COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF LOST CITY RENEWABLES LLC FOR A CERTIFICATE OF CONSTRUCTION FOR AN APPROXIMATELY 250 MEGAWATT MERCHANT ELECTRIC SOLAR GENERATING FACILITY IN MUHLENBERG COUNTY, KENTUCKY PURSUANT TO KRS 278.710 AND 807 KAR 5:110	)))))	CASE NO. 2024-00406

WITNESS LIST

Lost City Renewables LLC ("Lost City"), by counsel, pursuant to 807 KAR 5:110, Section 6 and other applicable law, does hereby give notice of its intent to make the following individuals available to provide fact and expert testimony at the hearing for this matter which is scheduled for 9:00 a.m. on Friday, June 13, 2025.

Richard Kirkland will be available to provide testimony regarding the Property Value Impact Study he performed for the Project. Mr. Kirkland will be able to provide testimony about the project's impact on neighboring property values. Mr. Kirkland will also be able to testify regarding any impact the transmission line could have on neighboring property values. A copy of Mr. Kirkland's report was filed with the Application in this matter. Mr. Kirkland has nearly 30 years of experience in appraisals and is a State Certified General Appraiser in North Carolina. He founded Kirkland Appraisals in 2003. Mr. Kirkland has submitted numerous property-value reports associated with solar-energy generating facilities that support projects approved by the Siting Board. Mr. Kirkland graduated from the University of North Carolina at Chapel Hill in 1993 with a bachelor's degree in English. Mr. Kirkland's curriculum

vitae is attached. Pursuant to the Siting Board's order dated June 3, 2025, Mr. Kirkland will appear virtually.

Dr. Paul Coomes will be available to provide testimony on the economic impact that the Project will have on Muhlenberg County and the surrounding region. Furthermore, Dr. Coomes will also be able to provide testimony about the project investment and associated costs, the tax impact of the project, and the economic impacts over the project's lifetime. He will also testify about any spin-off jobs and employment related to lease payments the project may bring. He has sponsored responses to requests for information and his revised report, which have been filed in this matter. Dr. Coomes is an Emeritus Professor at the College of Business, University of Louisville, where he first started teaching in 1985. Dr. Coomes has provided services to multiple renewable-energy projects submitted to the Siting Board. Dr. Coomes has a Ph.D. in Economics from the University of Texas along with a bachelor's degree from Brescia University and a master's degree from Indiana University. A summary biographical statement for Dr. Coomes is attached.

Sean Joshi will be available to provide testimony regarding a broad range of issues, including general matters relating to the project; site selection; planning; design; permitting; project schedule; operation; management; environmental surveys; mitigation measures; corporate structure of Lost City; integration with the Tennessee Valley Authority; and communications with local officials and members of the public. He has sponsored several responses to requests for information, which have been filed in this matter. Mr. Joshi heads Sunrise Renewables' projects for Copenhagen Infrastructure Partners North America, which develop utility-scale solar, battery storage, and green hydrogen projects. He has over 25 years of utility industry experience. Mr. Joshi has a master's degree in chemical engineering from Drexel University. A summary biographical statement for Mr. Joshi is attached.

Shane Kelley will be available to provide testimony on the project site preparation; construction;

project layout; the viewshed analysis; stormwater pollution prevention plan; landscaping plan; decommissioning plan prepared for the project. He has sponsored several responses to requests for information and reports, which have been filed in this matter. Mr. Kelley is employed by Stantec as the Team Lead of Stantec's Kentucky Natural Resources Team. Mr. Kelley has worked on 16 renewable energy projects within the state of Kentucky; while on those projects, Mr. Kelley has served as both a project manager and a technical lead. Mr. Kelley graduated from the University of Kentucky in 2014 with a Bachelor of Science in Natural Resource and Environmental Science. Mr. Kelley's curriculum vitae is attached.

Marty Marchaterre will be available to provide testimony on the following topics: impact on roads and traffic; vegetation; environmental permitting; construction activities, including noise mitigation relating to construction; decommissioning of the Project. He has sponsored several responses to requests for information and reports, which have been filed in this matter. Mr. Marchaterre is a Senior Environmental Planner and Project Manager at Copperhead Environmental Consulting. He has extensive experience with NEPA documentation and studies, and his expertise includes solar surveys, ecological surveys, biological assessments, noise analyses, watershed planning, trail and park development studies, and community impact assessments. Mr. Marchaterre graduated from Williams College with a bachelor's degree in History and Political Science and obtained his J.D. from the College of William and Mary. Mr. Marchaterre's curriculum vitae is attached.

RESPECTFULLY SUBMITTED,

STURGILL, TURNER, BARKER & MOLONEY, PLLC

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4898-9894-3561, v. 2

Kirkland Appraisals, LLC

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9408 Northfield Court
Raleigh, North Carolina 27603
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Professional Experience

Kirkland Appraisals, LLC, Raleigh, N.C. — 2003 – Present
Commercial appraiser

Hester & Company, Raleigh, N.C.
Commercial appraiser — 1996 – 2003

Professional Affiliations

MAI (Member, Appraisal Institute) designation #11796 — 2001
NC State Certified General Appraiser # A4359 — 1999
VA State Certified General Appraiser # 4001017291
SC State Certified General Appraiser # 6209
KY State Certified General Appraiser # 5522
TN State Certified General Appraiser # 6240
FL State Certified General Appraiser # RZ3950
GA State Certified General Appraiser # 321885
MI State Certified General Appraiser # 1201076620
PA State Certified General Appraiser # GA004598
OH State Certified General Appraiser # 2021008689
IN State Certified General Appraiser # CG42100052
IL State Certified General Appraiser # 553.002633
LA State Certified General Appraiser # APR.05049-CGA
TX State Certified General Appraiser # 1380528 G

Education

Bachelor of Arts in English, University of North Carolina, Chapel Hill — 1993

Continuing Education

Uniform Standards of Professional Appraisal Practice Update	2024
ASFMRA Integrated Approaches to Value (A360)	2024
ASFMRA Best in Business Ethics	2023
Appraising Natural Resources Series – Oil, Gas & Minerals	2023
Appraisal of Industrial and Flex Buildings	2023
Commercial Land Valuation	2023
Fair Housing, Bias and Discrimination	2023
Pennsylvania State Mandated Law for Appraisers	2023
What NOT to Do (NCDOT Course)	2023
The Income Approach – A Scope of Work Decision	2023
Valuation of Residential Solar	2022
Residential Property Measurement and ANSI	2022
Business Practices and Ethics	2022
Uniform Standards of Professional Appraisal Practice Update	2022

Sexual Harassment Prevention Training	2021
Appraisal of Land Subject to Ground Leases	2021
Michigan Appraisal Law	2020
Uniform Standards of Professional Appraisal Practice Update	2020
Uniform Appraisal Standards for Federal Land Acquisitions (Yellow Book)	2019
The Cost Approach	2019
Income Approach Case Studies for Commercial Appraisers	2018
Introduction to Expert Witness Testimony for Appraisers	2018
Appraising Small Apartment Properties	2018
Florida Appraisal Laws and Regulations	2018
Uniform Standards of Professional Appraisal Practice Update	2018
Appraisal of REO and Foreclosure Properties	2017
Appraisal of Self Storage Facilities	2017
Land and Site Valuation	2017
NCDOT Appraisal Principles and Procedures	2017
Uniform Standards of Professional Appraisal Practice Update	2016
Forecasting Revenue	2015
Wind Turbine Effect on Value	2015
Supervisor/Trainee Class	2015
Business Practices and Ethics	2014
Subdivision Valuation	2014
Uniform Standards of Professional Appraisal Practice Update	2014
Introduction to Vineyard and Winery Valuation	2013
Appraising Rural Residential Properties	2012
Uniform Standards of Professional Appraisal Practice Update	2012
Supervisors/Trainees	2011
Rates and Ratios: Making sense of GIMs, OARs, and DCFs	2011
Advanced Internet Search Strategies	2011
Analyzing Distressed Real Estate	2011
Uniform Standards of Professional Appraisal Practice Update	2011
Business Practices and Ethics	2011
Appraisal Curriculum Overview (2 Days – General)	2009
Appraisal Review - General	2009
Uniform Standards of Professional Appraisal Practice Update	2008
Subdivision Valuation: A Comprehensive Guide	2008
Office Building Valuation: A Contemporary Perspective	2008
Valuation of Detrimental Conditions in Real Estate	2007
The Appraisal of Small Subdivisions	2007
Uniform Standards of Professional Appraisal Practice Update	2006
Evaluating Commercial Construction	2005
Conservation Easements	2005
Uniform Standards of Professional Appraisal Practice Update	2004
Condemnation Appraising	2004
Land Valuation Adjustment Procedures	2004
Supporting Capitalization Rates	2004
Uniform Standards of Professional Appraisal Practice, C	2002
Wells and Septic Systems and Wastewater Irrigation Systems	2002
Appraisals 2002	2002
Analyzing Commercial Lease Clauses	2002
Conservation Easements	2000
Preparation for Litigation	2000
Appraisal of Nonconforming Uses	2000
Advanced Applications	2000
Highest and Best Use and Market Analysis	1999
Advanced Sales Comparison and Cost Approaches	1999
Advanced Income Capitalization	1998

Valuation of Detrimental Conditions in Real Estate	1999
Report Writing and Valuation Analysis	1999
Property Tax Values and Appeals	1997
Uniform Standards of Professional Appraisal Practice, A & B	1997
Basic Income Capitalization	1996

Biographical Information

Paul A. Coomes, Ph.D.
Emeritus Professor of Economics, University of Louisville
3604 Trail Ridge Road, Louisville KY 40241
paul.coomes@louisville.edu *coomes.economics@gmail.com*

Paul Coomes is Emeritus Professor of Economics at the University of Louisville. He is a graduate of Brescia College (BA), Indiana University (MS), and the University of Texas (Ph.D.). Professor Coomes came to the University of Louisville from Texas in 1985. He has taught courses in urban economics, forecasting, microeconomics and macroeconomics. Most of his research concerns regional and urban economics, economic development, and measurement problems.

His scholarly research has appeared in many journals, including the *Journal of Labor Economics*, *Entrepreneurship Theory and Practice*, *Real Estate Economics*, *Journal of Urban Economics*, *Journal of Regional Science, Environment and Planning A, Urban Studies, Economic Development Quarterly*, and the *Journal of Economic and Social Measurement*.

He has had university-based contract research arrangements with most of the large organizations in the region, including UPS, General Electric, Amazon, Churchill Downs, LG&E, Louisville Water Company, Brown-Forman, Humana, Kentucky Distillers Association, Kentucky Fair Board, Kentucky Hospital Association, Jewish Hospital, several state government cabinets, and many others. He has also consulted for several major aluminum and steel companies, including TimkenSteel, Warren Steel, RioTinto, Alcan, Ormet, and Noranda; as well as many solar energy companies. He continues to produce research reports for the Kentucky Distillers' Association and the Kentucky Wine and Spirits Wholesale Association. He recently completed a research for the Elizabethtown KY area, where they are preparing for the impacts of a huge SK/Ford battery plant for electric vehicles. He served for many years as a consultant to the Kentucky Chamber of Commerce.

Coomes is past chair of the Economics department at Louisville, past president of the Kentucky Economic Association, and was the 2014 Distinguished Economist of that organization. Professor Coomes has completed several major projects that impact local economic development policy, including the macro performance measuring system that became the analytical basis behind the Boyle Report and the creation of Greater Louisville, Inc, Louisville's Chamber of Commerce. He also developed many regional economic impact models used by private and public groups to evaluate industrial developments. After retiring from the university, he served for a year as Executive Director of the Office Health Policy, Kentucky state government.

Sean Joshi
Sunrise Renewables
Development Manager.

Sean Joshi heads Sunrise Renewables projects for Copenhagen Infrastructure Partners North America. These utility-scale projects include solar, battery storage, green hydrogen, and other technologies with promising paths to commercialization.

With more than 25 years of utility industry experience, helping reduce carbon footprints. Sean has developed a roadmap for efforts to achieve net-zero carbon future. He has helped clients gradually transition to solutions for reduced carbon footprints while maintaining supply reliability.

Sean is recognized as an industry leader who has developed projects encompassing more than 7 GW of power for regional transmission organizations (RTOs) throughout the US. Through this vast experience, Sean gained expertise covering the entire development chain of a project from conceptualization to shovel-ready. Sean has overseen a multitude of key activities along the chain, including retaining exceptionally qualified consultants and engineers, as well as the management of processes such as siting, pre-studies, fatal-flaw analyses, environmental studies, engineering and design, permitting, interconnection process, negotiations with vendors, contractors and suppliers; and off-take agreements and execution.

Sean has a Master's degree in chemical engineering from Drexel University in Philadelphia, PA. He was previously employed by Mitsubishi Power, Mitsubishi Corporation, and Siemens Energy.

Shane Kelley TN-QHP

Natural Resources Team Lead, Project Manager, Senior Biologist

11 years of experience · Louisville, Kentucky

Shane serves as the Natural Resources Team Lead for the Kentucky natural resources team. He has eleven years of experience in the natural resources field conducting work in multiple areas with a particular focus on USACE Section 404 permitting, Section 7 protected species consultation, Phase I ESAs, hazardous materials surveys, and various ecological and biological field surveys. He is a Qualified Hydrologic Professional (QHP) in the state of Tennessee and has personally conducted thousands of acres of stream and wetland delineations throughout the southeast. Additionally, he is a federally permitted bat biologist permitted for Indiana bats (Myotis sodalis), northern long-eared bats (Myotis septentrionalis), gray bats (Myotis grisescens), and Virginia big-eared bats (Corynorhinus townsendii virginianus).

EDUCATION

BS, Natural Resource and Environmental Science, University of Kentucky, Lexington, Kentucky, United States, 2014

PROJECT EXPERIENCE

RENEWABLE ENERGY

Song Sparrow Solar | Clearway Energy | Ballard County, KY, USA | 2023-Present | Project Manager; Field Lead

Served as the Project Manager and guided the client through the Kentucky Siting Board process for a 104-megawatt utility scale solar farm located in Ballard County, Kentucky. Attended public meetings and the siting board hearing and managed the completion of all the studies required for siting board approval (noise, decommissioning, traffic, etc.) as well as assisting in drafting the siting board application. Was the acting technical lead for wetlands, T&E, and the Phase I ESA and led teams to complete the field surveys and provide technical reports as well as a jurisdictional determination with USACE.

Dogwood Corners Solar | Oriden Power | Christian County, KY, USA | 2023-Present | Project Manager

Served as the Project Manager and assisted in preparation of the Kentucky Siting Board application for the 125-megawatt utility scale solar and 25-megawatt BESS located in Christian County, Kentucky within the TVA service region. Managed the completion of technical reports required for the siting board application including a limited noise assessment, traffic assessment, and decommissioning plan. Additionally, attended the public meeting and acted as an expert witness at the siting board hearing.

Northern Bobwhite Solar | EDF Renewables | Marion County, KY, USA | 2023-Present | Project Manager

Served as the Project Manager and assisted the client with environmental studies and technical studies required for the state siting board application for a 96-megawatt utility scale solar development located in Marion County, Kentucky. Managed production of a traffic assessment, limited noise assessment, Phase I ESA, and permit matrix detailing federal, state, and local permits that may be required in the development of the site. Additionally, assisted in conducting threatened and endangered species surveys for the Indiana bat (Myotis sodalis) and northern long-eared bat (Myotis septentrionalis). No currently listed bat species were captured during the surveys.

Summer Shade Solar | Candela Renewables | Metcalf County, KY, USA | 2021-Present | Project Manager

Served as the Project Manager and assisted the client with environmental studies and technical studies required for the state siting board application for a 104-megawatt utility scale solar development located in Metcalf County, Kentucky. Additionally, Stantec conducted all the background environmental surveys for the project including wetland delineations, cultural surveys, Phase I ESA, and threatened and endangered species surveys for the Indiana bat (Myotis sodalis) and northern long-eared bat (Myotis septentrionalis). No currently listed bat species were captured during the surveys.

Bluegrass Green Solar | Confidential Client | Ohio County, Kentucky, USA | 2023-2024 | Project Manager

Acted as the Project Manager for assistance in the development of a utility scale solar project located in Ohio County, Kentucky. Managed and provided technical review of a Critical Issues Analysis (CIA), Phase I ESA, permit matrix covering any federal, state, or local permits that may be required to develop the project, and limited wetland delineation on approximately 3,200 acres or reclaimed coal mine.

Stonefield Solar Project | Naturgy Candela | Hardin County, KY, USA | 2021-Present | Project Manager; Wetlands Technical Lead

Currently serving as the Project Manager assisting in the development of a utility scale solar project located in Hardin County, Kentucky. Lead field surveys for the entire site including wetland delineation, T&E habitat assessments, and Phase I ESA. Stantec also conducted T&E presence/absence surveys for listed bat species for the project. Several federally endangered Indiana bats (Myotis sodalis) were captured during the surveys. Shane is leading coordination with USFWS to determine mitigation measures for the bats captured onsite. Additionally, will assist the client in navigating the state siting board process and will produce all of the background studies required for the state permitting process (noise, traffic, decommissioning, etc.).

Confidential Project | Confidential Client | Kentucky, USA | 2023-Present | Project Manager

Serving as the Project Manager for a utility scale energy park including wind, solar, and BESS in Kentucky. Managing all the background environmental studies including eagle nest surveys, raptor surveys, bat presence/absence surveys, and acoustics. Additionally, will assist the client in navigating the state siting board process and will produce all of the background studies required for the state permitting process (noise, traffic, decommissioning, etc.).

Flat Top Solar | Confidential Client | Kentucky, USA | 2021-Present | Technical Lead

Stantec was retained to conduct field surveys and technical reports for environmental surveys on an approximate 450-acre utility scale solar development located in Kentucky. Shane served as the field lead for conducting stream and wetland surveys for use in coordination with USACE. While on site a threatened and endangered species habitat assessment was conducted to determine the potential for any listed species to be present on the site. Additionally, he served as the primary author for the technical reports produced from these surveys. He will assist the client in the management and submittal of the state siting board application.

Sunflower Prairie Solar | Confidential Client | Kentucky, USA | 2021-Present | Technical Lead

Stantec was retained to conduct field surveys and technical reports for environmental surveys on an approximate 800-acre utility scale solar development located in Kentucky. Shane served as the field lead for conducting stream and wetland surveys for use in coordination with USACE. While on site a threatened and endangered species habitat assessment was conducted to determine the potential for any listed species to be present on the site. Additionally, he served as the primary author for the technical reports produced from these surveys. He also conducted bat surveys to determine the presence/absence of listed bat species within the project. He will assist the client in the management and submittal of the state siting board application.

Ashwood Solar | RWE Renewables | Lyon County, KY, USA | 2020-Present | Project Manager

Served as the Project Manager and guided the client through the Kentucky Siting Board process for a utility-scale solar farm located in Lyon County, Kentucky. Attended public meetings and the siting board hearing and managed the completion of all the studies required for siting board approval (noise, decommissioning, traffic, etc.) as well as assisting in drafting the siting board application. Was the acting technical lead for wetlands, T&E, and the Phase I ESA and led teams to complete the field surveys and provide technical reports as well as a jurisdictional determination with USACE.

Martin County Solar I | Savion | Martin County, KY, USA | 2020-Present | Project Manager

Lead a 10-day wetland delineation on an approximately 1,200-acre site in Eastern Kentucky to assist in the development of a utility scale solar farm. Wetland delineations were conducted according to the standard methods set forth in the U.S. Army Corps of Engineers (USACE) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0). In total, 53 wetlands were identified totaling 6.8 acres and 40 streams totaling almost six miles. Also assisted another team in completing a habitat assessment for the Indiana bat (Myotis sodalis) and northern long-eared bat (Myotis septentrionalis) on the site while conducting delineations. Additionally, assisted in conducting presence/absence surveys for listed bat species on the site over three days. Later serving as the project manager Shane assisted in preparation of several of the documents required for siting board approval. The project has since been approved by the Kentucky Siting Board.

Martin County Solar II | Savion | Martin County, KY, USA | 2020-Present | Project Manager

Lead a 6-day wetland delineation on an approximately 800-acre site in Eastern Kentucky to assist in the development of a utility scale solar farm. Wetland delineations were conducted according to the standard methods set forth in the U.S. Army Corps of Engineers (USACE) Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0). In total, 53 wetlands were identified totaling 6.8 acres and 40 streams totaling almost six miles. Also assisted another team in completing a habitat assessment for the Indiana bat (Myotis sodalis) and northern long-eared bat (Myotis septentrionalis) on the site while conducting delineations. Additionally, assisted in conducting presence/absence surveys for listed bat species on the site over three days. Later serving as the project manager Shane assisted in preparation of several of the documents required for siting board approval. The project has since been approved by the Kentucky Siting Board.

Preston Solar | Energix | Bath County, KY, USA | 2023 | Project Manager

Served as the Project Manager for the development of a utility scale solar development located in Bath County, Kentucky. Stantec conducted a wetland delineation, habitat assessment, and desktop cultural resources assessment to assist in identifying any constraints that would be a potential hinderance to solar farm development and inform design on the site.

Clinton Solar | Confidential Client | Clinton County, KY, USA | 2023-Present | Project Manager

Served as the Project Manager for the development of a utility scale solar development located in Clinton County, Kentucky. Stantec conducted a wetland delineation, habitat assessment, and desktop cultural resources assessment to assist in identifying any constraints that would be a potential hinderance to solar farm development and inform design on the site. Additionally, Stantec is conducting presence/absence bat surveys for the project.

Bluegrass Plains Solar | EKPC | Fayette County, KY, USA | 2023-2024 | Technical Lead

Served as the technical lead for the development of a utility scale solar development located in Fayette County, Kentucky. Stantec conducted a wetland delineation, habitat assessment, and Biological Assessment to assist in identifying any constraints that would be a potential hinderance to solar farm development and inform design on the site. Additionally, Stantec conducted presence/absence bat surveys for the project.

Solar Coops 4-7 | EKPC | Kentucky, USA | 2024-Present | Technical Lead

Served as the technical lead for the development of four utility scale solar developments located throughout Kentucky. Shane lead the development of the Site Assessment Reports and supporting studies (noise, decommissioning plan, vegetative screening plan, glare study, property value assessment, etc.) in support of a siting board application. Additionally, he is leading the background environmental studies on one of the four projects where Stantec is conducting a wetland delineation, habitat assessment, cultural resources surveys, and Biological Assessment to assist in identifying any constraints that would be a potential hinderance to solar farm development and inform design on the site.

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COPPERHEAD
ENVIRONMENTAL CONSULTING

MARTY MARCHATERRE
SENIOR ENVIRONMENTAL PLANNER

Education
J.D. 1988, College of William and Mary, Williamsburg, Virginia
B.A. History and Political Science, 1985, Williams College, Williamstown, Massachusetts
Williams-Mystic American Maritime Program, 1985

Professional Associations
Virginia State Bar Association, Environmental Law Section
District of Columbia Bar Association, Environment, Energy and Natural Resources

Qualifications and Background
Mr. Marchaterre is an attorney with more than 35 years of environmental, regulatory, and permitting experience. Mr. Marchaterre has extensive experience with renewable energy projects. In Kentucky, he has supported more than 25 solar energy projects in 21 counties over the past five years. In 2020, he helped the first Kentucky solar project gain approval from the Kentucky Electric Generation and Transmission Siting Board. He has managed critical issues assessments, cumulative environmental assessments, habitat assessments, bat surveys, bald eagle nest surveys, mussel surveys, biological assessments, wetland and stream delineations, glare analyses, acoustical assessments, groundwater analyses, cemetery plans, environmental management plans, permitting requirements, public involvement, and environmental assessments. Two Kentucky solar projects he has supported have been constructed and are in operation, and construction on five more solar projects is expected to start in 2025-2026. He has experience with ecological and technical studies of transmission lines, coal-fired power plants, gas-fired power plants, and nuclear power plants, as well as a pumped storage project in Eastern Kentucky.

Broader Kentucky experience includes overseeing more than 200 sensitive species habitat assessments, threatened and endangered species surveys, stream and wetland delineations, permitting, biological assessments, and related tasks. He has a deep understanding of regulatory requirements at the local, state, and federal levels. He routinely works with the U.S. Fish and Wildlife Service (USFWS) Frankfort Field Office, U.S. Army Corps of Engineers (USACE), Federal Highway Administration, Natural Resources Conservation Service, Kentucky Army National Guard, Kentucky Transportation Cabinet, Kentucky Department of Fish and Wildlife Resources, Kentucky Division of Water, Kentucky Heritage Council, Kentucky Department of Local Government, Tennessee Valley Authority, Daniel Boone National Forest, Land Between the Lakes, and Mammoth Cave National Park on various natural resource, cultural resource, permitting, and National Environmental Policy Act (NEPA) projects.

Selected Project Experience
Turkey Creek Solar, Carolina Solar, Garrard County, KY (2020-00262). Project Manager for ecological studies of a 50-MW solar project on 540 acres near Lancaster, Kentucky. Managed site characterization studies, aquatic resources delineation, Phase I environmental site assessment (ESA), avian studies, cumulative environmental assessment, and cultural resource overviews. The studies included a desktop review of federal and state data pertaining to sensitive resources such as listed species, wetlands or other surface waters, prime farmland,

karst topography, and public and protected lands. A wetland delineation identified and demarcated aquatic features that might be jurisdictional waters of the U.S. or isolated waters of the state. Participated in public involvement activities and preparation of Siting Board application, responses to requests for information, and mitigation measure development. This project was the first merchant solar project to complete the Kentucky Siting Board process. Currently constructed and operational.

Glover Creek Solar, Metcalfe County, KY (2020-00043) Site Characterization Study, Wetland Delineations, Phase I ESA, Glare Assessment, Acoustical Analysis, Groundwater Protection Plan and Cultural Resources Overview for a Proposed Solar Project. Confidential Client. Kentucky. Managed site characterization studies, aquatic resources delineation, Phase I ESA, property valuation study, and cultural resources overview for solar project on an approximately 800-acre parcel with a 55-MW solar facility in Metcalfe County, KY. The study included a desktop review of federal and state data pertaining to sensitive resources such as listed species, wetlands or other surface waters, prime farmland, karst topography, and public and protected lands. A wetland delineation identified and demarcated aquatic features that might be jurisdictional waters of the U.S. or isolated waters of the state. Supported Siting Board application, responses to information requests, consultant report response, and public involvement. Obtained Clean Water Act Section 404 Nationwide Permit for stream crossings. Project has been constructed and is operational.

Critical Issues Analyses and Site Characterization Studies for Proposed Solar Energy Projects, Ballard, Breckinridge, Christian, Clinton, Grant, Hickman, Logan, Mason, and Mercer counties, KY. Confidential Clients. Kentucky. For multiple solar project sites, managed site characterization studies to identify potential environmental constraints associated with land cover/use, soils, wetlands and watercourses, farmland, threatened and endangered species, and other considerations. The studies included desktop assessments using publicly available databases and field reconnaissance surveys of the project areas to identify potential ecological and environmental site concerns.

Horseshoe Bend Solar (2020-00190). Project manager for ecological studies supporting development of a 60-MW solar facility in Green County, Kentucky. Oversaw stream and wetland delineations, critical issues analyses, threatened and endangered species habitat assessment, cultural historic and archaeological studies, Phase IESA, unanticipated discovery plan, cemetery plan, permitting matrices, and an environmental management plan. Identified historic cemeteries with graves of people who served in the Revolutionary War, War of 1812, and the Civil War and consulted with Kentucky Heritage Council on appropriate measures to project these sensitive sites. **Mt Olive Creek Solar (2020-00226).** Project manager for ecological studies supporting development of a 60-MW solar facility in Russell County, Kentucky. Oversaw stream and wetland delineations, critical issues analyses, threatened and endangered species habitat assessment, cultural historic and archaeological studies, Phase I ESA, unanticipated discovery plan, cemetery plan, permitting matrices, complaint resolution plan, fence maintenance plan, and an environmental management plan.

Flat Run Solar, Taylor County, KY (2020-00272). Project Manager for a proposed 55-MW solar facility in Taylor County. Managed stream and wetland delineations, critical issues analyses, threatened and endangered species habitat assessment, cultural historic and archaeological

studies, Phase I ESA, unanticipated discovery plan, permitting matrices, complaint resolution plan, fence maintenance plan, and an environmental management plan.

Meade County Solar, Meade County, KY (2020-00390). Project Manager for environmental and technical studies for a proposed 40-MW solar facility. Oversaw background environmental surveys for the project, including wetland delineations, noise assessment, traffic analyses, cultural surveys, Phase I ESA, and threatened and endangered species habitat assessments and surveys of the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*). Developed a soil management plan.

Henderson County Solar, Henderson County, KY (2020-00391). Project Manager for environmental and technical studies to support a proposed 50-MW solar facility. Prepared a cumulative environmental assessment and other studies to support the Siting Board application. Conducted stream and wetland delineation and prepared Clean Water Act Section 401 and 404 applications for stream crossing impacts.

60-Megawatt McCracken County Solar Project, McCracken County, KY (2020-00392). Project Manager for a proposed 60-MW solar facility. Prepared ecological, environmental, and technical studies to support siting board application. Conducted a bat mist-net survey; no Indiana bats, northern long-eared bats, or tricolored bats were captured.

Mantle Rock Solar, Livingston County, KY (2024-00050). Project Manager of ecological, environmental, and technical studies for a proposed 65-MW solar facility in Livingston County. Supported multiple public meetings and preparing the siting board application.

Barrelhead Solar, Wayne County KY. Project Manager for a proposed 54-MW solar facility in Wayne County. The Project Area covers approximately 402 acres. A critical issues analysis, Phase I ESA, economic analysis, property valuation study, habitat assessment, stream and wetland delineation, bat mist-net survey, eagle and raptor survey, traffic study, glare analysis, and acoustic assessment have been prepared to help revise design to avoid or minimize impacts to sensitive features on the site. Jurisdictional wetlands and streams as well as 100-year floodplains were identified and recommended setbacks for protection.

Hardin County Solar, Hardin County, KY (2023-00312). Project Manager for an 85-MW solar facility on approximately 650 acres. Local planning and zoning was a component of this project. Supported multiple environmental and technical studies. Threatened and endangered wildlife habitat has been assessed. A sandhill crane impact assessment has been completed. Cultural resources recommended for protection. Designed setbacks and avoidance will assure protection and minimal impact. Additional studies include the following: cumulative environmental assessment, traffic and rail study, economic impact study, property value study, glare analysis, visual impacts assessment and visual renderings, and an acoustical analysis.

Big Brush Solar, Green County, KY. Project Manager for a proposed 85-MW solar facility in Green County. Prepared a stream and wetland delineation, habitat assessment, Phase I ESA, and cultural resources and archaeological desktop analysis to help revise designs to avoid or minimize impacts to sensitive resources.

Permitting Support for Multiple Solar Projects. Confidential Clients. Kentucky. Managed development of federal, state, and local permitting for multiple solar projects in Kentucky.

Obtained U.S. Army Corps of Engineers Nationwide Permits, Kentucky Division of Water Section 401 Water Quality Certifications, floodplain permits, and stream crossing permits.

Acoustic Analysis and Glare Studies for Multiple Solar Projects. Confidential Clients. Kentucky. Managed acoustical analyses for multiple projects. Described existing sound levels from the project site and surrounding areas as well as potential impacts from construction, operation, and maintenance activities. Provided a report of the findings of the acoustical analyses. The report will contain a summary of the project, describe existing sound conditions, identify potential sensitive receptors (e.g., residences), and evaluate potential construction and operation sound levels. Conducted glare analyses for potential glare to airports, nearby residents, and travelers on adjacent roadways from the solar project.

Site Characterization Study for Solar Energy Development. Confidential Client. Breckinridge County, Kentucky. Assistant Project Manager for a site characterization study analyzing a property in Breckinridge County, Kentucky, for possible development as a solar energy generating facility. The study included a desktop review of federal and state data pertaining to sensitive resources such as listed species, wetlands or other surface waters, prime farmland, karst topography, and public and protected lands. Copperhead staff then performed a one-day field verification to characterize vegetative communities, possible bat habitat, and the presence of jurisdictional waters. A summary report that outlined potential environmental concerns and presented a permitting matrix delineated by issuing agency, trigger, and timeline was provided to the client.

Biological Assessments of Indiana Bats, Northern Long-eared Bats, and Bog Turtle for Proposed Solar Projects. Confidential Clients, Pennsylvania and New York. Managed the development of a biological assessment focusing on adverse effects to bat habitat. Oversaw consultation with U.S. Fish and Wildlife to develop mitigation alternatives. Supported development of a conservation easement for bat mitigation.

Critical Issues Analyses (CIAs) for Multiple Solar Facilities. Confidential Client. Tennessee. Project manager for development of multiple CIAs across Tennessee. The CIA's goal is to gain a better understanding of the environmental issues that could potentially affect project development. Some of the resource areas from which Copperhead collected information include vegetation communities and general wildlife, threatened and endangered species, migratory bird nests, soil types, and historic and cultural resources. The goal of wetland/stream mapping is to estimate how much of the Project Area may be wetlands as opposed to uplands and to identify anticipated buffer setbacks. The information gathered helps inform Copperhead and the client about regulatory adherence and what permits will be necessary.

Ecological Studies and Critical Issues Analyses for Solar Projects in Indiana, Tennessee, Michigan, Missouri, Mississippi, New York, and Virginia. Managed ecological desktop reviews and botanical, eagle, bat, mussel, and wetland surveys for solar projects in multiple states.

Critical Issues Analysis for Multiple Battery Energy Storage System Projects in Eight States. Project Manager for critical issues analyses of potential battery energy storage systems (BESS) in Alabama, Illinois, Iowa, Michigan, Michigan, Tennessee, Texas, and Virginia. Conducted desktop analyses, identified potential issues of concern, outlined regulatory and permitting requirements, and developed permit matrices.