

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of Icebreaker)	
Windpower Inc., for a Certificate to Construct a)	Case No: 16-1871-EL-BGN
Wind-Powered Electric Generation Facility in)	
Cuyahoga County, Ohio.)	

TESTIMONY OF

Jane E. Rice

**Principal
Environmental Design & Research, Landscape, Architecture,
Engineering & Environmental Services, D.P.C.**

**on behalf of
Icebreaker Windpower Inc.**

September 6, 2018

1 **1. Please state your name.**

2 Jane E. Rice

4 **2. Please state your business address.**

5 217 Montgomery Street, Suite 1000, Syracuse, NY 13202.

7 **3. Please summarize your educational background and professional experience.**

8 I received a Bachelor of Arts Degree from Creighton University in Omaha, Nebraska in
9 1981, a Juris Doctor from Creighton Law School in 1986. I practiced law with several
10 private law firms until 1991 when I joined the master program at State University of New
11 York College of Environmental Science and Forestry. I obtained a Masters in Landscape
12 Architecture in 1995. I was employed by Clough Harbor and Associates until 2005 when
13 I joined EDR. Since 1995 I have worked in the capacity as Planner, Project Manager,
14 Senior Project Manager, and Director of the Planning practice. I have over 20 years of
15 experience in community and land use planning, with 10 years of experience preparing
16 and/or supervising projects involving socioeconomic reports for wind energy projects.
17 My resume is attached as Attachment JER-1.

19 **4. By whom are you employed?**

20 Since early 2005, I have been employed by Environmental Design & Research,
21 Landscape, Architecture, Engineering & Environmental Services, D.P.C. ("EDR").

23 **5. What is your position with EDR and what are your current responsibilities?**

24 As Principal and Director of Planning, I oversee EDR's planning practice, which consists
25 of various community-centered planning initiatives that include comprehensive plans,
26 waterfront revitalization planning and design, brownfield redevelopment planning,
27 developing downtown and neighborhood revitalization strategies, zoning and land use
28 regulations, and agriculture and farmland protection plans. A small portion of our
29 planning work also includes conducting socioeconomic analyses.

1 **6. On whose behalf are you offering testimony in this case?**

2 Icebreaker Windpower, Inc. (“Icebreaker” or “Applicant”).

3
4 **6. Have you been involved in other cases subject to review by the Ohio Power Siting Board?**

5
6 Yes. I was responsible for the preparation of other Socioeconomic Reports as part of the
7 certificate of environmental compatibility and public need submitted to the Ohio Power
8 Siting Board (“Board”), including the Scioto Ridge Wind Farm (Case No. 13-1177-EL-
9 BGN), the Republic Wind Farm (Case No. 17-2295-EL-BGN), and the Timber Road IV
10 Wind Farm (Case No. 18-91-EL-BGN).

11
12 **7. Have you previously provided testimony or served as an expert witness before any other court, agency, or other body in relation to your expertise?**

13
14 Yes. I have provided testimony and served as an expert witness before the New York
15 State Public Service Commission. I provided written testimony for the Apex Clean
16 Energy Application for a Certificate of Environmental Compatibility and Public Need for
17 the Galloo Island Wind Project (Case No. 15-F-0327). I have also provided written and
18 oral testimony (as an expert witness) in Cassadaga Wind LLC’s Application for a
19 Certificate of Environmental Compatibility and Public Need for the Cassadaga Wind
20 Farm (Case No. 14-F-0490).

21
22 **8. What is your role in this Application before the Ohio Power Siting Board?**

23 My role was to oversee the preparation Icebreaker’s Socioeconomic Report. I was
24 ultimately responsible for content, organization, and compilation of the Socioeconomic
25 Report for Icebreaker’s Application to ensure it was prepared in accordance with the
26 content requirements set forth at Rule 4906-4 of the Ohio Administrative Code.

27
28 **9. Please state the purpose of your testimony**

29 I am sponsoring Exhibit M that is attached to Icebreaker’s February 1, 2017 application
30 (“Application”) in this case. Exhibit M is the Socioeconomic Report. My testimony,
31 together with the other Icebreaker witnesses testifying in this case, will confirm that the

1 joint stipulation and recommendation (“Stipulation”), which was filed in the docket on
2 September 4, 2018, and is being offered in this proceeding as Joint Exhibit 1, supports a
3 finding by the Board that the Stipulation represents that the Icebreaker project is in the
4 public interest.

5
6 **10. Have you served this role on other applications submitted to the Ohio Power Siting**
7 **Board?**

8 Yes. I served an identical role and assumed the same responsibility for all Applications
9 identified above in response to question #7, which includes a total of four Applications
10 before the Board (including Icebreaker).

11
12 **11. How would you describe your ability to adequately manage/prepare socioeconomic**
13 **reports for applications submitted to the Ohio Power Siting Board?**

14 With respect to my primary responsibility, which is ensuring a given application has been
15 prepared in accordance with the content requirements set forth in the Ohio Administrative
16 Code, I believe I have been very successful.

17
18 **12. What is your experience conducting socioeconomic analyses for wind power projects**
19 **in the State of Ohio and elsewhere?**

20 I have overseen socioeconomic studies and analyses for wind power projects since
21 joining EDR in 2005. I have been either directly involved in or have overseen the
22 preparation of socioeconomic analyses for multiple projects, all of which were included
23 as appendices (stand-alone reports) to, or within the narrative of applications for
24 certificates of environmental and public need for wind power projects in Ohio and
25 Environmental Impact Statements (“EISs”) for wind power projects in New York. All
26 socioeconomic reports or analyses prepared by EDR under my guidance have utilized the
27 Jobs Economic and Development Impact (“JEDI”) model for estimating the potential
28 economic impacts of each wind power project.

13. Please summarize the Socioeconomic Report.

The focus of the Socioeconomic Report was to assess the potential socioeconomic impacts of the project on local municipalities within a 5-mile radius from the Cleveland Public Power (“CPP”) Substation Site (“the Study Area”). This involves a review of the past and current demographic and economic characteristics and trends in the Study Area. The regional economy surrounding the Study Area is shaped in large part by the local economy of the Cleveland metropolitan areas located within Cuyahoga County. The population decline in the Study Area is projected to continue with a decrease up to 27% by 2030. Potential impacts including those to employment, earnings, and overall economic output resulting from project construction and operation are assessed in light of socioeconomic conditions within the Study Area. In short, the Icebreaker facility is expected to produce a positive economic impact on the communities within the Study Area. Through short- and long-term job creation, tax payments to each participating taxing jurisdiction, and even a modest amount of lease payments to private landowners, the project will supply a revenue stream to each of these jurisdictions without requiring significant services or expenditures on their behalf.

The project is not expected to generate significant expenditures and, thus, the lease payments, short- and long-term jobs, and payments in lieu of taxes (“PILOT”) revenues will directly and indirectly benefit businesses, taxing jurisdictions, and a few private landowners, having a positive impact on the social and economic conditions of these communities. The construction of the facility is expected to produce \$41.2 million in employment earnings and \$85.5 million in total economic output. Subsequently, each year the project is operational it is expected to generate approximately \$1.6 million in earnings and \$6.7 million in total economic output. Local employment benefits will be realized during the construction period as the project is expected to support demand for a total of 496 onsite, supply chain, and induced employment positions. Additionally, the project is expected to support a total of 28 positions during each year of its operation. Finally, the development of the project is expected to result in \$67,971.45 in annual lease payments made to participating landowners, while local government revenues will

1 increase through PILOT payments, which are estimated to range from approximately
2 \$124,200 – \$186,300.

3
4 **Methodology for Calculating Socioeconomic Benefits**

5
6 **14. Was the JEDI model used for the Icebreaker project?**

7 Yes.

8
9 **15. Can you describe the purpose of the JEDI model?**

10 The JEDI model was originally developed by National Renewable Energy Laboratory's
11 ("NREL's") WINDEXchange program to model economic impacts of wind energy
12 systems, but has since been expanded to analyze economic impacts of biofuels, coal,
13 concentrating solar power, geothermal, marine and hydrokinetic power, natural gas, and
14 photovoltaic power plants (<https://www.nrel.gov/analysis/jedi/models.html>). According to
15 the NREL website, JEDI models are used by county and state decision-makers, public
16 utility commissions, potential project owners, developers, and others interested in
17 analyzing the economic impacts associated with new or existing power plants, fuel
18 production facilities, or other projects. According to NREL Energy Analysis website, the
19 JEDI models are "...user-friendly tools that estimate the economic impacts of constructing
20 and operating power generation and biofuel plants..."
21 (<http://www.nrel.gov/analysis/jedi/>). According to NREL's 2015 JEDI Factsheet (See
22 Attachment JER-2), these input-output models are designed to provide reasonable
23 estimates, not exact numbers, of the number of jobs and economic impacts to a local area
24 that could be reasonably supported by a power project. Based on the assessment of expert
25 review, citations, user download data, and inquiries from foreign countries, the JEDI suite
26 of models appears to be a credible and well-used estimation or screening tool for gross job
27 estimates for the construction and operation of renewable energy power and fuel plants in
28 the United States. Further, based on the above comparisons, subject to the limitations and
29 challenges inherent to any comparisons of jobs estimates, JEDI results are reasonably
30 comparable to these other modeled results and empirical observations
31 (<https://www.nrel.gov/docs/fy13osti/56390.pdf>).

1
2 The JEDI Wind model has reasonable default values, derived from industry norms, that
3 can be used within the model calculations to estimate impacts from a wind project,
4 according to the NREL website. (<https://www.nrel.gov/analysis/jedi/about.html>). Default
5 values represent average costs and spending patterns developed from a number of sources,
6 including ten years of research and analysis of renewable and fossil fuel resources. Other
7 resources include personal communications and anecdotal evidence gathered to complete
8 this model, previous renewable and fossil fuel energy studies, and project-related case
9 studies (<https://www.nrel.gov/analysis/jedi/using-data.html>). Default cost assumptions,
10 however, are deemed reasonable and are adjusted to the state, year of construction, and
11 facility size (<https://www.nrel.gov/docs/fy13osti/58389.pdf>).
12

13 **16. Does this conclude your testimony?**

14 Yes.
15

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to this case. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons listed below via electronic mail this 6th day of September, 2018.

/s/ Christine M.T. Pirik

Christine M.T. Pirik (0029759)

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Icebreaker Windpower, Inc.
Case No. 16-1871-EL-BGN
Testimony
September 6, 2018

Attachment JER-1

CV/Resume

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Attorneys for Icebreaker Windpower Inc.



Jane E. Rice, JD, Principal Director of Planning



Jane is the Director of Planning at EDR. She is a community and land use planner with more than 25 years of professional experience. Jane's expertise includes land use regulations and zoning, waterfront revitalization and redevelopment, smart growth management and analysis, community engagement and consensus building. She is currently a member of the American Planning Association, New York State Bar Association, New York State Planning Federation Board of Directors, and Vice President of the Onondaga County Planning Federation Board of Directors. She has also served as Chairperson of the Village of Fayetteville Planning Board for more than 15 years. Jane presents on topics related to Sustainable Land Use Planning & Design, Resource Conservation Strategies, Form Based Zoning, Protection of Community Character, and Community Consensus Building through meaningful engagement.

As the Director of Planning at EDR, Jane has various firm management responsibilities in addition to be responsible for assigning, scheduling and coordinating all workload for the planning staff, which includes coordinating assistance from the in-house multi-disciplined team of professionals. She remains hands-on throughout the project, overseeing and advising the EDR Team as needed, as well as providing quality assurance. In all cases she vets her projects through a sustainability analysis to ensure solutions are economically, environmentally, and socially sustainable over time.

education

Master of Landscape Architecture, State University of New York College of Environmental Sciences and Forestry, Syracuse, NY, 1996.

Juris Doctor, Creighton University School of Law, 1982-1983, Albany Law School, 1984-1985.

Bachelor of Arts in Political Science, Creighton University, 1981.

professional affiliations

Vice President, Onondaga County Planning Federation Board

Chairperson, Fayetteville Planning Board

Member, Board of Directors, New York State Planning Federation

Member, American Planning Association

Member, Board of Directors, New York State APA – CNY Section

registration / certifications

American Planning Association member (APA)

Juris Doctor

employment history

Principal, Director of Planning, Senior Planner, Environmental Design & Research, Landscape Architecture and Engineering and Environmental Resources, D.P.C, Syracuse, NY, 2005-present.

Land Use Planner, Independent Consultant, Fayetteville, NY, 2004-2005.

Land Use Planner, Clough Harbour & Associates LLP, Syracuse, NY, 1997 – 2004.

Attorney at Law, Independent Consultant, Fayetteville, NY, 1991-1994.

Attorney at Law, Scolaro Law Firm, Syracuse, NY, 1987-1991.

project experience

Lakeshore Enhancement Project, Onondaga Lake, Town of Geddes, Onondaga County, NY- Directed team that created site plans and designs, and conducted extensive community outreach and engagement activities, for adaptive reuse and ecological restoration of the 4,000 acres of the former Allied Corporation property (now owned by Honeywell Corporation). The purpose of this project is to remediate and reuse the Super Fund site in a more environmentally sensitive manner.



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Transit Study Phase 1 (SMART 1) on behalf of the CNY Regional Transportation Authority, Syracuse Metropolitan Transportation Authority, Syracuse, NY- Directed team providing community planning services, that include outreach and engagement activities to a team of national consultant to advance recommendations identified in the Syracuse Transit Analysis to pursue a higher-intensity transit services along the Destiny/Regional Transportation Center to Syracuse University and James Street/South Avenue corridors.

Local Waterfront Revitalization Program (LWRP), NYSDOS, Town & Village of Clayton Jefferson County, NY- Directed team that developed the LWRP, conducted extensive community outreach and engagement activities, evaluated site and designed segments of the new RiverWalk waterfront connection and access to the St. Lawrence River.

The Riverwalk, (Phase 2 – NYSDOS / Phase 3 – NYSDOT / LAFA Region 3), NYSDOT, Village of Clayton, Jefferson County, NY- Directed site planning and design services, that include community outreach and engagement activities in support of Phase 2 of the Riverwalk Project. Currently responsible for coordinating design of best options to support Phase 3 implementation.

Hiawatha Boulevard-Lodi Street Brownfield Opportunity Area Program (BOA), NYSDOS, City of Syracuse, NY- Directed team (with Sasaki Associates) that developed a Nomination Study that incorporates a 136-acre area with 11 potential brownfield properties. This is a main artery to a vital, heavily traveled section of Syracuse. It is also an area that is suffering from depressed commercial properties and deteriorating housing stock, both of which are intermixed with active businesses. Managed team that developed the BOA, conducted extensive community outreach and engagement activities, evaluated site and designed visionary outcomes for this a low income neighborhood.

Local Waterfront Revitalization Program (LWRP), NYSDOS, City of Ogdensburg, St. Lawrence County, NY- Directed team that developed an amendment to the LWRP, conducted extensive community outreach and engagement activities, designed conceptual land use patterns, and assisted the City in identifying policies and procedures that will implement the LWRP through a series of priority projects for improving waterfront connections and economic development opportunities.

Local Waterfront Revitalization Program (LWRP), NYSDOS, Town of Alexandra & Village of Alexandria Bay, Jefferson County, NY- Directed team that identified and designed visionary outcomes for revitalization of the St. Lawrence River waterfront. Assisted in identifying opportunities for waterfront use and development, and to adopt appropriate policies and implementation strategies. Ongoing development projects include improvement to the existing Scenic View Park and creation of a new river walk along the River. Conducted extensive community outreach and engagement activities.

I-81 Viaduct- Step 2 Scoping & Preliminary Design Project, NYSDOT, City of Syracuse, NY- Currently responsible for coordinating extensive community outreach and engagement activities as a member of the Parsons Team to determine design of best options for redevelopment of this major transportation hub project located close to Downtown and University Hill area.

Local Waterfront Revitalization Program (LWRP), NYSDOS, Village of Sackets Harbor, Jefferson County, NY- Directed team that developed the LWRP, conducted extensive community outreach and engagement activities, evaluated site and designed visionary outcomes. This effort included analyzing opportunities and constraints in the Village, establishing a framework of policies to protect and enhance the resources of the Village and connections to the St. Lawrence River, and by developing proposals to capitalize on the opportunities of the waterfront within the context of established policies.

East Main Street Marketing District Plan, Rochester, NY (LAFA Region 4), NYSDOT, City of Rochester, NY- Directed site planning services, that include community outreach and engagement services, to a team of national and local consultants to identify multi-modal circulation, access and parking improvements along with recommendations for land use development, streetscape enhancements, and community branding, as well as strategies to promote housing opportunities in the area.

Niagara Gorge RIM Ecological Restoration Plan (Robert Moses Parkway Removal Study), City of Niagara Falls, NY- Directed team that quantified economic, environmental, and social costs and benefits of roadway removal and natural resource restoration proposal, and that analyzed various potential impacts including traffic distribution, active transportation, buffering, naturalization, environmental quality, and local economic development opportunities. *American Society of Landscape Architects Merit Award for Planning*

Agricultural Enhancement Plans, Tioga, Broome and Ontario County, NY- Directed public participation and outreach activities, researching countywide agricultural land uses, and agricultural economic concerns, advising county on analysis of priority lands to be protected, and drafting recommendations to drive sustainable growth consistent with industry and environmental best practices, and NYSDAM guidelines.

Niagara Falls Robert Moses Parkway Removal- Step 2 Scoping & Preliminary Design Project, NYSDOT/NYSOPRHP, Niagara Falls, NY- Directed extensive community outreach and engagement activities, and landscape design to determine and depict best options, for redevelopment of the northern section of this major transportation corridor project.

Robert Moses Parkway North Segment Step 2 Scoping & Preliminary Design Project, Niagara Falls, NY- Directed the restoration of the Niagara Gorge Rim along the upper Niagara River will be transformative for the City of Niagara Falls. A one-mile stretch of the 50-year old, four-lane Robert Moses Parkway from Main Street in the City of Niagara Falls to its intersection with Findlay Drive will be removed to allow for a re-greening of the park with multi-use trails, improved scenic overlooks, and other park amenities. Whirlpool Street will be improved as a complete street reconnecting the neighborhoods to the park. As one of the subconsultants on the consulting team EDR worked on developing three alternative concepts from which the preferred concept was selected,



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as well as simulations to illustrate the proposed gateways, streetscape improvements, and other scenic overlooks. We participated in community outreach, engaging the community throughout the process, and provided an assessment of potential impacts on ecological resources, including threatened and endangered species.

Hiawatha Boulevard-Lodi Street Brownfield Opportunity Area Program, City of Syracuse, NY- Directed the team that served as the Lead Consultant in association with Sasaki Associates to create a Nomination Study for the Hiawatha Boulevard/Lodi Street Brownfield Opportunity Area within the City of Syracuse. This BOA incorporates a 136-acre area with approximately 11 potential brownfield properties. The area is a main artery to a vital, heavily traveled section of Syracuse. It is also an area that is suffering from depressed commercial properties and deteriorating housing stock, both of which are intermixed with active businesses. This BOA presents strategic opportunities to stimulate economic development and community revitalization. It is in close proximity to the Carousel Center, a regional retail mall which has recently expanded, and that attracts millions of visitors each year, providing a critical mass of people and vehicles passing through the Hiawatha Boulevard corridor. The project area also serves as a major transportation route to access the Alliance Bank Stadium, the home field of the Chiefs, which averages half a million ticket sales per year. It is also situated adjacent to the Central New York Regional Market, which houses hundreds of stands and attracts more than a million visitors annually, as well as the Regional Transportation Center. As a result, this BOA provides a significant opportunity for the successful redevelopment of vacant, underutilized and blighted properties located in an area with very high visibility. (2011-2013)

Girl Scouts Feasibility Study and Master Plan, Tomkins County, Ithaca, NY- Directed a campus and facilities master plan as developed for all 65 acres of Camp Comstock. This master planning process included, site visits, stakeholder meetings, research on local development regulations, and historic and cultural resources relevant to the camp. The effort included improvements to existing facilities as well as new facilities and uses intended to generate new and sustainable revenues for the Girl Scouts. While developing the master plan we continuously discussed operational and programming issues / needs / preferences so that all aspects are aligned with the recommendations for future improvements and new development. The final Master Plan Report includes the initial feasibility study for all four Girl Scout Camps, the recommendation to initially invest in Camp Comstock for facility improvements as well program development, and the Master Plan with planning and design details on connectivity throughout the main camp, facility improvements, new development and minor but critically important amenities.

Plan for Reconnecting the Erie Canal Gateway, Town of DeWitt, Onondaga County, NY- Directed the EDR team that was collaborating with the town of DeWitt to prepare a plan for the revitalization of the waterfront along the NYS Canal System. The plan is proposed to include: visioning for the historic canal corridor, assessment of development patterns, identification of land and water use controls, and development of revitalization policies and implementation strategies. Work will include planning for a segment of the canal way trail that would close the gap between the Town of Dewitt and the Town of Camillus.

Agricultural and Farmland Protection Plan, Ontario County, NY- Directed the EDR team that was collaborating with Ontario County in the development of their Enhancement Plan. EDR is designing and facilitating a community outreach plan with the goal of engaging local farmers, agricultural producers, and stakeholders in the local agricultural business, and facilitated several focus group meetings. With the community's direct input, and through targeted analysis, we will make recommendations that touch upon local land use regulations, regional policies in support of agricultural producers and businesses, marketing, economic development, and implementation procedures for the Agricultural Enhancement Plan.

Skunk City Neighborhood Master Plan, Syracuse, NY- Directed the EDR team that worked in collaboration with staff from the Department of Neighborhood and Business Development and neighborhood advocates, which drafted the Skunk City Neighborhood Master Plan for the City of Syracuse in 2012. Located on the city's west side, between Strathmore, Tipp Hill, and the Near Westside, Skunk City is a neighborhood where relatively modest public investments could have an outsized impact on residents' quality of life. Our work within the neighborhood sought to increase neighborhood safety, stabilize property values, encourage new investment, reutilize abandoned properties, and improve pedestrian connectivity within and around the neighborhood. The principal intent of the Skunk City Neighborhood Master Plan is to make strategic and incremental improvements where such actions could have a positive influence on the environmental, economic, and social fabric of the community.

Sackets Harbor Zoning, Sackets Harbor, Jefferson County, NY- Directed the EDR team that was retained along with Joel Russell, Esq. to assist the Village of Sackets Harbor in rewriting their zoning regulations to foster the village's growth with a sensitivity towards its cultural resources and its traditional village core and rural edge. EDR completed a community buildout visualization to assist villagers envision its future growth under the then-existing zoning regulations. The potential loss of natural and cultural resources prompted the village to undertake the development of a new hybrid zoning code that applies a form-based structure. The new zoning law provides development regulations that address site layout, architectural treatments, and landscape standards that preserve the natural resources within the community. The new zoning law utilizes graphics and tables to provide clarity and improve readability.

Carrier Dome Rainwater Harvesting, Syracuse, NY- Directed the EDR team that designed and developed interpretive materials. In the spirit of the Onondaga County Save the Rain program and with the goal of increasing its sustainable practices, Syracuse University embraced the concept of capturing and using the rainwater that falls on the roof of the Carrier Dome. With the Rainwater Harvesting System enough water is captured to flush half the Dome's toilets and urinals during major Dome events. The Rain Water Harvesting System consists of two exterior 25,000-gallon storage tanks, and two interior 4,500 gallon tanks that will hold rainwater captured from approximately one third of the Carrier Dome's roof. Teamed with a local engineering firm, and two Syracuse University graphic design students, EDR facilitated several design workshops with students and faculty to design, select, and develop a logo for



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the Carrier Dome Rain Harvesting System as well as wall murals and a 3D model/video. EDR facilitated the design of interior interpretive wall murals, exterior signage, and an interpretive video about the rainwater harvesting process as well benefits derived from using such a system.

Oswego Brownfield Opportunity Area Program, Oswego County, NY- Directed the team that provided planning and design services to identify what is needed to achieve a coherent and integrated urban development program that preserves and protects the best of what exists, and incorporates new development in a compatible manner. The design will build on existing infrastructure, incorporate existing historic fabric where appropriate, and identify appropriate patterns and forms for new development. EDR has also been charged with identifying what is necessary to create a memorable place through development of an urban design concept that incorporates a clear organization of sites, streets and open space. (2010-2012)

Finger Lakes Sustainability Plan- Directed the team charged with development of indicators of sustainability in the agricultural and forestry sectors of a 9-county region in Western New York. Facilitated outreach initiatives and analyzed strategies and targets for sustainable development.

Comprehensive Plan Update, Town of Canandaigua, NY- Directed the team that researched existing conditions, and analyzed economic and demographic changes over time. Worked with local advisory committee to craft goals and recommended actions for plan implementation. Managed team that development of Natural Resources Inventory for examination of development proposals by local Environmental Conservation Board.

Zoning Amendments- Directed the team that researched local land use patterns and development trends, and identification of options for land protection and development strategies. Worked with Town staff and board members to shape improve existing conservation subdivision ordinance

Underground Railroad Heritage Area Management Plan (HAMP), City of Niagara Falls, NY- Directed the team that researched existing economic and demographic conditions within Niagara County. Managed team that researched history of Underground Railroad that helped shape management strategies. The HAMP was 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 Underground Railroad in the vicinity of Niagara Falls District.

Three Rivers Point Waterfront Access Study, Syracuse Metropolitan Transportation Council, Town of Clay, NY- Directed the team that provided planning and design services to determine best use for 75 acres of prime waterfront land located at the intersection of the Oswego, Seneca and Oneida Rivers. The property is an abandoned oil transfer station. In Phase 1, a conceptual master plan was developed to depict a mixed-use development. The plan also recommended public space and access to the water, along with a sensitive approach to the historic and cultural values of the Town and the site. As a result, the Town received funding to mitigate the Brownfield and demolish deteriorated buildings to make the site more attractive to investment.

Agricultural and Farmland Protection Plan, Tioga County, NY- Directed the EDR team that collaborated with Tioga County in the development of their Agriculture and Farmland Protection Plan. We designed and facilitated a community outreach plan with the goal of engaging local farmers, agricultural producers, and stakeholders in the local agricultural business. EDR developed, facilitated, and analyzed a SWOT (Strengths, Weaknesses, Opportunities, and Threats) exercise with farmers throughout the county, focusing on alternative energy opportunities, commerce and marketing, and public policy. With the community's direct input, and through targeted analysis, our findings and recommendations touched upon local land use regulations, regional policies in support of agricultural producers and businesses, marketing, economic development, and implementation procedures for the Agricultural and Farmland Protection Plan.

Local Waterfront Revitalization Plan (LWRP), Town of DeWitt, NY- Directed the EDR team that was collaborating with the town of DeWitt to prepare a plan for the revitalization of the waterfront along the NYS Canal System. The plan is proposed to include: visioning for the historic canal corridor, assessment of development patterns, identification of land and water use controls, and development of revitalization policies and implementation strategies. Work will include planning for a segment of the canal way trail that would close the gap between the Town of Dewitt and the Town of Camillus.

ReZone Syracuse, City of Syracuse, NY- Directed EDR team assigned to support a nationally-recognized land use consulting firm to draft a new zoning code for the City of Syracuse. Project objectives include: (1) ensure the new ordinance and map implement the recommendations of the Comprehensive Plan 2040, including the Syracuse Land Use & Development Plan 2040; (2) transition from the current use-focused, Euclidian zoning ordinance to an updated ordinance that incorporates principles of Form Based Codes, and Smart Growth; (3) develop and/or improving standards regulating urban design, urban agriculture, lighting, signage, landscaping, parking, site design, infill development, and vacant land management; (4) promote and facilitate historic preservation; (5) develop sustainable development provisions regarding: climate adaptation, renewable energy infrastructure, green building standards, and green infrastructure; (6) increase protection of natural resources; (7) streamline the development review process by creating more predictable zoning regulations; (8) update the format and structure of the zoning ordinance to be user-friendly and include graphics and illustrations; (9) remove inconsistencies, outdated language, and reducing the complexity of the zoning ordinance; (10) facilitate increased public awareness of, and participation in zoning reviews and processes; and (11) increase ways to use technology to provide and receive information from the public. EDR is leading the update of the zoning map, participating in public engagement and education, implementing character area recommendations noted in the municipal land use plan, and drafting the landscape standards section of the new ordinance.

Syracuse Metropolitan Transportation Authority, Transit Study Phase 1 (SMART 1) (on behalf of the Central Regional Transportation Authority), Syracuse, NY- Directed EDR team assigned to provide community planning services, that include outreach and engagement activities to a team of national consultant to advance recommendations identified in the Syracuse Transit Analysis to pursue a higher-intensity transit services along the Destiny/Regional Transportation Center to Syracuse University and James Street/South Avenue corridors.



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Lakefront Regulating Plan & Zoning Code Revisions, City of Syracuse, NY- Managed and worked alongside the EDR team assigned to ensure that improvements to the 1,200-acre Onondaga Lakefront would be developed using the principles of New Urbanism. EDR applied Form-Based Code techniques to revise the zoning for this area. The new code emphasized the character of the streets and other public spaces, and a mixture of land uses including retail, office, technology, light industry, waterfront recreation, and residential. EDR provided extensive community outreach. Hybrid code was adopted and integrated into the existing zoning code

Multiple Dwellings Study, Town of Henrietta, NY- Directed EDR team assigned to provide planning expertise related to an in-depth review and analysis of existing land use plans and regulations, and to develop proposed zoning amendments related to multiple dwellings and other land uses within the Town of Henrietta.

Empire State Development, Downtown Revitalization Plans, Round 1- Oversaw EDR team that assisted with design (focusing on waterfront improvements) for City of Jamestown, and with zoning for the City of Oswego and Elmira. **Round 2** – Oversaw EDR team that assisted with design (focusing on waterfront improvements) for City of Hudson, and with zoning and permitting for the City of Cortland.

New York Rising Community Reconstruction Plan, Herkimer, Madison, & Oneida County, NY- Directed the New York Rising Community Reconstruction Program that was established by the New York State Department of State in the wake of several severe weather events including Hurricanes Sandy and Irene, Tropical Storm Lee, and the devastating floods of 2013. The program leverages state investments to assist with reconstruction projects directed toward damaged infrastructure, as well as other projects that are intended to mitigate against future risks and increase their resiliency in the face of future storm events. As a member of the consulting team EDR assisted with community outreach throughout Madison, Oneida, and Herkimer Counties, where back-to-back storms flooded entire communities twice within three days – washing out roads, bridges, utilities, and other infrastructure. The New York Rising Countywide Resiliency Plan (for each county) represents the first steps that the county and state will take toward implementing priority projects, and ultimately creating a more resilient Madison, Oneida, and Herkimer County.

Governor's Office of Storm Recovery, Village of Waterfront Resiliency Program, NY- Directed EDR to provide community engagement services to focus stakeholders in moving community planning and capacity building, economic development, health and social services, housing, infrastructure, natural and cultural resource recovery projects, programs, and actions forward under the NYRCR Planning Program.

Onondaga County Multi-Jurisdictional Hazard Mitigation Plan Update- Currently overseeing EDR team providing community outreach and engagement services. The purpose of this project is to provide consultant services to update the Plan for Onondaga County and 35 participating municipalities and jurisdictions. The final plan must also meet Federal and State requirements and be approved by the Federal Emergency Management Agency and the NYS Division of Homeland Security and Emergency Services.

Genesee Transportation Council, Ontario Lake Parkway Transportation Alternatives Feasibility Study, Towns of Kendall and Carlton, Orleans County, NY- Managing land use planning and design, needs assessment, and community engagement services to support the determination of the feasibility of re-purposing, in whole or part, the eastbound and/or westbound lanes of approximately 12.7-miles of Lake Ontario State Parkway. The deteriorating condition of the westernmost portion of the Parkway, has raised legitimate concerns about the long-term viability of its continued operation as a divided, four-lane highway. The proposed project will investigate whether it is financially feasible to re-purpose or decommission the eastbound and westbound lanes or portions thereof, while still providing an appropriate facility for vehicle demand.

Old Erie Canal Corridor Local Waterfront Revitalization Program (LWRP), NYSDOS, Madison County, NY- Currently directing the EDR team collaborating with Madison County to prepare a plan for reimagining the Old Erie Canal Corridor. The plan is proposed to include: visioning for the historic canal corridor, assessment of development patterns, identification of land and water use controls, and development of revitalization policies and implementation strategies.

Local Waterfront Revitalization Program (LWRP) Update, NYSDOS, City of Binghamton, Broome County, NY- Currently directing the EDR team collaborating with the City of Binghamton to update the LWRP to reflect current local conditions including significant new development, and to include recommendations and projects that build greater community resilience to natural hazards and resurrect housing and businesses damaged by recent flooding events. An approved LWRP will guide sustainable development, increase utilization of the waterfront, and promote economic development to improve the overall quality of life for residents and visitors. This project also includes preparation of National Flood Insurance Program (NFIP) Community Rating System for the City, a program that recognizes community floodplain management activities that exceed the minimum NFIP requirements and is necessary to occur as part of any waterfront management plan.



Jane E. Rice, JD, Principal
Director of Planning

publications / presentations

Presenter, Onondaga County Planning Federation, McIntyre Commons: A Case Study in Brownfield Redevelopment, Community Character, and Environmental Integrity, March 5, 2015

Presenter, Onondaga County Planning Federation, Form-Based Zoning: A Creative Approach, March 13, 2014

Presenter, Onondaga County Planning Federation, Sustainable Land Use Planning & Resource Conservation Strategies, March 14, 2013

Panelist, GreeningUSA Green Bag Lunch Series, Sustainable Land Use Planning & Resource Conservation Strategies, 2013.

Presenter, Sustainable Community Planning, APA/ASLA Upstate NY Chapters Joint-Conference, Utica NY, September 2011.

Presenter, Land Use Planning Workshop, The Benefits of Sustainable Community Planning & Design, Jefferson Community College Center for Community Studies, 2011.

Land Use Training Workshop for Herkimer-Oneida Counties, Herkimer-Oneida Counties Comprehensive Planning Program, 2010.

Land Use Planning Workshop for Jefferson County, 2009.

Annual Planning Symposium for the Onondaga County Planning Federation, Syracuse, NY, 2008 and 2009.

Icebreaker Windpower, Inc.
Case No. 16-1871-EL-BGN
Testimony
September 6, 2018

Attachment JER-2

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JEDI: Jobs and Economic Development Impact Model

The Jobs and Economic Development Impact (JEDI) models are user-friendly tools that estimate the gross economic impacts of constructing and operating power generation, transmission, and biofuel plants at the state or national level. First developed by NREL's researchers to model wind energy jobs and impacts, JEDI has been expanded to also estimate the economic impacts of biofuels and biopower, coal, conventional hydro, concentrating solar power, geothermal, marine and hydrokinetic power, natural gas, photovoltaics, and transmission lines.

Based on project-specific and default inputs (derived from industry norms), JEDI estimates the number of jobs and economic impacts to a local area that could reasonably be supported by a power project. For example, JEDI estimates the number of in-state construction jobs from a new wind farm.

JEDI models are input-output models designed to provide reasonable estimates, not exact numbers. JEDI also provides estimates on land lease and property tax revenues, when appropriate. Various ownership and financing structures can be incorporated by the user as well. JEDI presents gross project-specific

results. It does not consider potential electricity price impact or alternative investment options. Using model defaults, results are reported on a statewide or national scale. However, JEDI can be used on a county or region by incorporating additional data (not included in the model).

Jobs, earnings, and output are distributed across three categories:

- Project Development and On-site Labor Impacts
- Local Revenue and Supply Chain Impacts
- Induced Impacts.

Wind Energy's Economic "Ripple Effect"

Project Development & On-Site Labor Impacts

- Construction
- Management
- Administrative support
- Cement truck drivers
- Road crews
- Maintenance
- Legal and siting

Local Revenue & Supply Chain Impacts

- Blades, towers, and management, gas and gas station workers
- Supporting businesses, such as bankers financing the construction, contractors, manufactures, and equipment suppliers
- Hardware store purchases and workers, spare parts and their suppliers

Induced Impacts

Jobs and earnings that result from the spending supported by the project, including benefits to grocery store clerks, retail salespeople, and child-care providers

Construction Phase = 1-2 years
 Operation Phase = 20+years

Source: National Renewable Energy Laboratory

Wind Farm — Project Data Summary Based on User Modifications to Default Values

Project Location	Colorado
Year of Construction	2015
Total Project Size - Nameplate Capacity (MW)	100
Number of Projects (included in total)	1
Turbine Size (kW)	2,000
Number of Turbines	50
Installed Project Cost (\$/kW)	\$1,796
Annual Direct O&M Cost (\$/kW)	\$25.92
Money Value (Dollar Year)	2015
Installed Project Cost	\$179,570,415
Local Spending	\$39,454,433
Total Annual Operational Expenses	\$29,612,853
Direct Operating and Maintenance Costs	\$2,592,386
Local Spending	\$759,545
Other Annual Costs	\$27,020,467
Local Spending	\$959,976
Debt and Equity Payments	\$0
Property Taxes	\$567,590
Land Lease	\$300,000

Local Economic Impacts — Summary Results

During construction period (Project Development and Onsite Labor Impacts)	Jobs	Earnings (in millions for 2015)	Output (in millions for 2015)	Value Added (GDP)
Construction and Interconnection Labor	60	\$3.60		
Construction-Related Services	6	\$0.60		
Total	65	\$4.20	\$4.60	\$4.30
Turbine and Supply Chain Impacts	227	\$14.50	\$38.80	\$18.80
Induced Impacts	119	\$6.90	\$19.10	\$12.10
Total Impacts	412	\$25.60	\$62.50	\$35.20

During operating years (annual)				
Onsite Labor Impacts	6	\$0.40	\$0.40	\$0.40
Local Revenue and Supply Chain Impacts	7	\$0.40	\$1.90	\$1.50
Induced Impacts	5	\$0.30	\$0.90	\$0.60
Total Impacts	18	\$1.10	\$3.20	\$2.40

Notes: Construction and operating jobs are full-time equivalent (FTE) for a period of 1 year (1 FTE = 2,080 hours). Wind farm workers include field technicians, administration, and management. Economic impacts "During operating years" represent impacts that occur from wind farm operations/ expenditures. The analysis does not include impacts associated with spending of wind farm "profits" and assumes no tax abatement unless noted. Totals may not add up due to independent rounding.

Who Uses JEDI?

JEDI models are used by county and state decision-makers, public utility commissions, potential project owners, academics, and others interested in the economic impacts from new electricity generation projects.

JEDI's user-friendly design allows novices and advanced users to explore the statewide jobs and economic impacts from the construction and operation of power plants. Advanced users can incorporate specific data to tailor model inputs and refine conclusions drawn from model output.

JEDI model defaults are based on interviews with industry experts and project developers and engineering cost models. Economic multipliers contained within the model are derived from the MIG IMPLAN model.

The JEDI model provides output in table form (left). Presenting results visually provides a more intuitive way of understanding the distribution of jobs and economic impacts (see ripple chart).

Find More Information

Download JEDI at
www.nrel.gov/analysis/jedi/

Submit questions to
JEDIsupport@nrel.gov

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NREL/FS-5000-64129 • August 2015

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

9/6/2018 2:22:31 PM

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Case No(s). 16-1871-EL-BGN

Summary: Testimony of Jane E. Rice electronically filed by Christine M.T. Pirik on behalf of Icebreaker Windpower Inc.