmental permits and conditions (including federal, state, and local permits and approvals), conducting bi-weekly SWPPP inspections in accordance with the SPDES General Permit, and serving as a liaison between agency representatives and the project contractor/developer.

**Timber Road II Wind Farm** – Managed the preparation of a comprehensive Application for a Certificate of Environmental Compatibility and Public Need submitted to the Ohio Power Siting Board for this 109-turbine, 150 MW project located in Paulding County, Ohio. EDR's responsibilities included attending various work sessions with OPSB review staff, directing other subconsultants, coordinating internal staff resources, and assuring a complete application was prepared/submitted in accordance with the Ohio Administrative Code. Irrespective of the project's aggressive schedule, EDR played a critical role in meeting the permitting deadline.



**Timber Road I Wind Farm** – Managed the preparation of a comprehensive Application for a Certificate of Environmental Compatibility and Public Need submitted to the Ohio Power Siting Board for this 35-turbine, 49 MW project located in Paulding County, Ohio. EDR's responsibilities included attending various work sessions with OPSB review staff, directing other subconsultants, coordinating internal staff resources, and assuring a complete application was prepared/submitted in accordance with the Ohio Administrative Code (the application was accepted as complete following its first submittal).

**Buckeye Wind Power Project** – Managed the preparation of the first ever Application for a Certificate of Environmental Compatibility and Public Need submitted to the Ohio Power Siting Board for a wind power project in Ohio. This 70-turbine, approximately 130 MW project is located in Champaign County, Ohio, EDR's experience in the wind industry proved invaluable when working OPSB staff, interpreting the State of Ohio's new wind law, directing the efforts of local consulting firms, and coordinating with the project sponsor and legal counsel. The Application was accepted as complete after the first submission.

**Howard Wind Power Project** – Led EDR's SEQRA review for this 25-turbine, 62 MW project, located in the Town of Howard, Steuben County, New York. EDR prepared a Draft and Final EIS, and worked closely with the Lead Agency (SCIDA) Special Counsel and consultant throughout the SEQRA review process. EDR also assisted the Town of Howard (SEQRA Involved Agency) in their issuance of a Findings Statement, and obtained a local Special Use Permit. In addition, EDR obtained NYSDEC authorization under Section 401 of the Clean Water Act, and Corps authorization under Section 404 of the Clean Water Act. This project is currently under construction, and EDR's continued involvement includes obtaining authorization for various project modifications, preparing a Draft and Final EIS for a two-turbine project expansion, which is expected to be approved in August 2011, and assisting the project contractor/developer with regulatory compliance during construction.

**Hardscrabble Wind Power Project (Permitting)** – Coordinated EDR's SEQRA review for this 37-turbine, 74 MW project, located in the Towns of Fairfield, Norway, and Little Falls, Herkimer County, New York. EDR prepared a Draft, Supplemental, and Final EIS, and worked closely with the Lead Agency's Special Counsel and consultant through the preparation of SEQRA Findings and local Special Use Permits. EDR also obtained regulatory authorization from the Corps of Engineers and NYSDEC, designed the compensatory wetland mitigation area, obtained permit amendments necessitated by construction-driven project changes, and we are currently responsible for monitoring/reporting on the success of the wetland mitigation in accordance with Corp of Engineers/NYSDEC permit conditions. Construction was completed in early 2011, and restoration is anticipated to conclude in the summer/fall of 2011.

**WindFarm Prattsburgh** - Managed the preparation of a Draft and Final EIS for a 44-turbine, 75 MW project in the Towns of Prattsburgh and Italy, Steuben and Yates Counties, New York. By working closely with the Lead Agency (Steuben County Industrial Development Agency [SCIDA]) and the Lead Agency's Special Counsel and consultant, EDR successfully navigated WindFarm Prattsburgh through the SEQRA review process.

**Jordanville Wind Power Project** – Managed EDR's preparation of a Draft, Supplemental, and Final EIS for a 67-turbine, 136 MW project in the Towns of Warren and Stark, Herkimer County, New York. In support of this project, EDR prepared the local special use permit applications, which initiated the SEQRA review of the subject action, assisted in Lead Agency determination, and prepared three EIS's to guide the SEQRA review. EDR worked closely with the Lead Agency (Town of Warren) Special Counsel and consultant during the SEQRA review process. Subsequently, EDR prepared a fourth EIS, which addressed the reduced 40-turbine, 80 MW project.

**Citizens Airtricity Wind Power Project** - Coordinated EDR's SEQRA review for the 40 MW Citizens Airtricity Wind Power Project located in the Towns of Stockbridge, Eaton, Madison, and Augusta, Madison and Oneida Counties, New York. The Town of Stockbridge Planning Board assumed the role of Lead Agency for this project, which became operational in 2007.

**Green Power Energy Wind Power Project** – Managed the SEQRA review for this 5-turbine (9 MW) project located in Madison County, NY, including the preparation of a Full EAF, presenting the SEQRA document at local town board meetings, and continuous client and agency correspondence and sub-consultant coordination. Conducted on-site ecological surveys and wetland/stream delineations.

**Article VII Application – Maple Ridge 230 kV Transmission Line Project** – Managed the preparation of Volume II (Plan and Profile Drawings) of the EM&CP document for the 10.3-mile-long 230 kilovolt kV transmission line corridor in Lewis County, New York. Conducted on-site ecological surveys and wetland/stream delineations, worked closely with NYS Public Service Commission staff throughout the project review process, and coordinated the efforts of other consultants.

**Maple Ridge Wind Power Project** – Assisted in the preparation of various project permits, including state and federal wetland permitting, for the 330 megawatt (MW) Maple Ridge Wind Power Project on the Tug Hill Plateau in Lewis County, New York. Conducted on-site ecological surveys and wetland/stream delineations.

**Critical Issues Analyses** – Managed the preparation of numerous confidential analyses for potential wind power project in multiple states, which addressed issues ranging from anticipated public acceptance to jurisdictional reviews and threatened and endangered species concerns.

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF:

PATRICK J. HEATON

ENVIRONMENTAL DESIGN & RESEARCH,

LANDSCAPE ARCHITECTURE, ENGINEERING & ENVIRONMENTAL SERVICES, D.P.C.

217 MONTGOMERY STREET, SUITE 1000, SYRACUSE, NY

1 **Q: Please state your name, employer, and business address.**

2 A: My name is Patrick Heaton, Environmental Design & Research, Landscape Architecture,  
3 Engineering & Environmental Services, D.P.C. ("EDR"). My business address is 217 Montgomery  
4 Street, Suite 1000, Syracuse, New York 13202.

5 **Q: What is your position at EDR?**

6 A: I am a Principal, Director of Cultural Resources.

7 **Q: How long have you been employed with EDR?**

8 A: 6 years.

9 **Q: Please describe your educational background and professional experience.**

10 A: I hold a Master of Arts in Anthropology from New York University, New York, New York. I hold a  
11 Bachelor of Arts in Anthropology from Hartwick College, Oneonta, New York. I am a Registered  
12 Professional Archaeologist and satisfy the Professional Qualifications for Archaeology and Historic  
13 Preservation per the U.S. Secretary of Interior's Standards for Historic Preservation Projects (36  
14 CFR Part 61). I have over 15 years of experience conducting cultural resources investigations  
15 and visual impact assessments for a variety of energy generation and transmission projects.  
16 Additional information on my experience is presented in my curriculum vitae ("CV"), which is  
17 attached.

18 **Q: Please describe your current responsibilities with EDR.**

19 A: As a Principal within EDR's Environmental Division, I oversee all aspects of the firm's projects  
20 related to cultural (i.e., archaeological and historic) resources, as well as managing environmental  
21 permitting projects. I am responsible for managing cultural resources surveys and visual impact  
22 analyses on behalf of EDR's clients. I have over 15 years of experience performing and/or

23 supervising projects involving cultural resources, environmental impact assessments, visual impact  
24 assessments, natural resource management plans, recreation planning.

25 **Q: Have you previously testified before the New York State Public Service Commission or**  
26 **Siting Board on Electric Generation?**

27 A: Yes.

28 **Q: Have you previously served as an expert witness before any other court, agency, or other**  
29 **body on the subject you plan to offer testimony on today?**

30 A: Yes, I have provided testimony to the New York State Public Service Commission (“PSC”)  
31 regarding the cultural resources investigations conducted for the Central Hudson A and C Line  
32 Rebuild Project. In addition, I provided testimony before the Public Service Commission of  
33 Maryland regarding the review of environmental impacts (including cultural resources and visual  
34 impacts) for the Great Bay Solar I Project.

35 **Q: What is the purpose and scope of your testimony in this proceeding?**

36 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

37 **Q: What portion(s) of the Application is your testimony sponsoring?**

38 A: Exhibit 20 and 24.

39 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
40 **direction and supervision.**

41 A: Yes.

42 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data**  
43 **or documents produced by persons other than yourself/your company? If so, please cite**  
44 **these sources. [These are independent studies, etc.]**

45 A: No.

46 **Q: Does this conclude your testimony?**

47 A: Yes.



# Patrick J. Heaton, RPA

## Principal, Director of Cultural Resources

### education

New York University, New York, New York, *Master of Arts in Anthropology*, 1999.

Hartwick College, Oneonta, New York, *Bachelor of Arts in Anthropology*, 1994.

### professional affiliations

Registered Professional Archaeologist (RPA), 2000

Meets the Secretary of Interior's Standards for Historic Preservation Projects (36 CFR Part 61)

Vice-President, Board of Directors, Preservation Association of Central New York (PACNY)

Member, Council for Northeast Historical Archaeology

Member, New York Archaeological Council

Member, New York State Archaeological Association (NYSAA), William M. Beauchamp Chapter

Executive Board (2006-2007), Professional Archaeologists of New York City (PANYC)

### employment history

Principal and Director of Cultural Resources Services, Environmental Design & Research, Landscape Architecture, Engineering and Environmental Services, D.P.C., 2013 to Present.

Project Manager, Environmental Design & Research, Landscape Architecture, Engineering and Environmental Services, D.P.C., 2010 to 2013.

Associate, Principal Archaeologist, and Project Manager, John Milner Associates, Inc., Croton-on-Hudson, NY, 2004 to 2010.

Project Archaeologist, John Milner Associates, Inc., Croton-on-Hudson, New York, 2000 to 2004.

Graduate Teaching Assistant, Anthropology Department, New York University, 1997 to 2000.

Research Consultant, Sass Conservation, Inc., Yonkers, New York, 1998 to 2000.

Archaeological Field Technician, Various Firms, New York, Rhode Island, Massachusetts, Pennsylvania, Connecticut, 1995 to 1997.

### publications/presentations

Presenter. *It's a Brave New World: Online Consultation with the New York State Historic Preservation Office (SHPO). 2015 New York State Wetlands Forum Conference, Syracuse, NY. April, 2015.*

Poster Presentation. *The Effect of Larger Rotor Diameters and Taller Hub Heights on Shadow Flicker Impacts. 2013 American Wind Energy Association (AWEA) Wind Conference, Chicago, IL. May, 2013.*

Presenter. *Cultural Heritage Planning: History as a Marketable Asset. Annual Conference of the New York Upstate Chapter of the American Planning Association, Corning, NY. September, 2012.*

Presenter. *Use of Visualization Techniques and Computer Graphics to Address the Visibility and Appearance of Off-shore Wind Projects. 2011 AWEA Offshore Wind Conference, Baltimore, MD. October, 2011.*

Heaton, Patrick J., J. Sanderson Stevens, L.E. Branch-Raymer, & J. Wettstaed. 2010. *Archaeological Investigations of an Early Farmstead Site in Shelby County, Indiana. Indiana Archaeology 5(2):74-95.*

Heaton, Patrick J. 2003. *The Rural Settlement History of the Hector Backbone. Northeast Historical Archaeology 32:19-28.*

Heaton, Patrick J. 2003. *Farmsteads and Finances in the Finger Lakes: Using Archival Sources in a GIS Database. Northeast Historical Archaeology 32:29-44.*

Six, Janet, Patrick J. Heaton, Susan Malin-Boyce, & James A. Delle. 2003. *The Artifact Assemblage from the Finger Lakes National Forest Archaeology Project. Northeast Historical Archaeology 32:79-94.*

Delle, James A., & Patrick J. Heaton. 2003. *The Hector Backbone: A Quiescent Landscape of Conflict. Historical Archaeology 37(3):93-110.*

Heaton, Patrick J. 2000. *Book review of Nineteenth- and Early Twentieth-Century Domestic Site Archaeology in New York State, edited by John P. Hart and Charles L. Fisher, New York State Museum Bulletin No. 495, Albany, NY, 2000. Published in Northeast Anthropology 60:93-94.*

### project experience

**Interstate 81 (I-81) Viaduct Project – Archaeological Assessment** – Project Manager for Phase 1A Archaeological Sensitivity Assessment and Section 106 of the National Historic Preservation Act consultation and National Environmental Policy Act (NEPA) review as part of a consultant team with Parsons and AKRF, Inc. on behalf of the New York State Department of Transportation (NYSDOT) for the replacement of approximately 5 miles of elevated highways through the City of Syracuse, Onondaga County, NY (NYSDOT PIN 3501.60, D031085). Coordinated State Historic Preservation Office (SHPO) consultation and assisted with public outreach events/meetings and preparation.

**Interstate 81 (I-81) Viaduct Project – Visual Impact Assessment** – Project Manager for Visual Impact Assessment conducted in accordance with Federal Highway Administration (FHWA) Visual Impact Assessment protocol as part of NEPA review as part of a consultant team with Parsons, AKRF, Inc., and TWMLA for the replacement of approximately 5 miles of elevated highways through the City of Syracuse, Onondaga County, NY (NYSDOT PIN 3501.60, D031085).



Patrick J. Heaton, RPA  
Principal, Director of Cultural Resources

**Great Bay Solar I** – Principal-in-Charge and Project Manager for environmental permitting studies in support of Maryland Public Service Commission review for a Certificate of Public Convenience and Necessity (CPCN), including preparation of an Environmental Review Document (ERD), wetland delineations, Visual Assessment, Phase 1 Archaeological Survey, Historic Resources Assessment, rare plant survey, wetland permitting, and local permitting for a proposed 100 MW solar energy project located on 800 acres in Somerset County, MD.

**Arkwright Summit Wind Farm** – Project Manager for environmental permitting for a proposed 36-turbine, 78-megawatt (MW) wind energy facility and associated 3-mile generator lead line in Chautauqua County, NY. Services include managing review under New York State Environmental Quality Review Act (SEQRA), including Lead Agency coordination, preparation of Supplemental Environmental Impact Statement (SEIS), Final Environmental Impact Statement (FEIS), Visual Impact Assessment, shadow flicker analysis, supplemental Phase 1B Archaeological Survey, Historic Resources Assessment, and preparation of Joint Application for Permit for wetland permitting for submission to the U.S. Army Corps of Engineers and New York State Department of Environmental Conservation (NYSDEC).

**Solar Development Project (Private Client)** – Principal-in-Charge for environmental Critical Issues Analysis and comprehensive Permitting Matrix for utility-scale solar energy project in Worcester County, MD.

**Cassadaga Wind Farm** – Technical Director for Phase 1 Archaeological Survey, Historic Resources Survey, State Historic Preservation Office (SHPO) consultation, and Visual Impact Assessment in support of Article 10 Application to the New York State Board on Electrical Generating Siting and the Environment for a proposed 70 wind turbine, 126 MW wind energy facility in Chautauqua County, NY.

**University at Albany Emerging Technology and Entrepreneurship Complex (ETEC)** – Principal-in-Charge and Project Manager for SEQRA review, including preparation of a Scoping Document, Supplement Environmental Impact Statement (SEIS, Phase 1B Archaeological Survey, Visual Assessment, and coordination of traffic study (by sub-consultant) on behalf of the State University Construction Fund (SUCF) for a 12-acre site proposed for new academic building on the New York State Office of General Services (OGS) Harriman Campus in Albany County, NY.

**New York State Thruway Authority (NYSTA) Term Contract for Bridge Rehabilitation in Western New York** – Principal-in-charge for environmental and cultural resources services to support environmental permitting as part of consultant team with Stantec for NYSTA bridge rehabilitation projects. Services include: preparation of Section 106 Project Submittal Packages; Phase 1A Archaeological Assessments and/or Phase 1 Archaeological Surveys; wetland reconnaissance and/or delineations; rare, threatened, and endangered (RTE) species assessments; Section 4(f) Consultation correspondence; and, the environmental portions of Design Approval Documents.

**Onondaga Lake Parkway/NY Route 370** – Principal-in-Charge for environmental permitting studies as part of coordinated SEQRA/NEPA review as part of a consultant team with Lochner for the reconstruction and safety improvements of 2-mile parkway in the City of Syracuse, Onondaga County, NY (NYSDOT PIN 3287.17). Services include wetland delineation and permitting, rare, threatened, and endangered (RTE) species assessments, groundwater modeling, historic landscape inventory, and visual impact assessment.

**Onondaga Creekwalk Phase II** – Principal-in-Charge for environmental permitting services as part of a consultant team with C&S Engineers for the a 2.2-mile recreational trail along Onondaga Creek in the City of Syracuse, Onondaga County, NY (NYSDOT PIN 355.14). Services provided as part of coordinated SEQRA/NEPA review included: preparation of a Section 106 Project Submittal Package; Phase 1A Archaeological Assessment; rare, threatened, and endangered (RTE) species assessments; Section 4(f) Consultation correspondence; and, the environmental portions of a NYSDOT Design Approval Document.

**Interstate 690 (I-690) Teall Avenue & Beech Street Interchange** – Project Manager and Technical Director for Visual Assessment and Archaeological Resources Screening as part of National Environmental Protection Act (NEPA) review and Section 106 consultation as part of a consultant team with Parsons and AKRF, Inc. on behalf of the NYSDOT for a bridge replacement and intersection improvement of 0.5-mile elevated highway in the City of Syracuse, Onondaga County, NY.

**Canalways Trail** – Technical Director for Section 106 Project Submittal Package and Phase 1A Archaeological Assessment as part of a consultant team with CHA for the design and construction of a 2.7-mile recreational trail along the shoreline of Onondaga Lake in the City of Syracuse, Onondaga County, NY (NYSDOT PIN 3950.49).

**Penn Forest Wind Farm** – Project Manager for preliminary visual assessment, visual fieldwork, viewshed analysis, visual simulations, and preparation of public outreach materials for proposed 40-turbine wind energy facility in Carbon County, PA.

**Stiles Brook Wind Farm** – Project Manager for preliminary visual assessment, visual fieldwork, viewshed analysis, visual simulations, and preparation of public outreach materials for proposed 30-turbine wind energy facility located in Towns of Windham and Grafton, VT.

**Village of Mohawk Substation Relocation** – Principal-in-Charge and Project Manager for Phase 1 Archaeological Survey conducted as part of Section 106 of the National Historic Preservation Act consultation for a proposed 1.2-acre substation relocation project in Herkimer County, NY. Project sponsored by New York Governor's Office of Storm Recovery (GOSR) and Federal Emergency Management Agency (FEMA).



Patrick J. Heaton, RPA  
Principal, Director of Cultural Resources

**Town of Nichols Highway Garage** – Principal-in-Charge and Project Manager for Phase 1 Archaeological Survey conducted as part of Section 106 of the National Historic Preservation Act consultation for a 7.0-acre site proposed for relocation of a municipal highway garage in Tioga County, NY. Project sponsored by New York Governor's Office of Storm Recovery (GOSR) and U.S. Department of Housing and Urban Development (HUD).

**Jericho Rise Wind Farm** – Technical Director for Phase 1B archaeological survey, historic resources survey and effects analysis, and SHPO consultation in support of SEQRA review and U.S. Army Corps of Engineers wetland permitting for a proposed 37 wind turbine, 78 MW wind energy facility in Franklin County, NY.

**Liverpool Village Cemetery Long-Term Maintenance and Restoration Plan** – Principal-in-Charge for a landscape preservation planning project, associated NYS Consolidated Funding Application (CFA), and public outreach for a 6-acre cemetery listed on the National Register of Historic Places (NRHP) located in the Village of Liverpool, Onondaga County, NY.

**Cumberland Bay State Park, Camping Area Comfort Station Replacements** – Principal-in-Charge and Project Manager for Phase 1 Archaeological Survey for proposed comfort station replacements in a state park on Lake Champlain in Clinton County, NY. Services provided as part of a consultant team with Beardsley Architects & Engineers, D.P.C. for a Term Services Agreement with the New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP).

**Montezuma Heritage Park and Giardina Park** – Principal-in-Charge and Project Manager for Phase 1A Archaeological Resources Surveys in support of historic preservation planning for a proposed 168-acre heritage park that interprets archaeological remains of the Erie and Cayuga-Seneca Canals and an additional 16-acre town park in the Town of Montezuma, Cayuga County, NY.

**Rochester Genesee Regional Transit Authority (RGRTA) Main Street Campus Improvements** – Principal-in-Charge and Project Manager for preparation of Phase 1B Archaeological Survey in support of NEPA review of 3-acre transit facility in the City of Rochester, Monroe County, NY.

**Galloo Island Wind Farm** – Project Manager for preliminary visual assessment, viewshed analyses, visual simulations, preparation of public outreach graphics, and public meeting support for proposed 30-turbine wind energy facility located on an island in Lake Ontario in Jefferson County, NY.

**Binghamton University School of Pharmacy** - Principal-in-Charge and Project Manager for SEQRA review (including preparation of a Full Environmental Assessment Form, or EAF) and Phase 1A Archaeological Assessment on behalf of the State University Construction Fund (SUCF) for a 5.5-acre site proposed for new academic building in the Village of Johnson City, Broome County, NY.

**Maxwell Field Streambank Stabilization Project** – Principal-in-Charge and Project Manager for Phase 1 Archaeological Survey for 0.3-acre streambank stabilization project in the City of Oneida, Madison County, NY.

**Chain Works District Redevelopment Project** – Principal-in-Charge for preparation of Phase 1A Archaeological Survey in support of SEQRA review of 95-acre historic industrial site proposed for redevelopment in the City of Ithaca, Tompkins County, NY.

**Central Hudson Gas & Electric W-H and G Transmission Lines** – Technical Director for SHPO consultation, archaeological surveys, and visual impact studies in support of NYS Public Service Commission Part 102 Applications for the refurbishment of a 13-mile transmission-line in Ulster County and an 11-mile transmission line Dutchess County, NY.

**Coye Hill Wind Farm** – Project Manager for Natural Resources Impact Evaluation Report and consultation with the Connecticut SHPO in support of Petition for a Declaratory Ruling from the Connecticut Siting Council for proposed 4-turbine, 12 MW wind energy project in Tolland County, CT.

**NFG Dunkirk Pipeline** – Principal-in-Charge and Project Manager for SHPO consultation and Phase 1A/1B Archaeological Surveys in support of NYS Public Service Commission Article VII Application for a proposed 9-mile natural gas pipeline located in Chautauqua County, NY.

**Rochester Genesee Regional Transit Authority (RGRTA) Orleans County Transit Facility** – Project Manager for preparation of Phase 1A Archaeological Survey in support of NEPA review of proposed 2-acre bus storage/service facility in Orleans County, NY.

**Great Bay Wind Project** – Project Manager for preparation of cultural resources surveys, consultation with the Maryland Historical Trust (MHT), and Visual Impact Assessment for a proposed 35-turbine, 100 MW wind energy project in Somerset County, MD. Services provided in support of Maryland Public Service Commission review for a CPCN and Section 106 consultation as part of NEPA review by the U.S. Fish and Wildlife Service in association with Bald and Golden Eagle Protection Act take permit review.

**Onondaga Lake West Revitalization Area** – Project Manager for preparation of Phase 1 cultural resources surveys of 400-acre brownfield area and proposed streetscape improvements in the Village of Solway, Onondaga County, NY.

**Van Dyke Road Substation** – Technical Director for Visual Impact Assessment and Phase 1 archaeological survey for a proposed 4.3-acre substation site and 1.6-mile underground transmission duct bank located in Albany County, NY.

**Batavia Senior Housing Project** – Project Manager for Phase 1 Archaeological Survey and prepared Phase 2 Archaeological Site Investigation Work Plan for a 13.5-acre site proposed for development as a senior housing facility in Genesee County, NY.



Patrick J. Heaton, RPA  
Principal, Director of Cultural Resources

**Copenhagen Wind Project** – Technical Director for preparation of Phase 1A/1B Archaeological Survey and Historic Resources Survey, New York SHPO consultation, Visual Impact Assessment, and prepared sections of Draft Environmental Impact Statement (DEIS) and FEIS as part of SEQRA review for proposed 47-turbine, approximately 79 MW wind energy project in Lewis County, NY.

**Black Oak Wind Farm** – Technical Director for Phase 1A Cultural Resources Survey, Historic Resources Visual Effects Analysis, and SHPO consultation in support of SEQRA review for a proposed 7-wind turbine, 14-MW wind energy project in Tompkins County, NY.

**Downtown Syracuse Commercial Historic District** – Project Manager for preparation of National Register of Historic Places (NRHP) nomination and Multiple Property Documentation Form on behalf of the Downtown Committee of Syracuse, Inc. for a proposed 21-acre historic district located in the City of Syracuse, Onondaga County, NY. The nomination was approved by the National Park Service and listed on the NRHP on May 7, 2013.

**Chittenango Landing Dry Dock Complex Cultural Landscape Report** – Project Manager for preparation of Part 1 of a Cultural Landscape Report (CLR) on behalf of the Chittenango Landing Canal Boat Museum for a 6-acre historic site/museum listed on the NRHP. The interpretive site includes a 19<sup>th</sup>-century dry dock complex and associated buildings located on the Erie Canal in the Town of Sullivan, Madison County, NY.

**Aquidneck Island Reliability Project** – Technical Director for visual fieldwork, visual simulations, and report preparation for a Visual Impact Assessment (VIA) for the proposed upgrade of approximately 4.4 miles of National Grid 69 kV transmission line to 115 kV in Newport, RI.

**Mary Cariola Children's Center** – Project Manager for a Phase 1 Archaeological Survey conducted as part of SEQRA review for a proposed residential facility for disabled children located on 1.3 acres in the Town of Henrietta, Monroe County, NY.

**Central Hudson Gas & Electric A and C Transmission Lines** – Technical Director for SHPO consultation, Phase 1 Archaeological Survey, and Visual Impact Assessment in support of Article VII application for the rebuild of 11 miles of 115 kV transmission lines in Dutchess County, New York.

**Indian Point Energy Center (IPEC)** – On behalf of Scenic Hudson, Inc., and Riverkeeper, coordinated preparation of visual simulations and Visual Impact Assessment for a proposed closed-cycle cooling (CCC) system at a nuclear energy facility located in Westchester County, NY.

**Scioto Ridge Wind Farm** – Prepared Cultural Resources Survey Work Plans in support of Ohio Power Siting Board (OPSB) Certificate Application for proposed wind energy project with up to 176 wind turbines and a generating capacity of up to 300 MW in Hardin and Logan Counties, OH.

**University at Buffalo School of Medical and Biological Sciences** – Project Manager for SEQRA process on behalf of the State University Construction Fund, including preparation of DEIS and support studies (Visual Assessment, Archaeological Sensitivity Assessment, and Historic Resources Impact Assessment), conducted SEQRA public hearing, preparation of FEIS, and SEQRA Findings Statement for a proposed ~600,000 gross square foot medical/educational facility located on the University at Buffalo's Downtown Campus in the City of Buffalo, Erie County, NY.

**Wild Meadows Wind Project** – Technical Director for visual fieldwork/photography and presented visual resources analyses and simulations at public open houses conducted in support of Section 106 of the National Historic Preservation Act (NHPA) consultation for a proposed 37-turbine, 74 MW wind energy project in Grafton and Merrimack Counties, NH.

**Loveless Farms** – Technical Director for Phase 1 Archaeological Survey and Visual Impact Assessment in support of SEQRA review for a proposed 18-lot subdivision located on 47 acres in the Town of Skaneateles in Onondaga County, NY.

**White Pine Commerce Park** – Project Manager for Phase 1 Archaeological Survey and SHPO consultation for Onondaga County Industrial Development Authority (OCIDA) in support of SEQRA review for a 300-acre parcel and 4-mile sewer line in the Town of Clay, Onondaga County, NY.

**Empire Brewing Company Farmstead Brewery** – Project Manager for visual assessment, viewshed analyses, visual simulations, and analysis of visual effects on NRHP-listed properties as part of SEQRA review for a proposed craft brewery in the Town of Cazenovia, Madison County, NY.

**Wilcox Estates** – Project Manager for a Phase 1 Archaeological Survey as part of SEQRA review for a proposed 32-lot subdivision located on 20 acres in the Town of Barton in Tioga County, NY.

**Barcelona Water Improvement District** – Project Manager and Technical Director for a Phase 1 Archaeological Survey as part of Section 106 of the NHPA review for a 4-mile long public water system located in the hamlet of Barcelona, on behalf of the Town of Westfield in Chautauqua County, NY.

**Village of Danforth Historic Resources Survey** – Project Manager for development of public outreach strategy, historic resource inventory forms, and visual field guide to enable community volunteers to conduct a Neighborhood Historic Resource Survey and NRHP eligibility evaluation of over 300 buildings for the City of Syracuse Bureau of Planning and Sustainability in Syracuse, Onondaga County, NY.

**SUNY Cortland Student Life Center** – Project Manager for SEQRA process on behalf of the State University Construction Fund, including preparation of DEIS, support studies (including, Visual Impact Assessment, Phase 1A Cultural Resources Survey, and Phase 1 Environmental Site Assessment), FEIS and SEQRA Findings Statement for proposed recreational athletic facility in the City of Cortland, Cortland County, NY.

**Newfield Covered Bridge** – Project Manager for preparation of a Phase 1A Cultural Resources Survey for a NRHP-listed historic bridge rehabilitation (NYSDOT PIN 37550) in the Town of Newfield, Tompkins County, NY.

**Owasco River Greenway Trail** – Technical Director for Phase 1A Cultural Resources Survey for a proposed 8.4-mile-multi-modal recreational trail (NYSDOT Project 375557) in the City of Auburn and Town of Fleming, Cayuga County, NY.



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**Niagara Falls Underground Railroad Heritage Area Management Plan** – Cultural resources specialist for preparation of a Heritage Area Management Plan (HAMP) authorized under Section 35.05 of the New York State Parks, Recreation, and Historic Preservation Law to identify and encourage heritage tourism opportunities related to the Underground Railroad in the Niagara Falls vicinity, Niagara County, NY.

**Seneca Park Zoo Parking Lot Expansion** – Project Manager for a Phase 1 Archaeological Survey in support of SEQRA review on behalf of Monroe County Parks Department for a 1.5-acre parcel in the City of Rochester and Town of Irondequoit, Monroe County, NY.

**Crown City Wind Project** – Technical Director for Cultural Resources Survey, Visual Impact Assessment, and prepared DEIS sections as part of SEQRA review for proposed 44-turbine, approximately 71 MW wind energy project in Cortland County, NY.

**Buckeye II Wind Project** – Technical Director for Visual Impact Assessment for a proposed 56-turbine, 140 MW wind energy project in Champaign County, OH in support of an Application for a Certificate of Environmental Compatibility and Public Need to the Ohio Power Siting Board (OPSB).

**Monticello Hills Wind Project** – Project Manager for SEQRA process and preparation of permitting support studies (including Full Environmental Assessment Form, Visual Impact Assessment, wetland delineation, shadow-flicker analysis, Phase 1A Cultural Resources Survey, Historic Resources Survey, and Phase 1B Archaeological Survey) for a proposed six-turbine, 18 MW wind energy project in Otsego County, NY.

**South Mountain Wind Project** – Project Manager for preparation of environmental permitting studies in support of SEQRA review (including wetland delineation, threatened and endangered species habitat assessment, and timber rattlesnake survey) for a proposed community-scale wind energy project in Delaware County, NY.

**Smokey Avenue Wind Project** – Project Manager for preparation of environmental permitting studies in support of SEQRA review (including Shadow Flicker Analysis, ballooning fieldwork and visibility study, and Phase 1A Cultural Resources Survey) for proposed community-scale wind energy project in Otsego County, NY.

**Roaring Brook Wind Power Project** – Technical Director for supplemental/addendum Phase 1B Archaeological Survey in association with project layout revisions for a proposed 79MW wind energy project located in Lewis County, NY.

**Sackets Harbor Battlefield National Historic Landmark (NHL) Nomination** – Prepared sections of NHL nomination and Battlefield Preservation Plan for the 260-acre War of 1812 battlefield in Sackets Harbor, Jefferson County, NY, under a grant from the American Battlefield Protection Program of the National Park Service.

**Warren Hull Family Home and Farmstead** – Coordinated preparation of graphic displays for cultural landscape historic overview and treatment plan to support restoration of the landscape at a ca. 1825 landmark house museum in Erie County, NY.

**Long Island - New York City Offshore Wind Project** – Project Manager for preparation of visual simulations, web-based presentation, and associated visualization services for a proposed 350 MW offshore wind energy project located in the Atlantic Ocean approximately 13 miles off the coast of Queens, Nassau, and Suffolk Counties, NY.

**Allegany Wind Power Project** – Technical Director for supplemental/addendum Phase 1B Archaeological Survey in association with review of construction plans by New York SHPO for a proposed 29-turbine, 72.5 MW wind energy project located in Cattaraugus County, NY.

**Horse Creek Wind Farm** – Technical Director for a Visual Impact Assessment, including viewshed analysis, field work, photographic simulations, and VIA report for a proposed 50-turbine, 100 MW wind energy project in Jefferson County, NY.

**Tioga Downs Wastewater Improvement Project** – Project Manager for a Phase 1 Archaeological Survey and Phase 2 Archaeological Site Investigation of a pre-contact Native American archaeological site for a wastewater treatment facility and 0.5-mile water line in Tioga County, NY.

**Collegetown Terrace** – Served as Lead Agency's consultant for SEQRA review and prepared FEIS on behalf of the City of Ithaca Planning & Development Board for a 16-acre, 1,260-unit student housing project in Tompkins County, NY.

**Big Savage 138 kV Generator Lead** – Technical Director for Visual Impact Assessment and Cultural Resources Assessment for Maryland Public Service Commission CPCN review of a proposed 7-mile transmission line in Allegany County, MD.

**Marble River Wind Project** – Technical Director for cultural resources and visual impacts analyses for SEQRA permitting review of a revised layout for a 74-wind turbine, 222 MW wind energy project located in Clinton County, NY.

**Amherst State Park Veterans Memorial** – Project Manager for a Phase 1B Archaeological Survey for a proposed veterans' memorial and 1,500-foot footpath in Amherst State Park, Erie County, NY.

**Timber Road II Wind Project** – Technical Director for a Visual Impact Assessment for a 109-turbine, 150 MW wind energy project in Paulding County, OH in support of an Application for a Certificate of Environmental Compatibility and Public Need submitted to the Ohio Power Siting Board (OPSB).

**Hardscrabble Wind Power Project** – Technical Director for supplemental Phase 1B Archaeological Survey, construction monitoring, and compliance with U.S. Army Corps of Engineers/SHPO Memorandum of Agreement for a 37-turbine, 74 MW wind energy project in Herkimer County, NY.

**Benson Mines Meteorological Tower** – Technical Director for visual assessment, ballooning fieldwork, and visual simulations in accordance with the Adirondack Park Agency (APA) Visual Analysis Methodology for a proposed 160-foot meteorological tower in St. Lawrence County, NY.



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Principal, Director of Cultural Resources

**Deerfield Wind Power Project** – Prepared sections of Supplemental DEIS for a 15-turbine, 30 MW wind energy project located in the Green Mountain National Forest, Bennington County, VT as part of NEPA review on behalf of the U.S. Department of Agriculture (USDA) National Forest Service.

**National Grid 115 kV Line, Lighthouse Hill to Coffeen Street** – Prepared visual impact assessment portion of Part 102 Report for a 40-mile 115 kV transmission line maintenance and refurbishment project in Oswego and Jefferson Counties, NY.

**National Grid Eastover Road Substation and Tap Line** – Ballooning/visual impact assessment fieldwork for a proposed 6.4-acre 230/115 kV substation and 0.75-mile 155 kV tap line located in the Town of Schaghticoke, Rensselaer County, NY.



STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF  
TODD E. HUMPHREY  
HIGHWAY DEPARTMENT MANAGER  
C&S ENGINEERS, INC.  
499 COLONEL EILEEN COLLINS BOULEVARD  
SYRACUSE, NEW YORK, 13212

1 **Q: Please state your name, employer, and business address.**

2 A: Todd E. Humphrey, C&S Engineers Inc., 499 Col. Eileen Collins Blvd., Syracuse, NY 13212.

3 **Q: What is your position at C&S?**

4 A: Highway Department Manager.

5 **Q: How long have you been employed with C&S?**

6 A: I have been employed by C&S since 2005.

7 **Q: Please describe your educational background and professional experience.**

8 A: I received a Bachelor of Science Degree in Civil Engineering from Syracuse University in  
9 Syracuse, New York in 1987. I received my New York State Professional Engineering license in  
10 1994. I have been employed by multiple firms in the practice of transportation engineering in my  
11 career. I have been employed by C&S since March 2005. Since that time, I have worked in the  
12 capacity as Senior Project Engineer and Highway Department Manager. I have approximately 28  
13 years of experience performing and/or supervising projects involving traffic analysis, highway  
14 design, pavement rating, accident studies, and cost estimating. My resume is attached.

15 **Q: Please describe your current responsibilities with C&S.**

16 A: As Highway Department Manager, I oversee most aspects of C&S's transportation design projects  
17 not involving bridge or structural design.

18 **Q: Have you previously testified before the New York State Public Service Commission or  
19 Siting Board on Electric Generation?**

20 A: No.

21 **Q: Have you previously served as an expert witness before any other court, agency, or other  
22 body on the subject you plan to offer testimony on today?**

23 A: No.

24 **Q: What is the purpose and scope of your testimony in this proceeding?**

25 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

26 Q: **What portion(s) of the Application is your testimony sponsoring?**

27 A: Exhibit 25: Effect on Transportation.

28 Q: **Were these Exhibits, Application sections, or studies prepared by you or under your**  
29 **direction and supervision.**

30 A: Yes.

31 Q: **In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data**  
32 **or documents produced by persons other than yourself/your company? If so, please cite**  
33 **these sources.**

34 A: Yes. Traffic counts were obtained from the New York State Department of Transportation  
35 (abbreviated as NYSDOT) online Traffic Data Viewer and Highway Data Services website.  
36 Accident information was obtained from NYSDOT Region 5 from their Accident Location  
37 Information System database. Posted bridge data was obtained from the NYSDOT Highway Data  
38 Services website. Pavement rating on state highways was obtained from the 2014 NYSDOT  
39 Pavement Data Report. Hauling permit requirements were obtained from the NY Permits section of  
40 NYSDOT's website. Road user agreement requirements were obtained from highway  
41 superintendents in the towns of Arkwright, Charlotte, Cherry Creek, Stockton, and Villenova.  
42 School bus data was obtained from the Dunkirk, Falconer, Fredonia, and Pine Valley school  
43 districts. Emergency services information was provided by the New York State Police Station A in  
44 Fredonia, the Chautauqua County Sheriff's Department, and the Cassadaga, Cherry Creek, and  
45 Sinclairville volunteer fire departments. Construction vehicle volumes and design vehicle  
46 dimensions for hauling turbine components were provided by the Applicant.

47 Q: **Does this conclude your testimony?**

48 A: Yes.



## Education

B.S., Civil Engineering, Syracuse University, 1987

## Registration and Certifications

Professional Engineer, New York, 1994

## Professional Organizations

American Public Works Association

American Society of Highway Engineers

New York State Association of Transportation Engineers

## Todd E. Humphrey, P.E. Highway Department Manager

Todd has more than 28 years of design experience in various transportation and traffic related projects. His experience accrued on more than 200 projects includes highway design, traffic signal design, report preparation, public presentations, traffic and accident studies, utility relocations, right-of-way acquisitions, bridge rehabilitation and reconstruction, at-grade railroad crossings, environmental studies, surveying, drainage, work zone traffic control, project/program management, and design-build project delivery for over 50 state and municipal agencies and private developers.

## Experience

### Highway Design for New York State Department of Transportation

**PIN 3045.55; Route 104 Rehabilitation/Widening, City of Oswego for NYSDOT Region 3, 3/09 to 4/10**—For this 1.8 km conversion of a three lane urban and rural principal arterial highway to a five lane facility, Todd is responsible for leading the design of work zone traffic control, ensuring road work can be completed safely and efficiently while accommodating over 22,000 daily motorists through the project area. Contract drawings include design for three phases of construction, an off site detour for a secondary road being reconstructed, temporary signage and access to businesses, and three temporary traffic signals. Project Cost, \$8,300,000 (C&S is prime: 54%)

**PIN 4077.08; Route 77 Rehabilitation, Towns of Darien and Pembroke for NYSDOT Region 4, 10/08 to 4/10**—Manager responsible for multiple design components of 12 km long project to rehabilitate and widen a rural state highway connecting the NYS Thruway, NYS Routes 5 and 33, U.S. Route 20, and the Darien Lake Theme Park Resort. Todd is responsible for quality production of preliminary and final design for traffic and accident analyses, traffic signals, work zone traffic control, storm drainage and storm water management. Project Cost, \$6,000,000 (C&S was subconsultant: 27 %)

**PIN 3752.16, D260880; Butternut, Spencer and Court Street over I-81 Bridge Rehabilitation and I-81 1R project, I-690 to Park Street bridge, City of Syracuse for NYSDOT Region 3, 7/07 to 10/08**—Project manager responsible for final design of work zone traffic control schemes for replacement of three bridges over I-81 in the City of Syracuse, including pavement rehabilitation of 1.3km of Interstate Route 81 mainline, ramps, and connectors. Design included 28 separate traffic control schemes and three detours for bridge closures. Todd was responsible for production of 81 drawings and quality assurance of 261 subconsultant produced drawings. Project Cost, \$10,000,000 (C&S was prime: 54%)

**PIN 3506.04, D260706; Pavement Rehabilitation of Interstate 690, City of Syracuse for NYSDOT Region 3, 7/07 to 12/07**—Project manager responsible for final design of work zone traffic control schemes for pavement rehabilitation of 4.3 km of I-690 in the City of Syracuse, including ramps, connectors, and a system interchange with Interstate Route 81 accommodating over 100,000 vehicles per day. A total of 196 contract drawings were required, encompassing mainline lane closures and detours on city streets. Project Cost, \$7,400,000 (C&S was prime: 100%)

**PIN 3057.48, D015265; Replacement of 4-Bridges on Route 13, Cortland County for NYSDOT Region 3, 4/05 to 12/06**—Multiple bridge replacement project. Design services are for Phases I thru VI, involving on-site temporary detour bridges at 2 sites, staged construction at 1 site, and off-site detour at 1 site. Todd was directly responsible for development of work zone traffic control and detours for the design ap-



proval document, and conceptual, preliminary and final plan stages of development. Project Cost, \$3,100,000 (C&S was prime: 82%)

**PIN 3804.39 and 3804.66, D015104; I-81 and I-690 Element Specific Bridge Repairs, City of Syracuse for NYSDOT Region 3, 1/02 to 4/05**—Multiphase contract involved repair of 299 sub-structures on 44 bridges and replacement of 124 deck joints on Interstate highway. Extensive maintenance and protection of traffic involved: city street detours, pedestrian detours, signal and intersection modifications, temporary pedestrian walks, temporary concrete barrier to protect structural lifting. Short and long term Interstate highway and ramp closures required detours over city streets. In other cases Interstate lane closures allowed onsite traffic maintenance. Responsible for designing site specific, scale drawings totaling 99 sheets for Phase I and 245 sheets for Phase II. Project Cost, \$26,000,000 (C&S was prime)

**PIN 5307.90; U.S. Route 62 (Niagara Falls Boulevard) Town of Wheatfield, Niagara County for NYSDOT Region 5, 10/01 to 9/04**—Project involved widening, realignment and reconstruction of 4-lane, high volume, high speed arterial in a suburban setting, including replacing 2 traffic signals and 2 bridges. Preliminary M&PT design utilizes staged construction, maintaining two way traffic by using temporary pavement. Complexity raised by need to maintain access to adjacent businesses separated from highway by parallel creek while relocated channel is constructed. Method utilizes staged culvert replacement and temporary access drives between parcels. Other provisions include signed bicycle detour and offsite detour for intersecting roads closed during bridge replacement. Project Cost, \$14,400,000 (Prime consultant)

**PIN P108.20; Route 17 (Future Interstate 86) Interchange Spacing and Geometrics Study, Delaware, Sullivan, and Orange Counties for NYSDOT Mobility Management Bureau, 9/00 to 2/02**—Participated in two year planning study regarding upgrade of 46 interchanges in a 106 mile corridor between Exit 84 in Delaware County and Exit 131 in Orange County. Responsible for preparing four technical memorandums: Documentation of Conditions, Assessment of Needs, Preliminary Corridor Study Report, and Final Corridor Study Report. Tasks included cost estimates, field studies, series of nine public meetings, developing mapping, and generating proposed improvements. Team leader for data collection effort. Primary author of reports. Also participated in PIN 8006.69 programming document for all I-86 related improvements in Orange County, encompassing \$116,600,000 in estimated upgrades. (Prime consultant)

**PIN 3013.03, D258548; Route 174 over Nine Mile Creek, Town of Marcellus for NYSDOT Region 3, 1997-2000**—Replacement of arch bridge in constricted stream gorge setting. Todd performed final highway design including temporary bridge alignment shift and temporary approach roadway, pedestrian walkways, temporary traffic signal, offsite detours for intersecting road closures, guiderail replacement, and waterline relocation. Project Cost, \$1,500,000 (Prime consultant)

**PIN 9002.09; Route 12A, Town of Chenango for NYSDOT Region 9, 1999-2000**—Responsible for quality control review and design activities in preparation of Advance Detail Plans for a 1.4 km suburban highway reconstruction project. (Prime consultant)

**PIN 3015.3; Route 3 over Little Salmon River, Village of Mexico for NYSDOT Region 3, 1998-2000**—Prepared design report and final highway design for replacement of bridge in village setting. Final design required layout of two off-site detours: a truck detour using all state highways, and a local detour using village streets, involving street and intersection rehabilitation. Onsite M&PT included temporary pedestrian bridge which also suspended temporary waterline. Design also included sidewalks, closed drainage, and dry hydrant. Project Cost, \$800,000 (Prime consultant)

**PIN 3015.25; Route 3 over Sage Creek, Town of Mexico for NYSDOT Region 3, 1998-2000**—Responsible for oversight and review of subconsultant-prepared Phase I-VI design work, including preparation of design report and plan drawings. Project Cost, \$500,000 (Prime consultant)

**PIN 1056.17 – Route 8 over Hudson River, Riparius for NYSDOT Region 1, 2000**—Todd performed initial field studies and preparation of design alternatives for highway approach realignment and replacement of truss bridge in Adirondack Park, including replacement of at-grade crossing of



Upper Hudson River Railroad. Prepared and submitted Final Design Report. Project Cost, \$5,000,000 (Prime Consultant)

**PIN 3045.41 - Route 104 over CSX, Town of Mexico for NYSDOT Region 3, 2000**—Participated in Phase I-IV design studies and preparation of draft design report for replacement bridge at temporary on-site detour crossing of CSX Montreal Secondary. Project Cost, \$3,000,000 (Prime Consultant)

**PIN 1460.31 - Route 32, CR 301 to CR 308, Albany County for NYSDOT Region 1, 2000**—Project engineer responsible for Phase I-IV design studies for reconstruction and realignment of 6.12 km of rural highway in the Onesquethaw Valley Historic District. Included coordination with FHWA and SHPO, managing subconsultant performing survey, public information meeting, environmental analysis, and visual impact analysis. Submitted Final Design Report/Environmental Assessment. Project Cost, \$9,000,000 (Prime Consultant)

**PIN 3075.42, D258270 - Route 13, South Cortland/Virgil Road to Cortland City Line for NYSDOT Region 3, 2000**—Todd performed final design for reconstructing a four lane arterial in an urban commercial corridor. Specific details included modifying four traffic signals, intersection layouts, commercial driveway consolidation, waterline replacement, staged box culvert construction employing temporary sheet piling, rubblizing and widening existing pavement, extensive closed drainage replacement, and maintaining two-way traffic over half of the four-lane road in each phase. Project Cost, \$5,000,000 (Prime Consultant)

**PIN 3243.03 - MBC Asphalt Concrete Resurfacing of NYS Routes 173/175 for NYSDOT Region 3 and Route 175 at OCC entrance for Onondaga Community College, 1999**—Responsible for design and preparation of contract plans for signalized intersection reconstruction and pavement widening at main campus entrance as mitigation for technology center construction. Integrated drawings into and coordinated with existing Region 3 paving project. (Prime consultant)

**PIN 2009.13 – Route 167, City of Little Falls for NYSDOT Region 2, 2000**—Todd participated in preparation of Expanded Project Proposal, field work and preliminary design for replacement of multi-span bridge over Route 5, CSX, Mohawk River and NYS Barge Canal, and prepared the final design report presenting three alternatives for the project. Studies included floodplain evaluation, visual assessment, hazardous waste screening, public outreach, and detour analysis. Project Cost, \$11,000,000 (Prime Consultant)

**PIN 3028.08 - Route 281, SR 13 to I-81 Ramp, City of Cortland and Town of Cortlandville for NYSDOT Region 3, 1999**—As project engineer, prepared Expanded Project Proposal scoping document for reconstruction of 6.1 km urban arterial, a two lane highway with development related congestion problems. Tasks included accident analysis, traffic data collection and balancing, public information program, traffic delay study and capacity analysis for 26 intersections, culvert and guiderailing field inspections, groundwater analysis for EPA sole-source aquifer, cost estimating, and report preparation. Project Cost, \$11,600,000 (Prime Consultant)

**PIN 3010.10, D257844 – Route 92 over Limestone Creek, Town of Manlius for NYSDOT Region 3, 1998**—Project engineer responsible for complete Phase I-VI design excluding bridge, encompassing: design report, highway geometry, intersection design, erosion control, waterline relocation, capacity study for onsite detour, public meeting, property takings and relocations. Four-stage M&PT design included phase-specific traffic signal modifications, lane shifts, maintaining traffic on local road under bridge, temporary pavement, and maintaining commercial driveway access. Project involved staged replacement of bridge on high volume, high speed suburban highway. Project Cost, \$1,800,000 (Prime Consultant)

**NYS Route 342 over Gridley Creek for NYSDOT Region 3, 1995**—Responsible for final design of on-site maintenance and protection of traffic for staged bridge replacement and highway reconstruction project. (Prime Consultant)

**PIN 3019.15, D258254 - Canton Street over Conrail Bridge Replacement for NYSDOT Region 3, 1999**—This project consisted of the replacement of BIN 3313220 over Conrail and the reconstruction of Warners Road, Canton Street, and Railroad Street in the Towns of Van Buren and Camillus,



Onondaga County. Responsibilities included preliminary highway design, design report preparation, and quality assurance review of final bid documents. (Prime consultant)

**PIN 2034.98 – Route 5 over West Canada Creek for NYSDOT Region 2, 1995**—Responsible for highway design of bridge replacement project in the Village of Herkimer from Phase I-IV design studies up through final PS&E. (Prime Consultant)

**PIN 2326.10 – Route 5A over Sauquoit Creek, Town of New Hartford for NYSDOT Region 2, 1995**—Todd was responsible for quality assurance review and revisions to subconsultant's final highway approach design in a bridge replacement project near congested roadways serving Sangertown Mall. Project Cost, \$2,000,000 (Prime Consultant)

**PIN 3314.28, D256611 – Route 34, Venice Center to Auburn for NYSDOT Region 3, 1996**—Responsible for complete Phase I-VI design of 13.5 mile 3R project in Cayuga County from design report through construction. Pavement design required five different typical sections to match existing conditions. Project included replacing five box culverts with onsite detours. Project Cost, \$6,000,000 (Prime Consultant)

**PIN 1753.30 – U.S. Route 4 (Third Street) Bridge over Poestenkill, City of Troy for NYSDOT Region 1, 1995**—Prepared design report and detour design for rehabilitation of historic stone arch bridge in urban setting. Project Cost, \$2,000,000 (Prime Consultant)

**PIN 2134.09 - Route 5, Tribes Hill-Amsterdam for NYSDOT Region 2, 1994**—Performed various final highway design activities for 3.3 mile highway reconstruction, including alignments, super-elevation, and typical sections. (Prime Consultant)

**PIN 7751.09 - Franklin County Route 24, Brainardsville Road for NYSDOT Region 7, 1994**—Responsible for final design of 6.0 mile highway reconstruction project to final PS&E submittal, including supervision of designers and drafters, preparation of wetland permits, and coordination with NYSDEC and APA. Project Cost, \$3,800,000 (Prime Consultant)

**PIN 3034.66 and 3034.90, D256135 - Route 5 over Finger Lakes Railway for NYSDOT Region 3, 1999**—Responsible for complete Phase I-VI design through PS&E for construction of temporary at-grade detour crossing; complete Phase I-IV design of final reconstructed alignment; and oversight/review of final design through PS&E of permanent at-grade crossing. (Prime Consultant)

### **Transportation Design for Municipal and Other Clients**

**PIN 6753.12 and 6753.13, Traffic Signal System Upgrade—Corridors 3 and 4, City of Elmira, NY, 2012**—As department manager, responsible for QA/QC of design and documents for traffic signal improvements at twenty-five (25) intersections throughout the City of Elmira. Improvements consist primarily of complete traffic signal replacement, along with a few decommissions where signals are no longer warranted. Design also includes replacing curb ramps, sidewalk, and minor paving. Project Cost, \$3,730,000 (C&S is Prime Consultant)

**PIN 3754.64, Traffic Signal Upgrades—Phase 2, City of Ithaca, NY, 2012**—As department manager, responsible for QA/QC of design and documents for the replacement of five traffic signal installations in the CBD coordinated signal system of downtown Ithaca. Project includes design of new mast arm traffic signals to replace old equipment. Project Cost, \$700,000 (C&S is Prime Consultant)

**PIN 3754.86, Traffic Signal Upgrades, Onondaga County DOT, NY, 2011**—As department manager, responsible for QA/QC of design and documents for replacing traffic signal equipment at four isolated intersection in Onondaga County. Project includes design of a new mast arm traffic signal installations with all new appurtenances and ADA compliant curb ramps. Project Cost, \$770,000 (C&S is Prime Consultant)

**Terminal Access Road Improvements for Long Island MacArthur Airport, Ongoing**—Manager in charge of design and plan drawing preparation for the following land side design components of this airport service road, parking, and terminal area improvement project: traffic signs, pavement



markings, overhead signs, terminal signing, construction sequencing and work zone traffic control. Project Cost, \$10,000,000 (C&S is Prime Consultant)

**PIN 4754.04 – Alderman Road bridge over Ganargua Creek for Wayne County, Ongoing—**Responsible for highway approach related design activities for this locally administered federal aid project involving replacement of a single span bridge in a rural setting with separate off-site traffic detours for passenger vehicles and large trucks. Todd led design efforts for intersection realignment with NYS Route 31, traffic and accident studies, detour route evaluations, roadside drainage, roadway approach geometry and typical pavement sections. Project Cost, \$1,200,000 (C&S is Prime Consultant)

**PIN 3754.46 – Syracuse University Connective Corridor for City of Syracuse, Ongoing—**The overall vision of the Connective Corridor is to create a cutting-edge cultural and economic development linking University Hill with downtown Syracuse. The project addresses a two mile long route from Syracuse University at Waverly Avenue to Genesee Street, under the I-81 viaduct, then along a route to be selected through downtown, west to Armory Square and West Street. Improvements include a pedestrian and bicycle corridor, cultural areas, transit shelters, information kiosks, park restoration, and dedicated bus route. The project is sponsored by the City of Syracuse with significant involvement from Syracuse University. C&S was selected to assist the City with project management for the initial design and construction phase. Services include participation in design consultant selection, contract negotiations, independent fee estimating, and conducting a partnering workshop for stakeholders. As the project progresses through design, C&S will be a reviewer and facilitator in all aspects of the project, including public outreach, design studies, and bid document preparation. Project Cost, \$4,000,000 (C&S is Prime Consultant)

**PIN 3950.27 – Tioughnioga River Trail for Cortland County Department of Highways, 2008—**Project manager for locally administered federal-aid enhancement project involving Phase I-IV design of 2.7 mile paved trail for non-motorized use between Yaman Park in the City of Cortland and Albany Street/Main Street historic district in the Village of Homer, with an estimated construction cost of \$1,500,000. (C&S is Prime Consultant)

**West Loop Road reconstruction for Corning Community College, 2007—**Project manager in charge of design and construction administration for campus renewal project involving 2,300 feet of asphalt roadway on a new alignment, including sidewalks, reconstruction and expansion of five parking lots with a capacity of 600 vehicles, and installation of 45 drainage structures to improve conveyance of stormwater runoff. Project Cost, \$2,200,000 (C&S is Prime Consultant)

**PIN 4753.60 – Exchange Street Reconstruction for City of Geneva, 2008—**Project manager responsible for Phase I-VI design and construction support of locally administered federal aid project, involving reconstructing and widening 1.8 km of urban street on National Highway System, including utility, drainage, railroad crossing, and traffic signal replacement. Project Cost, \$6,000,000 (C&S is Prime Consultant)

**PIN 3752.99 – Syracuse Creekwalk Phase 1 for City of Syracuse, 2005—**Responsible for design of maintenance and protection of traffic for vehicles and pedestrians for this locally administered federal aid enhancement project, which is one component of an urban multi-use trail along Onondaga Creek in a city setting. (C&S is Prime Consultant)

**PIN 3950.23 – Main Street (NYS Route 96) Corridor Enhancements for Village of Trumansburg, 2005—**Responsible for maintenance & protection of traffic plans for this locally administered federal aid enhancement project, which involved streetscape improvements and utility replacements. (C&S is Prime Consultant)

**PIN 2753.96 – Swamp Road (CR 78) bridge over Sangerfield River for Madison County Department of Highways, 2005—**Responsible for design report preparation and highway approach design for this locally administered federal aid project involving replacement of a single span bridge in a rural setting with off-site traffic detour. Project Cost, \$500,000 (C&S is Prime Consultant)

**County Route 22 Replacement of Retaining Walls Adjacent to East Brook for Delaware Coun-**



**ty Department of Public Works, 2005**—Project involved replacement of a displaced and undermined gabion wall system (146m length). East Brook is located in a mountainous watershed with a predominately bedrock stream bed; it is subject to rapidly rising water levels and stream bank overflow during, and after, intense rainfall events. Todd was responsible for the highway components of the project, including alignment, typical sections, guiderailing layout, detour routes, and cost estimates. Project Cost, \$600,000 (C&S is Prime Consultant)

**PIN 3753.48 – Element Specific Riverbank Stabilization for City of Oswego, 2005**—Project involved rock-anchor tied-back soldier pile and lagging wall (112 m length) to prevent continued active subsidence of embankment supporting East First Street (NYS Route 48), adjacent to the Oswego River within the City of Oswego. Todd was responsible for the highway components of the project, including alignment, typical sections, guiderailing layout, maintenance and protection of traffic, signing, pavement markings, and cost estimates. Project Cost, \$1,200,000 (C&S is Prime Consultant)

**PIN 3752.98 – Taft Road reconstruction for Onondaga County Department of Transportation, 2009**—Project manager responsible for Phase I-VI design of locally administered federal aid project, involving rehabilitation and widening 5.3 km of arterial highway in a suburban setting, including utility, drainage, and traffic signal replacement. Coordination with NYSDOT Region 3 required for interchange improvements at Taft Road and I-81. Project Cost, \$7,000,000 (C&S is Prime Consultant)

**NYS Route 298 at West Willow Properties for PEMCO, 2005**—Responsible for design of highway work permit plans submitted to NYSDOT Region 3. Project involved creating a four way signalized intersection at Collamer Road and Kinne Street. Project Cost, \$400,000 (Prime Consultant)

**West Dorm Drive for SUNY College at Oneonta, 2005**—Project Manager for improvements to campus main entrance, access roads, and parking facilities, including drainage, sidewalks, signing, pavement markings, landscaping, signature entrance, and pavement rehabilitation. (Prime Consultant)

**Route 38/34B/CR 107A Grade Separation IPP for Tompkins County, 2004**—Responsible for preparing initial Project Proposal for proposed grade separation of State and County highways in Peruville and other highway improvements to an off system intersection, for submission to NYSDOT Region 3. (Prime Consultant)

**NYS Route 96 improvements for Waterloo Central School District, 2004**—Project engineer responsible for contract documents and highway work permit from NYSDOT Region 3, involving driveway entrance improvements and waterline installation for renovation to Skoi-Yase Elementary School in Waterloo, New York. (Prime Consultant)

**U.S. Route 11 improvements for Tri-State Auto Auction, Cicero, New York, 2004**—Project engineer responsible for contract documents and highway work permit from NYSDOT Region 3, involving new driveway entrance and pavement rehabilitation along a state highway. (Prime Consultant)

**PIN 2753.81 - Floyd Avenue reconstruction for City of Rome, 2004**—Project engineer for locally administered federal-aid project involving Phase I-VI design of 2.0 km urban street reconstruction, including water line replacement and five signalized intersections, with an estimated construction cost of \$3,400,000. (Prime Consultant)

**Park Street improvements for Wendy's Restaurant, City of Syracuse, 2003**—Responsible for city highway work permit design documents, involving turning lane improvements for a new fast food restaurant construction. Included coordination with NYSDOT Region 3 due to proximity of I-81 exit ramp. (Prime Consultant)

**Route 57 at Elmcrest Road for Wegmans, Liverpool, New York, 2003**—Project engineer responsible for design documents and Onondaga County highway work permit, involving construction of an additional turning lane for a supermarket expansion. (Prime Consultant)

**PIN 2753.73 -Bingley Road bridge replacement for Madison County Department of Highways, 2004**—Lead highway designer for locally administered federal-aid project involving replacement of single span bridge over Chittenango Creek and approach work including intersection with NYS Route 13, with an estimated construction cost of \$700,000. (Prime Consultant)



**West Spencer Street Reconstruction for the City of Ithaca, 2004**—Project engineer responsible for schematic, preliminary and final design for conversion of 1,700 foot long one way street into a two way street with increased traffic capacity and on-street parking, including improvements at two intersections and construction of a roundabout. Significant public outreach program. Included construction support. Project Cost, \$3,000,000 (Prime Consultant)

**South Meadow Street Widening for City of Ithaca, 2004**—Project engineer responsible for preliminary and final design for widening two highway segments and bridge on NYS Route 13/34/96 from four lanes to five lanes, including Highway Work Permit approval from NYSDOT Region 3. Included construction support and as-built plans. Project Cost, \$3,200,000 (Prime Consultant)

**PIN 3753.38 - McGraw-Marathon Road bridge over Smith Brook for Cortland County Department of Highways, 2004**—Responsible for phase I-VI design of locally administered federal aid project involving replacement of an arch bridge and reconstruction of highway approaches. Project Cost, \$570,000 (Prime consultant)

**County Routes 57 and 64 (Warners Road) for Onondaga County Department of Transportation, 2005**—Project engineer in charge of preliminary and final design for 4.77 km highway reconstruction project. Design elements included road realignment, right of way acquisition, closed drainage, signing and pavement markings. Tasks included design report, public presentation, and bid documents. Project Cost, \$5,000,000 (Prime Consultant)

**NYS Route 46 improvements for P&C Supermarkets, Rome, New York, 2002**—Project engineer responsible for contract documents and highway work permit from NYSDOT Region 2, involving improvements to existing commercial driveways for a multi-tenant retail development anchored by a renovated grocery store. (Prime Consultant)

**County Route 187 (Oak Orchard Road) over Mud Creek for Onondaga County Department of Transportation, 2002**—Project engineer responsible for design of highway approach section and alignments, guiderailing layout, temporary signal and off-site detour plan for bridge rehabilitation project. (Prime Consultant)

**Barnes Avenue bypass feasibility study for City of Utica, 2002**—Project engineer responsible for studying alternatives to replace a deteriorated bridge crossing the CSX mainline, including new alternate roadway alignments that would eliminate the crossing. (Prime Consultant)

**Hancock Air Park Redevelopment, Town of Cicero, New York, 2002**—Project engineer responsible for quality assured design of full depth roadway reconstruction associated with commercial redevelopment of former military base. (Prime Consultant)

**County Routes 48 and 205 (West Taft Road and Allen Road) for Onondaga County Department of Transportation, 2002**—Design of intersection improvements that include upgrade of traffic signal equipment and road widening. Todd was responsible for the completion of preliminary design, supplemental survey identification, pavement evaluation, preparation of a design report, public information meetings, preparation of advance detail plans and final construction documents. Project Cost, \$600,000 (Prime Consultant)

**U.S. Route 11 at Cicero Community Campus for MDA, 2002**—Responsible for design and preparation of highway work permit plans for signalization and pavement widening at intersection associated with development of multi-faceted community center complex. Coordinated with NYSDOT Region 3. Project Cost, \$500,000 (Prime Consultant)

**NYS Route 13 at P&C, Village of Pulaski, for Penn Traffic, 2002**—Responsible for final design of improvements to intersection of existing state highway with new entrance road to new supermarket. Mitigation included highway widening, installation of traffic signal and modification of two nearby railroad preemption activated traffic signals. Required coordination with NYSDOT Region 3 for Highway Work Permit. (Prime Consultant)

**PIN 7803.93 – Colton Bridge and Trail for Town of Colton, 2004**—Responsible for Phase I-VI of locally administered federal aid enhancement project involving multi-use recreational trail and



bridge over Raquette River in St. Lawrence County. Included coordination with NYSDEC, Adirondack Park Agency, and property owners. Project Cost, \$1,000,000 (Prime Consultant)

**Conservation Place road improvements for Onondaga County Department of Parks and Recreation, 2001**—Project engineer responsible for quality assured design of full depth roadway and sidewalk reconstruction of main entrance into the Rosamond Gifford Zoo at Burnet Park in the city of Syracuse. (Prime Consultant)

**NYS Route 298 at Collamer Business Park for COR Development, 2004**—Responsible for conceptual design and preliminary plans for improvements to Route 298 in Dewitt at entrance to new business park, including modifications within Interstate Route 481 interchange. Involved meetings with NYSDOT and town engineer. (Prime Consultant)

**Jefferson County Industrial Park, Town of Watertown, 2002**—Responsible for site feasibility study, draft generic impact statement, and highway design plans for multi-phase infrastructure expansion of industrial park from 120 acres to over 200 acres in size, including improved access to State Route 12F, coordinated with NYSDOT Region 7. Project Cost, \$2,000,000 (Prime Consultant)

**NYS Routes 173 and 175 improvements at Castlebar Circle for Dunkin Donuts, 2000**—Project engineer responsible for design of traffic signal upgrades and turning lane addition associated with traffic mitigation at a retail development. Coordinated with NYSDOT Region 3 for highway work permit. (Prime Consultant)

**County Routes 57 and 63 (Warners Road) for Onondaga County Department of Transportation, 2000**—Project engineer in charge of preliminary and final design for 3.75 km highway reconstruction project. Design elements included road realignment, right of way acquisition, closed drainage, signing and pavement markings. Tasks included design report, public presentation, and bid documents. Project Cost, \$3,000,000 (Prime Consultant)

**County Route 14 over Oswegatchie River for St. Lawrence County, 2000**—Responsible for highway approach design associated with truss bridge replacement, including relocation of bridge-supported utilities during and after construction. (Prime Consultant)

**PIN 3752.56 – County Route 1A for Oswego County, 2000**—Responsible for managing preliminary design studies for locally administered federal-aid project involving 1.6 km of rural highway realignment and reconstruction.

**Fair Street bridge for Putnam County, 2000**—Project engineer responsible for traffic study and report, accident analysis, draft design report, and right-of-way impact analysis for bridge and highway improvements to suburban highway, involving congested intersections. Project was locally administered federal aid. (Prime Consultant)

**County Routes 53 (Kirkville Road) and 77 (Fly Road) for Onondaga County Department of Transportation, 2000**—Responsible for complete Phase I-VI design of an intersection widening project, including signal replacement and 1.35 km of pavement work. Prepared design report and PS&E package. Project Cost, \$1,000,000 (Prime Consultant)

**PIN 3035.21 - County Route 91 (Old Route 57) for Onondaga County Department of Transportation, 2000**—Responsible for preliminary design of 7.5 km locally administered federal-aid corridor project between Liverpool and Gaskin Road, involving pavement rehabilitation and coordination of 13 traffic signals. Project Cost, \$1,700,000 (Prime Consultant)

**County Route 69 (East Molloy Road) for Onondaga County Department of Transportation, 1997**—Responsible for Phase I-VI design of 1.16 mile urban street rehabilitation including intersection with US Route 11 in Mattydale. Work included full depth reconstruction, milling and overlay, driveways, sidewalks, and closed drainage. (Prime Consultant)

**PIN 7752.05 – Franklin County Route 4 bridges over Salmon River and East Branch Deer Creek for NYSDOT Region 7 and Franklin County Highway Department, 1998**—Responsible for Phase I-IV design of locally administered federal aid project involving replacement of two bridges



in consecutive seasons. Also responsible for design and preparation of Phase V-VI highway plans, including supervision of designers, drafters, and subconsultant. Design elements included right-of-way acquisition, stabilization of historic structure, two signed off-site detours, intersection geometry, drainage culverts, and temporary stream fording for farm vehicles. Project Cost, \$1,500,000 (Prime Consultant)

**County Route 46 (Morgan Road) for Onondaga County Department of Transportation, 1997**—responsible for complete Phase I-VI design of 1.24 mile rural reconstruction project, including design report and PS&E package. Supervised designers, drafters, and subconsultants performing survey and pavement corings. (Prime Consultant)

**County Routes 1 and 1A at Alcan entrance for Oswego County, 1995**—Responsible for design and preparation of contract plans for realignment and reconstruction of skewed intersection of two county roads, including replacement of a large box culvert. (Prime Consultant)

**Oneida-Herkimer Solid Waste Management Authority Traffic Study, 2000**—Performed intensive traffic study for proposed two county landfill in the Town of Ava, in preparation for EIS document and NYSDEC permit, involving engineering and traffic studies of several hundred miles of highway in NYSDOT Region 2, including NYS Routes 12, 12D, 26, 46, 69, 294, 365, and 790 between Utica, Rome, and the landfill site. Also prepared complete highway work permit drawings for safety widening and improvements on Route 294 at landfill entrance. Study included considering rail transport as alternate method, and explored TOFC/COFC/RoadRailer options and preliminary layout of tracks at loading and unloading facilities. (Prime Consultant)

### **Publications and Presentations**

Co-presenter at 2007 NYSATE Technical Conference “Aerial Orthoimagery can save you M&PT design money” for PDH credit

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF:

KENNETH KALISKI

SENIOR DIRECTOR

RSG

55 RAILROAD ROW

WHITE RIVER JUNCTION, VERMONT 05001

1 **Q: Please state your name, employer, and business address.**

2 A: My name is Kenneth Kaliski. I am employed by RSG in White River Junction, Vermont.

3 **Q: What is your position at RSG?**

4 A: I am a Senior Director at RSG.

5 **Q: How long have you been employed with RSG?**

6 A: I have been employed by RSG for 30 years.

7 **Q: Please describe your educational background and professional experience.**

8 A: I have a BA in Biology and Environmental Studies from Dartmouth College and a BE in  
9 Engineering from the Thayer School of Engineering at Dartmouth College. My educational  
10 experience includes coursework in sound level monitoring, noise control engineering, active noise  
11 control, indoor and outdoor acoustical modeling, vibration control, sound level meter design, the  
12 physics and mathematics involving sound and its propagation, biology, environmental health, and  
13 environmental engineering.

14 I am a licensed professional engineering in the states of Vermont, New Hampshire, Michigan,  
15 Massachusetts, and Illinois. I am Board Certified through the Institute of Noise Control Engineering  
16 (INCE) and formally served on INCE's Board of Directors and Vice President of Board Certification.  
17 Within INCE I am currently the co-chairman of the Wind Turbine Technical Activity Committee. I am  
18 also a member of the Acoustical Society of America and serve on its Noise Technical Activity  
19 Committee.

20 I have been involved in noise from wind projects since 1993. I am actively involved in research  
21 involving wind turbine noise and have more than a dozen publications on the subject. My resume is  
22 attached.

23 **Q: Please describe your current responsibilities with RSG.**

24 A: I oversee the Acoustics and System Dynamics Group.

25 **Q: Have you previously testified before the New York State Public Service Commission or**  
26 **Siting Board on Electric Generation?**

27 A: No.

28 **Q: Have you previously served as an expert witness before any other court, agency, or other**  
29 **body on the subject you plan to offer testimony on today?**

30 A: Yes, I have testified before the Vermont Public Service Board, the Maine Department of  
31 Environmental Protection, Maine Board of Environmental Protection, Maine Legislature, Ohio  
32 Power Siting Board, and many other quasi-judicial settings (Planning Commissions, Zoning  
33 Boards, County Commissions, etc)

34 **Q: What is the purpose and scope of your testimony in this proceeding?**

35 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

36 **Q: What portion(s) of the Application is your testimony sponsoring?**

37 A: Exhibit 19: Noise and Vibration. RSG prepared a Noise Impact Assessment for the construction  
38 and operation of the Cassadaga Wind Farm, related facilities and ancillary equipment.

39 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
40 **direction and supervision.**

41 A: Yes.

42 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data**  
43 **or documents produced by persons other than yourself/your company? If so, please cite**  
44 **these sources. [These are independent studies, etc.]**

45 A: References are provided in Exhibit 19.

46 **Q: Does this conclude your testimony?**

47 A: Yes.



## KENNETH KALISKI, PE, INCE BD. CERT.

Senior Director

Ken Kaliski has 30 years of experience, having worked in all of RSG's market areas with a focus on engineering and advanced analytics. His technical specialty is in noise control engineering, where he works on projects such as community noise monitoring and modeling, architectural acoustics, transportation noise, and industrial noise control. He also works on complex modeling projects in the fields of market and energy research. Ken is the co-holder of Patent 7,092,853 for an Environmental Noise Monitoring System.

### EXPERIENCE

30 years

### EDUCATION

BE, Engineering, Thayer School of Engineering, Dartmouth College (2002)

AB, Biological Sciences and Environmental Studies, Dartmouth College (1985)

### PROJECT EXPERIENCE

**Spruce Mountain Wind, Maine** – Conducted assessment of turbulence intensity and potential impacts to amplitude modulation during permitting. During post-construction, ongoing management of continuous 24/7/365 compliance monitoring system.

Developed software for processing combining 50 ms sound monitoring data with turbine SCADA and met tower instrumentation to assess sound pressure level, amplitude modulation, and tonal sound over 10-minute compliance periods.

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

**Highland Plantation Wind Farm** – Managed the noise study for the Highland Plantation Wind Farm near Bingham, Maine. The project included long-term sound monitoring at five locations around the site and modeling the 39 turbines proposed for the project. Sound propagation modeling was done to assess conformance with the Maine DEP standards, and mitigation was recommended in a report as part of the permitting proceedings.

**Saddleback Ridge Wind Farm** – Conducted the pre-construction noise study for the Saddleback wind farm under both the old and new Maine noise standards. Participated in public meetings and hearings for the 33 MW project near Carthage, Maine.



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

**Wind Farm Noise Analysis** – Conducted a study of the noise impacts of the Brodie Mountain Wind Project specifically with respect to a nearby condominium development. Sound levels were monitored continuously over several days and these monitored levels were then correlated against ridgeline wind speed.

**Deerfield Wind Farm, VT** – Prepared a noise study for Vermont's Section 248 filing on a 34 MW wind power project proposed for southern Vermont. The project included background sound monitoring, sound propagation modeling of the wind turbines and substation, and preparation of reports and exhibits. Sound modeling included analyses of 8760 hours of meteorology. A report was prepared and testimony was presented to the Section 248 Board

**Noise Forecasting for a Wind Turbine Demonstration Project, VT** – conducted noise measurements and modeling for a proposed 12-tower wind turbine project by the Green Mountain Power Company in Searsburg, Vermont. Used the NTerrain model to quantify the effects of atmospheric loss, vegetation, wind, and terrain features on octave-band noise levels in the area.

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

**Review of Wind Turbine Impact Study, Maine** – For the Maine Land Use Regulatory Council, reviewed the noise impacts for a proposed 580 turbine, 210 MW wind farm in the Boundary Region in western Maine.

**Kingdom Community Wind** – Prepared a noise assessment of a 63 MW wind project in Lowell, Vermont. The project included background sound monitoring at six locations, detailed sound modeling to assessment annualized impacts, testimony before the Public Service Board, and ongoing post-construction sound monitoring.

**Kansas Wind Farm Study** – Conducted sound propagation modeling for a proposed 100 MW wind farm in Kansas. Measured background sound levels at several locations around the proposed site. Calibrated the sound model using measurements at an operating wind farm in Kansas. Prepared a report comparing the impacts to a noise standard and suggested mitigation necessary to meet the standard.

## PUBLICATIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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



### **PRESENTATIONS**

Kaliski, K., Lozupone, D., McPhee, P., O'Neal, R., Zimmerman, J., Wilson, K., Rowan-West, C., "The MassCEC Wind Turbine Noise Research Project – Research Goals and Preliminary Results," Acoustical Society of America, Indianapolis, 2014.

Kaliski, K., Duncan, D., McPhee, P., O'Neal, R., Zimmerman, J., Rowan West, C., "The Massachusetts Research Study on Wind Turbine Acoustics – Methods and Goals", American Wind Energy Association 2014.

Kaliski, K., "Wind Turbines – Noise Generation, Exposure, and Stressors," Society of Environmental Toxicology and Chemistry North Atlantic Chapter, 2013

Kaliski, K., Neeraj, G. "Prevalence of complaints related to wind turbine noise in northern New England," 21<sup>st</sup> International Congress on Acoustics, Montreal, 2013

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

Kaliski, K., "Topics in Public Acceptance, Human Impacts: Sounds and Shadow Flicker," New England Wind Energy Education Project Conference *Wind Energy in New England: Understanding the Issues Affecting Public Acceptance*, 2011

Kaliski, K., "Wind Turbine Noise Regulation," (webinar) New England Wind Energy Education Project, 2010

Kaliski, K. "Sound Advice: Evaluating Noise Impacts in a Changing Landscape," American Wind Energy Association Windpower 2009 Conference and Exposition 2009.

Kaliski, K. "Calibrating Sound Propagation Models for Wind Power Projects," *State of the Art in Wind Siting Seminar*, October 2009, National Wind Coordinating Collaborative.

Kaliski, K., Aultman-Hall, L. (organizer), "Transportation, Health, and Environment," University of Vermont Honors College seminar, 2008

Kaliski, K. "Challenges and Opportunities for Noise Mapping in the United States," *Acoustics 08*, Paris 2008.

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

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

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF:

MICHAEL J. NADEAU

DIRECTOR OF ENGINEERING

APPLIED HIGH VOLTAGE, LLC

403 NEW KARNER RD.

ALBANY, NEW YORK 12205

1 **Q: Please state your name, employer, and business address.**

2 A: Michael J. Nadeau; Applied High Voltage, LLC; 403 New Karner Rd., Albany, NY 12205

3 **Q: What is your position at Applied High Voltage?**

4 A: Director of Engineering

5 **Q: How long have you been employed with Applied High Voltage?**

6 A: Two and half years

7 **Q: Please describe your educational background and professional experience.**

8 A: Bachelors of Science – Electrical Engineering, Villanova University, 2007; Academic Certificate –  
9 Power Systems Protection and Relaying, University of Idaho, In Progress. Licensed Professional  
10 Engineer – NY, WA, NV, WV, CA, HI. My resume is attached.

11 **Q: Please describe your current responsibilities with Applied High Voltage.**

12 A: Responsible for all engineering and design activities of an engineering/procurement/construction  
13 company for high-voltage substation and transmission projects. Development and tracking of  
14 department staffing, budgets and costs on an overall and per-project basis. Project estimating,  
15 proposals, scheduling, planning, resource loading and production. Creation and maintenance of  
16 company's engineering and design procedures, standards, work instructions, equipment  
17 specifications, QA/QC documents. Main point of contact and coordination with numerous utility,  
18 renewable and industrial clients for engineering activities, including early-stage project  
19 development, feasibility and cost estimates. Develop and maintain new client relationships through  
20 focused, responsive support and quality deliverables. Active contribution with project work  
21 including acting as Engineer of Record, quality/constructability reviews, overall engineering  
22 coordination, technical subject matter expertise and detailed design work. Responsible for  
23 creating, developing and tracking department administrative functions, including performance  
24 reviews, employee training, etc.

25 **Q: Have you previously testified before the New York State Public Service Commission or**  
26 **Siting Board on Electric Generation?**

27 A: No

28 **Q: Have you previously served as an expert witness before any other court, agency, or other**  
29 **body on the subject you plan to offer testimony on today?**

30 A: No

31 **Q: What is the purpose and scope of your testimony in this proceeding?**

32 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

33 **Q: What portion(s) of the Application is your testimony sponsoring?**

34 A: Exhibit 8: Electric Systems Production Modeling, Exhibit 34: Electric Interconnection, Exhibit 35:  
35 Electric and Magnetic Fields

36 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
37 **direction and supervision.**

38 A: Yes.

39 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data**  
40 **or documents produced by persons other than yourself/your company? If so, please cite**  
41 **these sources. [These are independent studies, etc.]**

42 A: References are listed in Exhibit 8.

43 **Q: Does this conclude your testimony?**

44 A: Yes.

# MICHAEL J. NADEAU, P.E.

680 Maple Lane | Niskayuna, NY 12309 | (484)-680-0046 | mnadeau01@gmail.com

## Summary

An accomplished Electrical Engineer with experience in high voltage power systems (up to 345kV), including electrical and physical aspects of substation design. Knowledgeable in protection and control systems, specification and procurement of electrical equipment for project construction, and transmission line and underground cable projects.

## Professional Experience

### **APPLIED HIGH VOLTAGE, LLC, Albany, NY**

#### **DIRECTOR OF ENGINEERING**

**August 2013 – Present**

Responsible for all engineering and design activities of an engineering/procurement/construction company for high-voltage substation and transmission projects. Development and tracking of department staffing, budgets and costs on an overall and per-project basis. Project estimating, proposals, scheduling, planning, resource loading and production. Creation and maintenance of company's engineering and design procedures, standards, work instructions, equipment specifications, QA/QC documents. Main point of contact and coordination with numerous utility, renewable and industrial clients for engineering activities, including early-stage project development, feasibility and cost estimates. Develop and maintain new client relationships through focused, responsive support and quality deliverables. Active contribution with project work including acting as Engineer of Record, quality/constructability reviews, overall engineering coordination, technical subject matter expertise and detailed design work. Responsible for creating, developing and tracking department administrative functions, including performance reviews, employee training, etc.

### **ALTRAN SOLUTIONS CORP., Albany, NY**

#### **ENGINEER 3**

**October 2012 – August 2013**

Lead Electrical Engineer for utility substation projects including Protection and Control (P&C), Physical Layout and Electrical Wiring and Schematics. Developed detailed scope of work for Utility T&D Projects. Acted as main technical point of contact with clients, vendors and utility engineers. Developed project cost and schedule estimates.

### **CG POWER SOLUTIONS USA, INC. / MSE POWER SYSTEMS, INC., Albany, NY**

#### **LEAD ENGINEER, ELECTRICAL**

**March 2011 – September 2012**

Direct supervision and technical guidance for multiple electrical engineers and designers in Electrical Engineering department. Responsible for development, oversight and quality review of complete electrical design packages for high-voltage substations for utility and non-utility clients. Acted as lead/main engineer on multiple projects (including substation, transmission and wind farm collection system work) and is responsible for overall quality control, internal and external coordination, and technical interfaces with clients, utilities and vendors. Development of company technical standards and work procedures. Selected as department representative for working group tasked with the creation of a standardized substation package to support the company's new business model initiative. Supported Commercial Operations team by developing project estimates and proposals. Administered and managed department staffing, salary planning, project assignments, performance evaluations, employee development and administrative tasks.

#### **PROJECT ENGINEER**

**September 2010 – March 2011**

#### **ASSOCIATE ENGINEER**

**June 2007 – September 2010**

#### **INTERN (Seasonal)**

**2004 - 2007**

Responsible for development, oversight and quality review of complete electrical design packages for high voltage substations for utility and non-utility clients. Responsible for technical details and creation of single-line diagrams, AC schematics, DC schematics, equipment wiring diagrams, communication architecture, relay panel layout, AC/DC panel layout, cable schedule, logic diagrams, interlock schemes, general arrangements, grounding and conduit plans and details, lightning protection and control building layout. Reviewed and applied industry standards and technical project specifications from the client. Performed various engineering calculations (station battery, AC load, conduit fill, CT burden, lightning protection, etc.) and prepared project-specific equipment specifications for procurement.

## Education

**B.S., Electrical Engineering, Cum Laude, Villanova University, Villanova, PA – May 2007**

**Academic Certificate, Power Systems Protection and Relaying, University of Idaho, Moscow, ID - In Progress**

## Professional Affiliations

IEEE - Institute of Electrical and Electronics Engineers (Power and Energy Society; Substations Committee)

- Vice-Chair – WG D8 (IEEE 1267) - Guide for Development of Specifications for Turnkey Substation Projects

## Professional Licenses

Professional Engineer – NY, WA, NV, WV, CA, HI

## Computer Skills

Microsoft Word, Excel, Outlook, Access, Powerpoint, Project

WinIGS, CDEGS, CYMCAP, ASPEN, ETAP, AcSElerator, Autodesk AutoCAD (2000 and later), Raster Design

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF:

TREVOR PETERSON

PROJECT MANAGER

STANTEC CONSULTING SERVICES INC.

30 PARK DRIVE

TOPSHAM, MAINE, 04086

1 **Q: Please state your name, employer, and business address.**

2 A: Trevor Peterson, Stantec Consulting Services Inc., 30 Park Drive, Topsham, Maine, 04086.

3 **Q: What is your position at Stantec?**

4 A: I am a senior wildlife biologist and project manager.

5 **Q: How long have you been employed Stantec?**

6 A: I have been employed at Stantec since 2003.

7 **Q: Please describe your educational background and professional experience.**

8 A: I earned my Bachelors degree in Biology and Environmental Studies from Bowdoin College in  
9 2002. I am currently enrolled in a PhD program in University of Maine's Ecology and Environmental  
10 Sciences program where I am studying use of long-term acoustic bat survey datasets to study bat  
11 migration and manage potential impacts at wind projects. During my time at Stantec, I have  
12 conducted and managed a wide range of ecological surveys, focusing since 2006 on bird and bat  
13 issues at proposed and existing wind projects. Please see my resume attached.

14 **Q: Please describe your current responsibilities with Stantec.**

15 A: I design and conduct field studies and existing data as needed to support our clients' needs,  
16 typically related to assessing and measuring impacts to birds and bats associated with  
17 development and operation of commercial wind energy projects. I am also a technical lead within  
18 the company for acoustic bat survey methods.

19 **Q: Have you previously testified before the New York State Public Service Commission or**  
20 **Siting Board on Electric Generation?**

21 A: No.

22 **Q: Have you previously served as an expert witness before any other court, agency, or other**  
23 **body on the subject you plan to offer testimony on today?**

24 A: I provided written and oral testimony on potential impacts to birds and bats at the proposed Laurel  
25 Mountain Wind Energy Project in West Virginia, before the West Virginia Public Service  
26 Commission (Case No. 08-0109-E-CS-CN).

27 **Q: What is the purpose and scope of your testimony in this proceeding?**

28 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

29 **Q: What portion(s) of the Application is your testimony sponsoring?**

30 A: Exhibit 22: Terrestrial Ecology and Wetlands. Specifically my testimony is to provide explanations  
31 of results of pre-construction bird and bat studies conducted by Stantec.

32 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your  
33 direction and supervision.**

34 A: Yes.

35 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data  
36 or documents produced by persons other than yourself/your company? If so, please cite  
37 these sources. [These are independent studies, etc.]**

38 A: References are listed in Exhibit 22.

39 **Q: Does this conclude your testimony?**

40 A: Yes.

# Trevor S. Peterson

Project Manager, Senior Wildlife Biologist



Mr. Peterson is a senior wildlife biologist and project manager responsible for performing wildlife research, developing ecological survey protocols, and assisting in ecological inventories, including wildlife population surveys, rare species surveys, habitat studies, and water quality monitoring surveys. He has played a leadership role in developing methods for ecological risk assessments for proposed wind projects and post-construction mortality surveys at operational wind farms throughout the eastern United States and has worked with wind companies to develop and implement site-specific avian and bat protection plans to minimize and mitigate potential impacts. Mr. Peterson serves as Stantec's technical lead for acoustic bat surveys, responsible for updating equipment, survey methods, and data analysis/reporting methods.

Mr. Peterson's previous project experience includes the design and implementation of a project documenting the effects of an unchecked population of introduced snowshoe hares on the regeneration and recruitment of trees in New Brunswick, Canada. He has conducted sample and data collection and performed autopsies on moose, wolf, and beaver; used telemetry equipment to locate den and rendezvous sites of radio collared wolves; and conducted many other wildlife surveys, including breeding bird, loon, and amphibian surveys. He also led efforts to identify and eradicate populations of exotic plants within the Isle Royale National Park.

## PROFESSIONAL EXPERIENCE

- Stantec Consulting. 2007-present. Project Manager
- Woodlot Alternatives, Inc. 2003-2007. Project Manager

## EDUCATION

Semester Program in Costa Rica, Tropical Field Biology, Environmental Studies, and Spanish, Duke University, Durham, North Carolina, 2000

AB, Biology/Environmental Studies, Summa cum Laude, Phi Beta Kappa, Bowdoin College, Brunswick, Maine, 2002

40-Hour Hazwoper Certification, OSHA, Topsham, Maine, 2005

OSHA 8-Hour HAZWOPER Refresher Certification, Topsham, Maine, 2012

Wilderness First Aid Certified, SOLO, Topsham, Maine, 2012

Heartsaver CPR Certified, SOLO, Topsham, Maine, 2012

## MEMBERSHIPS

Secretary/Treasurer, The Wildlife Society, Maine

## PROJECT EXPERIENCE

### Natural Resource Services

Acoustic Bat Surveys along Proposed Road Corridors, Tennessee

*Technical and field supervisor for acoustic bat surveys for the Tennessee Department of Transportation. Conducted field surveys in a variety of habitats within 67 kilometer-long segments of multiple potential highway corridors within a National Forest. Completed data analysis and prepared survey reports.*

Gulf of Maine Avian/Bat Pilot Migration Project, Gulf of Maine

*Senior Biologist. Developed and implemented survey techniques and data analysis framework for fall (2009-2011) avian and bat migration research survey along ~200 mile transect of New England coast from Kent Island, New Brunswick to Gloucester, MA, and extending over 20(+) miles offshore to Mt Desert Rock. Surveys included dual coastline/island x-band radar and concurrent acoustic bat surveys at dispersed island, coastal, and buoy locations. Project was supported by Stantec Consulting and included federal, state, and NGO partners.*

\* denotes projects completed with other firms

# Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

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## Eastern Box Turtle Protection Plan, Construction Monitoring, and Relocation, Duxbury, Massachusetts

*Mr. Peterson developed a protocol to protect box turtles during construction in compliance with MESA, and participated in fieldwork efforts, which included pre-construction searches, construction monitoring, turtle handling/relocation, and habitat management.*

## Blue-Spotted Salamander Surveys and Relocation, Reading, Massachusetts

*Mr. Peterson developed and implemented a survey protocol to inventory, identify, and relocate blue and yellow-spotted salamanders from an upland area proposed for development. Coordinated communications with state wildlife agencies.*

## Diamondback Terrapin Habitat Assessment and Nesting Surveys, Massachusetts

*Mr. Peterson developed survey protocols and conducted an assessment of suitable habitat features to evaluate mating and nesting activities of a newly discovered diamondback terrapin population at a former landfill proposed for mixed use development in southern Massachusetts.*

## Indiana Bat and Rare Bird Surveys at Proposed Wind Energy Project, Jefferson and Oswego Counties, New York

*Mr. Peterson coordinated multiple years of habitat evaluations, acoustic bat surveys, and radio telemetry surveys for Indiana bats at a proposed wind project in northwestern New York. Mr. Peterson also coordinated and conducted field surveys for breeding birds and rare birds within the area.*

## Pre-construction Avian and Bat Surveys at Proposed Wind Energy Project, Texas

*Mr. Peterson developed an innovative work scope to conduct a variety of field surveys focusing on assessing potential impacts to Mexican free-tailed bats and managed a variety of field surveys including nocturnal radar surveys, NEXRAD data analysis, acoustic bat monitoring, and visual night-vision surveys. Mr. Peterson also coordinated discussions between project developers, state wildlife agencies, and non-profit groups.*

## Pre-construction Avian and Bat Surveys at proposed New Creek Wind Energy Project, Grant County, West Virginia

*Project Manager, Field Supervisor, Expert Witness. Developed protocols for bird and bat field surveys within proposed wind project. Coordinated field efforts, including breeding bird surveys, raptor surveys, bat mist-netting surveys, bat telemetry surveys, and acoustic bat surveys. Managed correspondence between the developer and state and federal wildlife agencies. Prepared survey reports, a site-specific bird and bat risk assessment, and direct testimony, all of which were presented at public hearings.*

## Spotted Turtle and Vernal Pool Monitoring on Greenbush Railroad, Southeastern Massachusetts

*Project Manager, Field Team Leader, Field Technician. Managed a field crew responsible for monitoring the water quality, invertebrate diversity, amphibian populations, and plant communities within vernal pools located in a commuter rail corridor. Led efforts to document and track populations of spotted turtles within the same corridor. Assisted with development of amphibian/turtle crossing structures, and protocols for testing the effectiveness of these structures.*

## Avian and Bat Surveys at Laurel Mountain Wind Energy Project, Randolph and Barbour Counties, West Virginia

*Project Manager, Field Supervisor, Expert Witness. Conducted bird and bat field surveys within proposed wind project. Coordinated field efforts, including breeding bird surveys, raptor surveys, bat mist-netting surveys, and acoustic bat surveys. Managed correspondence between the developer and state and federal wildlife agencies. Prepared survey reports, a site-specific bird and bat risk assessment, and direct testimony, all of which were presented at public hearings. Served as an expert witness on behalf of the developer. Designed and oversaw implementation of post-construction mortality and curtailment study. Worked with project representatives and agencies to develop a site-specific Avian and Bat Protection Plan.*

\* denotes projects completed with other firms

# Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

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## Avian and Bat Surveys at Armenia Mountain Wind Energy Project, Tioga and Bradford Counties, Pennsylvania

*Project Manager and Field Supervisor. Conducted bird and bat field surveys within proposed wind project. Coordinated field efforts, including breeding bird surveys, raptor surveys, bat mist-netting surveys, and acoustic bat surveys. Managed correspondence between the developer and state and federal wildlife agencies. Prepared survey reports and a site-specific bird and bat risk assessment for the project. Managed two years of post-construction monitoring according to Pennsylvania Game Commission protocols.*

## Post-construction Avian and Bat Mortality Monitoring at Forward and Lookout Wind Projects, Somerset County, Pennsylvania

*As the Project Manager for post-construction bird and bat mortality surveys at two of the first operational wind projects to participate in Pennsylvania's Voluntary Cooperative Wind Energy agreement, Mr. Peterson developed survey work scopes, and coordinated fieldwork for multiple years of monitoring, including daily mortality surveys, acoustic bat surveys, and diurnal raptor surveys. Mr. Peterson also coordinated project-related agency communications with state and federal wildlife agencies.*

## Natural Community Surveys and Resource Inventory, Moosehead Lake Region, Maine

*Mr. Peterson conducted natural community surveys and rare species surveys, classified natural communities, identified rare plants and animals, and evaluated potential wildlife habitat within parcels proposed for development and conservation within a large proposed development in Maine's north woods.*

# Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

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## PUBLICATIONS

Peterson, T.S., S. Boyden, and K. Watrous. Comparison of Automated and Manual Identification Methods for Acoustic Bat Survey Datasets: Implications for Future Protocols. *Poster Presentation at the Northeast Bat Working Group Meeting: Albany, New York, 2013.*

Pelletier, S.K., T. Peterson, S. Boyden, K. Watrous, and J. Perkins. Ongoing Offshore Acoustic Bat Research in the Atlantic and Great Lakes Regions. *Poster Presentation at the Northeast Bat Working Group Meeting: Albany, New York, 2013.*

Peterson, T.S. A New Look at Bat Activity and Wind Speed in the Rotor Zone. *Poster Presentation at the Northeast Bat Working Group Meeting: Carlisle, Pennsylvania, 2012.*

Peterson, T.S., J. Costa, K. Omland, and K. Watrous. Use of Pre-construction Acoustic Bat Data to Design and Forecast Site-specific Curtailment Plans. *Poster Presentation at the NWCC Wind Wildlife Research Meeting IX: Denver, Colorado, 2012.*

Johnson, J.S., L.E. Dodd, J.D. Kiser, T.S. Peterson, and K.S. Watrous. Food Habits of *Myotis leibii* along a Forested Ridgetop in West Virginia. *Northeastern Naturalist 19(4): 665-672, 2012.*

Johnson, J.S., J.D. Kiser, K.S. Watrous, and T.S. Peterson. Day-roosts of *Myotis leibii* in the Appalachian Ridge and Valley of West Virginia. *Northeastern Naturalist 18 (1): 95-106., 2011.*

Johnson, J.S., K.S. Watrous, G.J. Giumarro, T.S. Peterson, S.A. Boyden, and M.J. Lacki. Seasonal and geographic trends in acoustic detection of tree-roosting bats. *Acta Chiropterologica, 13(1): 157-168, 2011.*

Peterson, T.S., S.K. Pelletier, S.A. Boyden. Acoustic Survey of Offshore Bat Activity and Migration in the Gulf of Maine. *Presentation at the Maine Chapter of the Wildlife Society Wind and Wildlife Meeting, Orono, Maine, 2011.*

Peterson, T.S. A Discussion of a Suitable Framework and Scale for Modeling and Managing Impacts to Migratory Bats at Wind Projects. *Presented at the NWCC Wind Wildlife Research Meeting VIII; Lakewood, Colorado, 2010.*

Giumarro, G.J., K.S. Watrous, J.S. Johnson, T.S. Peterson, S.A. Boyden, and M.J. Lacki. Correlation of bat acoustic activity to bat mortality in the eastern United States: a broader understanding of seasonal and geographic trends in acoustic detection of tree-roosting bats. *Presented at the NWCC Wind Wildlife Research Meeting VIII, Lakewood, Colorado, 2010.*

Peterson, T.S, K.S. Watrous, and S.K. Pelletier. Combining technologies to assess potential impacts to Mexican free-tailed bats in central Texas. *Poster presentation at the NWCC Wind Wildlife Research Meeting VIII, Lakewood, Colorado, 2010.*

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

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

# Trevor S. Peterson

Project Manager, Senior Wildlife Biologist

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Giumarro, G.J., K.S. Watrous, T.S. Peterson, S.A. Boyden, M.J. Lacki, and J.S. Johnson. Seasonal and geographic trends in acoustic detection of tree-roosting bats. *Presented at the Windpower Conference and Exhibition, Dallas, Texas, 2010.*

Giumarro, G., T.S. Peterson, C.W. Meinke, and S.K. Pelletier. Understanding Risk to Long-distance Migratory Bats in Canada using an Ecological Risk Framework. *Presented at the CanWEA Environmental Assessment Siting Workshop, Halifax, Nova Scotia, 2009.*

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

Giumarro, G., J.S. Johnson, T.S. Peterson, K.S. Watrous, and S. Boyden. Summary of Seasonal Distribution of Migratory Tree Bats in the Northeastern United States Using Passive Acoustic Sampling. *Presented at the 1st International Symposium on Bat Migration. Berlin, Germany, 2009.*

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

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

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

Meinke, C.W., T.S. Peterson, J.P. Lortie, and S.K. Pelletier. Assessing risk to bats from wind facilities using the weight-of-evidence approach to ecological risk assessment. *Presentation at the joint meeting of the Northeast Bat Working Group and the Southeastern Bat Diversity Network. Blacksburg, Virginia, 2008.*

Lortie, J.P., G. Giumarro, R.D. Roy, and T.S. Peterson. Using ecological risk assessment to characterize risk to birds and bats at wind farms. *Presentation at the 14th Annual Conference of the Wildlife Society, Tucson, Arizona, 2007.*

Peterson, T.S., A. Uesugi, and J. Lichter. Tree recruitment limitation by introduced snowshoe hares, *Lepus americanus*, on Kent Island, New Brunswick. *Canadian Field Naturalist 119 (4): 569-572, 2005.*

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF  
DANIEL J. TROY, P.E.  
SENIOR PROJECT MANAGER  
GZA GEOENVIRONMENTAL OF NEW YORK  
535 WASHINGTON STREET, 11<sup>TH</sup> FL.  
BUFFALO, NEW YORK, 14203

1 **Q: Please state your name, employer, and business address.**

2 A: Daniel J. Troy, GZA GeoEnvironmental of New York, 535 Washington Street, 11<sup>th</sup> Floor, Buffalo,  
3 New York 14203

4 **Q: What is your position at GZA GeoEnvironmental of New York?**

5 A: Senior Project Engineer

6 **Q: How long have you been employed with GZA GeoEnvironmental of New York?**

7 A: Nineteen Years

8 **Q: Please describe your educational background and professional experience.**

9 A: B.A., Geological Sciences from SUNY at Buffalo, 1986; B.S., Civil Engineering from University of  
10 Utah, 1995; Professional Engineer in New York State, 2003; LEED AP, 2008. My resume is  
11 attached.

12 **Q: Please describe your current responsibilities with GZA GeoEnvironmental of New York.**

13 A: General responsibilities as a senior project manager include completion and supervision of field  
14 and technical activities, data analysis interpretation, report and design preparation, and client and  
15 regulatory agency contact and coordination.

16 **Q: Have you previously testified before the New York State Public Service Commission or  
17 Siting Board on Electric Generation?**

18 A: No

19 **Q: Have you previously served as an expert witness before any other court, agency, or other  
20 body on the subject you plan to offer testimony on today?**

21 A: No

22 **Q: What is the purpose and scope of your testimony in this proceeding?**

23 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

24 **Q: What portion(s) of the Application is your testimony sponsoring?**

25 A: Exhibit 21: Geology, Seismology and Soils. GeoEnvironmental of New York (GZA) conducted a  
26 Preliminary Geotechnical Assessment, for the Cassadaga Wind Project to assess general  
27 constructability of the proposed Facility from a geological standpoint.

28 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
29 **direction and supervision.**

30 A: Yes.

31 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data**  
32 **or documents produced by persons other than yourself/your company? If so, please cite**  
33 **these sources. [These are independent studies, etc.]**

34 A: References are included in Exhibit 21 and in GZA's report.

35 **Q: Does this conclude your testimony?**

36 A: Yes.



**Daniel J. Troy, P.E., LEED® AP**  
Senior Project Manager

## RESUME

### Summary of Experience

#### Education

B.S., 1995, Civil Engineering, University of Utah  
B.A., 1986, Geology, State University of New York at Buffalo

#### License / Certifications

2003, Professional Engineer, New York  
2008, LEED® AP  
2012, Certified Energy Auditor-In-Training, Association of Energy Engineers®

#### Areas of Specialization

Geotechnical Engineering/Investigations  
Environmental Site Assessments  
Remedial Investigation/Feasibility Studies  
Indoor Air Quality Surveys  
Solid Waste Landfill Design  
Property Condition Assessments  
CQA/CQC Management, Monitoring and Testing

Mr. Troy has 20 years of professional experience in conducting a variety of projects including environmental and geotechnical studies, solid waste design and construction oversight, Level I property condition assessments (PCAs) and indoor air quality testing for both private and public clients. Clients include industry, governmental and municipal agencies, developers, financial institutions, and architecture/engineering firms. Environmental project work has included conducting and managing Phase I and Phase II Environmental Site Assessments (ESA), Preliminary Site Assessments (PSA), Interim Remedial Measures (IRM), Remedial Investigations / Feasibility Studies (RI/FS) and remedial design and implementation. Solid waste and geotechnical work included solid waste management facility engineering, construction management, and construction quality assurance / quality control (QA/QC) management, monitoring and testing, footer and foundation assessment and design and slope stability analysis. PCA project work has included managing and conducting PCAs on a variety of facilities including historic residential dwellings, apartment buildings, elementary schools, high rise office buildings and commercial/industrial facilities. Responsibilities as a senior project manager include completion and supervision of field and technical activities, data analysis interpretation, report and design preparation, and client and regulatory agency contact and coordination.

### Relevant Project Experience

#### *Geotechnical Engineering Projects:*

- Completed multiple geotechnical evaluations for proposed large scale wind turbine projects located in Erie, Herkimer, Steuben, Chautauqua and Allegany counties in New York State and in Krayne, Pennsylvania. Project work included completion of desk top studies and geotechnical investigation drilling (including soil/rock testing). Geotechnical reporting included recommendations for shallow and deep turbine foundations and construction recommendations including requirements for excavation, dewatering, access roads construction, buried transmission lines and construction lay down areas.
- Embankment evaluation and recommendations report prepared for a fly ash settling pond owned by a western New York coal fired power plant. Evaluation included completion of soil borings and testing and topographic survey of subject area, sample data interpretation and utilization of PCSTABL slope stability program.



- Project manager for various geotechnical investigations for public and private utility companies including an ethanol manufacturing plant, multiple electrical substation and transmission lines, coal and natural gas fired power plants, hydroelectric and wind power generation companies. Investigations included subsurface evaluations for new facility construction, equipment expansion, existing structural evaluation and embankment evaluations.

### *Environmental Projects*

- Preparation and management of Remedial Investigation / Remedial Alternatives Report (RI/RAR) for Environmental Restoration Program (ERP) in accordance with NYSDEC regulations and requirements for a commercial property contaminated with trichloroethylene (TCE) in Endicott, NY. Project included preparation of work plans, scope of work, coordination of field work and subcontractors. Additionally, designed, coordinated and managed remedial activities included an IRM and installation of on-Site and off-Site sub-slab depressurization systems (SSDS) to address properties impacted with soil vapor migration. Prepared and submitted RI/RAR report that evaluated several remedial options for on-Site and off-Site TCE contaminated soil and groundwater. Based on NYSDEC Record of Decision (ROD), designed and implemented chosen remedial options including enhanced anaerobic bioremediation applications and SSDS O&M oversight. Upon completion of the remediation, GZA issued a Site Management Plan and Final Engineering Report that were both approved by NYSDEC with a Certificate of Completion to be issued in early 2016.
- Prepared and managed water supply surveys for residential dwellings and seasonal properties located near proposed wind turbines in Herkimer, Steuben and Allegany counties in accordance with specific wind power projects Draft Environmental Impact Statements (DEIS) requirements. Projects involved coordinating of field engineers, scheduling and budget preparation for baseline assessment of existing water supplies including property owner interviews and limited water quality testing. Surveys also included assessment of potential construction impacts to nearby streams, ponds, karst conditions and a nearby New York State fish hatchery.
- Prepared Spill Prevention Control and Countermeasure (SPCC) Plans for several commercial facilities consistent with New York State regulatory requirements, permits and client procedures.
- Completed 100+ Phase I/II Environmental Site Assessments (ESAs) for private, commercial, industrial, public and governmental clients in various states including New York, Ohio, Pennsylvania, Kansas, Missouri, Mississippi, Florida, Michigan and Ontario, Canada. Work done in general accordance with ASTM guidelines. Sites included natural gas and electric transmission lines, vacant land, residential, recreational, commercial and industrial properties.
- Assisted in the preparation of three remedial investigation/feasibility studies (RI/FS) reports for NYSDEC under a Superfund Standby Contract. Developed and evaluated the feasibility of remedial alternatives to address varying contaminants including chlorinated solvent, metals and petroleum products in soil and groundwater.
- Managed numerous petroleum underground storage tank (UST) investigations, closures and remedial activities for commercial and industrial facilities. Tasks include evaluation and management of potential generated hazardous wastes and the work was done in accordance with specific state requirements, permits and client required procedures. Several projects required coordination and oversight for impacted soil excavation and disposal at permitted waste disposal facilities as well as coordination with respective NYSDEC / NYSDOH / Municipality program managers.



**Daniel Troy, P.E.**  
*Cont'd*

- Managed and performed indoor air quality (IAQ) surveys for a large insurance company at their home office campus and at numerous branch offices located in several states throughout the eastern and central United States. IAQ testing typically included 24-hour monitoring of temperature, humidity, carbon dioxide and carbon monoxide, and sample collection for particulates (i.e., 8-hr duration for dust), mold, volatile organic compounds (i.e., formaldehyde) and 48-96 hour radon samples.

*Solid Waste Engineering and Construction Management Projects:*

- Assisted a local coal fired power plant at two of their facilities to check whether the specific facility Coal Combustion Residual (CCR) units are in compliance with the newly issued United States Environmental Protection Agencies Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, as presented in the Federal Register Volume 80 No 74 dated April 17, 2015. Mr. Troy completed specific CCR rule tasks for both facilities including Weekly, Monthly and Annual Inspections for CCR Surface Impoundments; Weekly and Annual Inspections of CCR Landfills; Preparation of fugitive dust control plans for qualifying CCR landfills and plants; and provided the required annual professional opinion on compliance of surface impoundments.
- Mr. Troy was the construction contractors Quality Control Manager for the Fresh Kills Landfill Section 6/7 closure located in Staten Island, NY from May 2007 through January 2008. Responsibilities included general oversight and documentation of contractor's construction activities and for an approximate 75 acres landfill closure cap and landfill gas extraction system in accordance with 6 NYCRR Part 360 guidelines for solid waste management facilities. Additional responsibilities included observations for compliance with Site SWPPP and coordination with NYSDEC and New York City Department of Sanitation and their consulting engineers.
- Landfill construction QA/QC oversight of various cell and closure cap constructions projects located in New York, Tennessee and Puerto Rico that include geomembrane liner installation, leachate and landfill gas recovery pipe installations and monitoring and documentation of field and laboratory material testing as outlined in project specific QA/QC plans, construction specifications and Site specific permits.
- Completed a Hazardous Waste Material Assessment for a closed Niagara County Landfill that was in operation from 1968 to about 1987. Assessment included document review of available files from the landfill and the NYSDEC, preparation of investigation work plans, coordinated test pit excavations and completed visual observations, waste screening, and sample collection for analytical testing and characterization. Prepared final report summarizing the findings of the landfill assessment for submission to the NYSDEC.
- Construction Quality Assurance for various commercial, municipal and industrial facilities to observe and document construction activities and to verify that work was being done in accordance with design specifications and permits. Oversight included field testing, sampling and reporting of subsurface soil, structural stone and concrete materials during construction activities.
- Project manager for quarterly and semi-annual groundwater monitoring programs in accordance with 6 NYCRR Part 360 guidelines for solid waste management facilities for several municipal landfills located in western New York. Work includes management of field staff, coordination with clients, laboratories, third party validation and NYSDEC and data evaluation and report preparation.



**Daniel Troy, P.E.**  
*Cont'd*

*Property Condition Assessments (PCAs) Projects:*

- Project manager for PCAs completed at commercial properties (primarily distribution and manufacturing facilities, office towers, schools, hotels and adult care facilities) at locations in several cities within the eastern United States. Property portfolios assessed typically included total square footage ranging between 50,000 and 1 million sq. ft. Evaluations included assessment of site specific property, structure, roof, envelope, HVAC, electrical, fire and safety and ADA issues in accordance with ASTM 2018-08. Capital cost estimates for deferred maintenance and costs for deficient components were estimated based on published values (i.e., RS Means), contractor quotes and engineering judgment for the identified components.

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

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Application of Cassadaga Wind Project for  
a Certificate under Article 10 of the Public Service Law

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Case No. 14-F-0490

PRE-FILED TESTIMONY OF:

SETH WILMORE

ASSOCIATE DIRECTOR, ENVIRONMENTAL AFFAIRS

EVERPOWER WIND HOLDINGS, INC.

1251 WATERFRONT PLACE

PITTSBURGH, PENNSYLVANIA 15222

1 **Q: Please state your name, employer, and business address.**

2 A: Seth Wilmore, EverPower Wind Holdings, 1251 Waterfront Pl., Pittsburgh, PA 15222

3 **Q: What is your position at EverPower?**

4 A: Associate Director of Environmental Affairs.

5 **Q: How long have you been employed with EverPower?**

6 A: I have been employed with Everpower for 5 years and 4 months.

7 **Q: Please describe your educational background and professional experience.**

8 A: I have a Bachelor of Science in Environmental Science from Allegheny College and a Master of  
9 Science in Environmental Science and Policy from George Mason University. I have almost 7  
10 years' experience in the wind energy industry and over 10 years' experience in environmental and  
11 permitting fields. Please see attached for my CV.

12 **Q: Please describe your current responsibilities with EDR.**

13 A: I am responsible for management of environmental studies and permitting activities during wind  
14 project development activities. In addition, I am responsible for permit compliance during wind  
15 project construction and operation.

16 **Q: Have you previously testified before the New York State Public Service Commission or  
17 Siting Board on Electric Generation?**

18 A: No.

19 **Q: Have you previously served as an expert witness before any other court, agency, or other  
20 body on the subject you plan to offer testimony on today?**

21 A: No.

22 **Q: What is the purpose and scope of your testimony in this proceeding?**

23 A: To sponsor certain portions of the Cassadaga Wind Project Application or the Exhibits thereto.

24 **Q: What portion(s) of the Application is your testimony sponsoring?**

25 A: Exhibit 1: General Requirements, Exhibit 2: Overview and Public Involvement, Exhibit 6: Wind  
26 Power Facilities, Exhibit 9: Alternatives, Exhibit 12: Construction, Exhibit 13: Real Property, Exhibit  
27 14: Cost of Facilities, Exhibit 18: Safety and Security, Exhibit 26: Effect of Communication, Exhibit  
28 29: Site Restoration and Decommissioning, Exhibit 31: Local Laws and Ordinances, Exhibit 32:  
29 State Laws and Regulations, Exhibit 33: Other Applications and Filings, Exhibit 38: Water  
30 Interconnection, Exhibit 39: Wastewater Interconnection, Exhibit 40: Telecommunications  
31 Interconnection

32 **Q: Were these Exhibits, Application sections, or studies prepared by you or under your**  
33 **direction and supervision.**

34 A: Yes.

35 **Q: In your testimony, will you refer to, or otherwise rely upon, any studies, publications, data**  
36 **or documents produced by persons other than yourself/your company? If so, please cite**  
37 **these sources. [These are independent studies, etc.]**

38 A: References are provided in the corresponding Exhibits and Reports.

39 **Q: Does this conclude your testimony?**

40 A: Yes.

# SETH B. WILMORE

299 Commons Drive  
Oakmont, PA 15139  
440-212-2167  
seth\_wilmore@yahoo.com

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## EDUCATION

**George Mason University**, Fairfax, VA  
M.S. in Environmental Science and Policy,  
Graduate Certificate in Nonprofit Management

**Allegheny College**, Meadville, PA  
B.S. in Environmental Science (cum laude),

## PROFESSIONAL EXPERIENCE

**Associate Director, Environmental Affairs**, EverPower Wind Holdings, Inc., Pittsburgh, PA  
January 2011 – Current

Manages environmental studies and permitting processes for 2,000 MW wind development portfolio focused in the mid-Atlantic region. Successfully obtained and ensures compliance with all permits and environmental management plans during construction and operation for over 750 MW of constructed and operational wind projects in PA, NY, IL and CA. Conducts environmental and permitting due diligence for successful acquisition of over 300 MW of wind energy assets. Organizes and leads meetings and coordination with federal, state and local siting and wildlife agencies including PA, MD, NY, OH. Assisted in management and development of the first Incidental Take Permit obtained for federally endangered Indiana bat. Writes environmental and permitting bid documents in support of RFPs and Bird and Bat Conservation Plans. Implements state of the art best management practices for minimizing wildlife impacts due to wind turbine construction and operation. Represents EverPower and wind business interests in trade and wildlife groups. Project Manager for 100 MW wind development project acquisition and, following successful acquisition, led project management for additional potential acquisition opportunities.

**Project Manager**, Virginia DEQ Water Protection Permits Program, Virginia Beach, VA  
April 2010 – December 2010

Managed and reviewed submitted development project applications requesting impacts to wetlands and waters of Virginia. Worked with developers to avoid and minimize impacts to wetlands and waters including isolated wetlands. Wrote complex permits for wetlands and waters impacts. Performed site inspections and ensured compliance with all state wetlands and waters regulations. Performed isolated wetland delineation confirmations. Coordinated and communicated with a wide variety of stakeholders including developers, consultants, localities, federal agencies, and public citizens.

**Volunteer Land Protection Assistant and Wildland Fire Fighter**, The Nature Conservancy, Richmond, VA  
Oct 2009 – March 2010

Assisted land protection manager with annual report data analysis, map-making, and organization, GIS wetland and stream site assessments, easement property analysis, and writing project summaries. Performed fieldwork at wetland and stream mitigation sites including hydrology analysis, preserve monitoring, and macro-invertebrate surveys. Obtained Fire Fighter Type II certification for prescribed burning and participated in fire line preparation and prescribed burns in support of habitat restoration for federally endangered red-cockaded woodpecker.

**Manager, Environmental and Permitting**, Generation Energy, Inc., Sterling, VA  
Dec 2007-August 2009

Managed environmental studies and agency relationships for 1,000 MW wind development portfolio. Supervised NEPA Environmental Assessment and all third party contractors for 120-MW wind farm. Gave presentations and worked with landowners and public agency officials to responsibly develop projects. Developed and wrote corporate-level environmental policies, procedures and timelines to guide in the development of wind farms. Experience with managing and/or conducting the following environmental studies:

T&E species analysis, avian point counts, raptor nest surveys, wetlands reconnaissance and delineations, cultural resource surveys and Phase I Environmental Site Assessments. Operated GIS and wind resource assessment software to create turbine layouts and energy yield.

**Geographic Information Systems Analyst**, Science Applications International Corporation, Chantilly, VA  
Mar 2007- May 2008

Performed analysis and used advanced ArcGIS 9.x tools to edit LIDAR GIS data in support of DOD contracts. Helped manage and QA/QC all phases of editing process to consistently deliver projects on schedule. Obtained Inactive Department of Defense Secret Clearance

**Engineering and Scientific Intern**, Presque Isle State Park, Erie, PA  
Summer 2005, 2006

Responsible for conducting and reporting the results of water quality testing on park public beaches. Controlled invasive species including phragmites, purple loosestrife, narrow-leaved cattail, hairy willow, japanese knotweed, and bush honeysuckle. Completed dune habitat restoration. Performed shorebird monitoring and assisted park naturalists with environmental programs.

**Teaching Assistant**, GIS Laboratory, Allegheny College, Meadville, PA  
Jan 2003-May 2006

Assisted lab manager with planning and grading of student GIS courses. Worked with environmental science professors to perform with GIS aspects of their research such as map creation and data analysis. Maintained, updated, and built GIS data library for student/professor use.

**Research Assistant**, Environmental Science Dept., Allegheny College, Meadville, PA  
Nov 2003-Aug 2004

Conducted Lyme disease habitat characterization study. Performed remote sensing analysis of satellite imagery and field work ground-truthing at Hopland, CA

Summer 2004

Conducted lead exposure study of low-income children in rural Northwestern PA. Conducted surveys and collected lead samples for lab analysis

## **SKILLS & PROFESSIONAL CERTIFICATIONS**

### **Proficiencies:**

Microsoft Office: Word, Excel, Powerpoint, Outlook, Project and Access; ArcGIS 9.x, ArcIMS, ERDAS Remote Sensing Software; Trimble GPS, DeLorme XMap;

### **Certifications:**

Fire Fighter Type II – National Wildfire Coordinating Group, Virginia Nature Conservancy Chapter  
Implementation of National Environmental Policy Act – Duke University  
Introduction, Intermediate, Advanced ESRI ArcGIS classes – Allegheny College  
Wetland Delineation and Plant ID – Institute for Wetland & Environmental Education & Research  
Erosion & Sediment Control Inspector – Virginia DCR  
Candidate – Pittsburgh Leadership Development Initiative