

**COMMONWEALTH OF KENTUCKY**  
**BEFORE THE PUBLIC SERVICE COMMISSION**

IN THE MATTER OF:

THE ELECTRONIC APPLICATION OF KENTUCKY )  
UTILITIES COMPNAY FOR A CERTIFICATE OF )  
PUBLIC CONVENIENCE AND NECESSITY FOR ) Case No. 2022-00066  
THE CONSTRUCITON OF TRANSMISSION )  
FACILITIES IN HARDIN COUNTY, KENTUCKY )

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**TESTIMONY OF MARTY MARCHATERRE**  
**ON BEHALF OF**  
**WADE FAMILY FARM MANAGEMENT, LLC**

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May 12, 2022

VERIFICATION

COMMONWEALTH OF KENTUCKY )  
 )  
COUNTY OF GARRARD )

Comes now Marty Marchaterre of Copperhead Environmental Consulting, after first being duly sworn, and does hereby swear, affirm and acknowledge that the written testimony offered by him is true and correct to the best of his knowledge and belief as of this 12<sup>th</sup> day of May, 2022.

Marty Marchaterre  
Marty Marchaterre

This Verification was subscribed and sworn to by Marty Marchaterre before me, the NOTARY PUBLIC, on this 12<sup>th</sup> day of May, 2022.



Tammera Nolen  
NOTARY PUBLIC  
Commission #: KYNP 35002  
Commission Expires: 10-06-25

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR FULL NAME.**

3 A. Martin John Marchaterre.

4 **Q. BY WHOM ARE YOU EMPLOYED?**

5 A. Copperhead Environmental Consulting, Inc.

6 **Q. WHAT IS YOUR TITLE AND BUSINESS ADDRESS?**

7 A. Senior Environmental Planner, 133 Walton Avenue, Lexington, Kentucky 40508

8 **Q. PLEASE DESCRIBE YOUR EDUCATION?**

9 A. BA in History and Political Science, Williams College, 1985; Juris Doctor, College of  
10 William and Mary, 1988

11 **Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE?**

12 A. I have over thirty (30) years of energy, environmental, and permitting experience and have  
13 overseen development of National Environmental Policy Act environmental  
14 documentation, reviews, and supporting studies. I have been involved in more than eighty  
15 (80) Environmental Impact Statements, Environmental Assessments, and Categorical  
16 Exclusions. I have supported planning and permitting projects related to electric power  
17 generation including fossil fuel power (coal and natural gas), nuclear power, solar power,  
18 and wind generation. My experience includes linear projects such as transmission lines,  
19 pipelines, roadways, and railroads. I have managed threatened and endangered species  
20 projects for the Electric Power Research Institute and coordinated with the Edison Electric  
21 Institute while working on projects for the United States Environmental Protection Agency.

22 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY TODAY?**

1 A. I am offering expert testimony on behalf of Wade Family Farm Management, LLC (“Wade  
2 Family”). I will describe my review of the request for a certificate of public convenience  
3 and necessity (“CPCN”) filed by Kentucky Utilities Company (“KU”) in this docket and  
4 explain why, in my professional opinion, the Commission should not grant a CPCN for the  
5 proposed Western Transmission Line’s Route A (“Route A”).

6 **Q. ARE YOU SPONSORING ANY EXHIBITS TO YOUR TESTIMONY?**

7 A. Yes. My curriculum vitae is attached to my testimony as Exhibit MM-1.

8 **II. KENTUCKY UTILITIES COMPANY’S APPLICATION FOR A CERTIFICATE OF**  
9 **PUBLIC CONVENIENCE AND NECESSITY**

10 **Q. IN YOUR OPINION, IS THE STUDY AREA THAT KU USED APPROPRIATE?**

11 A. No. KU and Team Spatial unilaterally determined the Study Area boundaries and did not  
12 identify alternate study areas. The Siting Study and responses to information requests  
13 provided limited explanation of why this Study Area was selected and not alternatives. On  
14 page 5 of the Siting Study, Team Spatial describes the Study Area but provides no  
15 explanation of how the Study Area was selected or how the boundaries were established.  
16 In response to the Wade Family’s Initial Request for Information, Question No. 1, it is  
17 stated that KU’s Transmission Department under Ms. McFarland’s direction and  
18 supervision determined the boundaries of the Study Area. The Study Area includes a  
19 section of the existing Brown North – Hardin County 345 kV line in closest proximity to  
20 the Glendale Megasite. KU stated that no alternative Study Areas were evaluated as that  
21 would have added significant mileage to the 345 kV routes and at increased cost. No  
22 information was provided on other 345 kV lines that potentially could have been connected  
23 to the Glendale Megasite or cost estimates.

1 **Q. DOES KU’S SITING STUDY DEPART FROM THE KENTUCKY SITING**  
2 **MODEL?**

3 A. Yes, it does and this is significant. The Siting Study on page 7 describes the 2006 Electric  
4 Power Research (“EPRI”) – Georgia Transmission Corporation (“GTC”) and the 2007  
5 Kentucky Siting Model. However, the Siting Study on page 8 includes different weighting  
6 for the features than the Kentucky Transmission Line Siting Methodology, Appendix G.  
7 For example, within the Engineering Environment features, no explanation is provided on  
8 why feature weights changed or how the new feature weights were determined. Some  
9 weighting changes appear to be in response to features not present in the Study Area (e.g.,  
10 airports and military features that are not present). The explanation in the Siting Study on  
11 page 9. This is where KU identifies that at “the layer level, all of the layers within a  
12 prospective area are given a weight and all of the weights must equal 100%. The features  
13 and layers that are not present in this project are grayed out in the table above (on page 8).”  
14 In addition, a sinkhole feature was added which is not part of the Kentucky Transmission  
15 Line Siting Methodology.

16 The Siting Study also does not provide an explanation for changing the weights of  
17 individual features. In the Response to Wade Family Farm Management, LLC’s  
18 Supplemental Request for Information, Question No. 10, KU stated that “no documents  
19 were specifically prepared by KU and Team Spatial, however there are documents in  
20 support of the process. The general value calibration process is discussed in “EPRI-GTC  
21 Overhead Electric Transmission Line Siting Methodology” (February 2006) Page 43 of  
22 198 for Feature Calibration as footnoted on Team Spatial Siting Study, Page 7 of 87. ”

1 While the reference provided describes the general process, it does not explain what the  
2 Siting Study did in changing weights.

3 KU went on to state “[w]hen a layer is not present in the study area, the weight that  
4 is assigned in that area is redistributed proportionally to the other layers in that perspective.  
5 These weighting distributions are based off of the EPRI-GTC Siting Methodology.” This  
6 change in methodology is not specifically included in the EPRI-GTC Siting Methodology.  
7 These changes have an effect on the selection of a preferred Study Area.

8 The Siting Study appears to place a lower level of importance to “Avoidance Areas”  
9 as defined in both the Kentucky Transmission Line Siting Methodology and EPRI-GTC  
10 Siting. In the Siting Study, “Avoidance Areas” are described as “Areas of Least  
11 Preference” and no longer are areas to keep away from completely.

12 **Q. WAS THE DOCUMENTATION PROVIDED BY KU IN RESPONSES TO DATA**  
13 **REQUESTS SUFFICIENT?**

14 A. No, it was not. In Response to Wade Family Supplemental Request for Information,  
15 Question No. 9, KU states “The Team Spatial Siting Study is the documentation. Team  
16 Spatial along with the KU project team determined the weighting criteria with the study  
17 area and project scope in mind prior to the proposed corridor and route selection.  
18 Paragraph 6, page 60 of 87 of the Team Spatial Siting Study shows the breakdown of the  
19 weighting criteria.” The KU and Team Spatial determined the high-level siting criteria  
20 and assigned weights to represent the relative importance. No explanation is provided on  
21 how these siting criteria were identified or assigned weights. As discussed above, it  
22 appears to differ from the Kentucky Transmission Line Siting Methodology.

1 **Q. WHAT SITING CRITERIA DOES IT APPEAR KU USED AND HOW WERE**  
2 **THEY WEIGHTED?**

3 A. Community Issues was weighed the most at 30% followed by Construction/Maintenance  
4 Accessibility at 25%, Cost at 25%, Natural Environment Considerations at 10%, Schedule  
5 Delay Risk at 5%, and Reliability at 5%. Based on Siting Study discussions, the  
6 Community Issues focused on two relocations that would be required for Alternative D due  
7 to proximity to transmission line and might cause delays. No other issue appeared to affect  
8 this criterion which was heavily weighted at 30%. Natural Environment Considerations  
9 were only given a 10% weight. Alternative D scored the best in the cost category but  
10 instead of scoring similar to other categories, the Siting Study scored just this category on  
11 a “relative cost” compared to the lowest cost route. It does not appear that this methodology  
12 was used anywhere else but in the cost criterion and this makes a big difference when the  
13 weight is 25% for costs. During the Expert Judgment Model phase and using the weighting  
14 established for this project, Alternative D became the preferred route. Earlier in the process  
15 when evaluating the Alternative Corridors using external stakeholder data, Alternative D  
16 had the lowest scores in all categories and appeared to be the best alternative to be selected.  
17 The factors considered in the Expert Judgment Model appear to be focused/heavily  
18 weighted on those factors which might affect timing and completion of the transmission  
19 line and not effects on the natural environment.

20 **Q. PLEASE DESCRIBE THE COMPLETENESS AND ACCURACY OF KU’S**  
21 **ANALYSIS.**

22 A. The Siting Study provides a Source Data Table (Application, Exhibit 2, Appendix A, pages  
23 82-86) which provides sources and source notes but no information on dates for

1 information. Generally, it provides the source of information at the agency level but no  
2 details on the metadata. Metadata summarizes basic information about data, making  
3 finding and working with particular instances of data easier. Data quality is connected to  
4 the provenance of that data. Without metadata to provide provenance, we have a dataset  
5 without context. Data without context, like an artifact, chemical, baking soda, or any other  
6 random object, has limited value. For several categories, the Source Data Table is  
7 identified as “Arcadis” which is the subconsultant gathering the data and not the data  
8 source. This lack of metadata makes it difficult to replicate and review the Siting Study  
9 results in an objective manner.

10 **Q. CAN YOU ELABORATE ON THAT RESPONSE?**

11 A. Yes. Figure 17 on page 23 is based on modeling habitat for threatened and endangered  
12 species. For the snuffbox mussel, the team considered rivers and streams as potentially  
13 suitable habitat. This may not be the most accurate method to model habitat as it modeled  
14 “all” rivers and streams. Snuffbox mussels due to their nature as mollusks are only present  
15 in perennial streams where water is present year-round during a typical year. Snuffbox  
16 mussels are not present in streams that flow only during certain times of the year  
17 (“intermittent streams”) or flow water only during or for a short duration after, a  
18 precipitation event in a typical year (“ephemeral streams”). Therefore, this figure over-  
19 represents potential habitat for snuffbox mussels.

20 In addition, the Source Data Table, page 83 identified Arcadis as the source of  
21 information for wetlands. In Response to Wade Family Farm Management, LLC’s Initial  
22 Request for Information, Question No. 16, KU stated that “Arcadis, an environmental  
23 consulting firm supporting Team Spatial in the siting study, used publicly available



1 information to identify the location of wetlands. The National Wetlands Inventory Data  
2 base was a source. Arcadis also developed a desktop review of potential wetlands sites  
3 using information from contour elevations, aerial files, flood plans, and soil classifications  
4 to assist with identifying wetlands.”

5 **Q. PLEASE DESCRIBE THE PROPOSED ROUTE IN CONNECTION WITH THE**  
6 **PIVOT IRRIGATION SYSTEM LOCATED ON THE WADE FAMILY FARM.**

7 A. In KU’s Application there is currently a pivot irrigation system identified on the Wade  
8 Family Farm. The pivot irrigation system overlaps the 500-foot corridor from the  
9 transmission centerline. The edge of the 200-ft wide transmission line easement is  
10 approximately 75 feet away from the pivot irrigation system. It is our understanding that  
11 in preliminary plans, the proposed transmission line crossed closer to the pivot irrigation  
12 system. KU appears to have angled the proposed transmission line to the southeast  
13 precisely to avoid interfering with the irrigation system. In so doing, however, they have  
14 created other issues related to the planned clear-cutting of a forest along the creek.

15 **Q. HOW DID THE SITING STUDY ADDRESS “OTHER CONSERVATION**  
16 **AREAS”?**

17 A. The Siting Study “Other Conservation Areas” focused on federal or state public lands. The  
18 Siting Study does not appear to have identified or factored into its analysis other types of  
19 conservation areas. The Wade Family Farm participates in the United States Department  
20 of Agriculture (USDA) Farm Service Agency (FSA) Conservation Reserve Program  
21 (CRP). The CRP is a voluntary program that contracts with agricultural producers so that  
22 environmentally sensitive agricultural land is not farmed or ranched, but instead devoted  
23 to conservation benefits. CRP participants establish long-term, resource-conserving plant

1 species, such as approved grasses or trees (known as “covers”) to control soil erosion,  
2 improve water quality and develop wildlife habitat. Similarly, Kentucky has a farmland  
3 preservation program for the Purchase of Agricultural Conservation Easements (PACE)  
4 (KRS §§ 262.900 – KRS 262.920) that allows the state to purchase agricultural easements  
5 to ensure lands currently in agricultural use will continue to remain available for agriculture  
6 and not be converted to other uses. In Hardin County, approximately 889 acres are  
7 currently in the program. The Siting Study does not appear to have considered these types  
8 of areas in its analysis.

9 **Q, DOES THE SITING STUDY USE CORRECT AND COMPLETE DATA FOR**  
10 **HISTORIC RESOURCES AND ARCHAEOLOGICAL SITES?**

11 A. No. The Siting Study used data for “known” eligible and listed historic resources and  
12 archaeological sites. This data included in the Siting Studies is misleading as information is only  
13 available for areas that have been previously surveyed and therefore, covers a small percentage of  
14 the Study Area. Therefore, the results may not accurately identify the extent of cultural resources  
15 in each alternative. A good example of this is the earthworks which are located just inside the forest  
16 on the Wade Family Farm’s land. Because they have not been officially surveyed, they would not  
17 appear on any government list of known cultural, historical or archaeological sites. This does not  
18 mean that the site isn’t significant – only that it has not yet been cataloged.

19 The Kentucky Heritage Council in its Instructions for Competing the Kentucky  
20 Heritage Council Section 106 Review and Compliance Cover Sheet specifically states  
21 “not every archaeological site or building over 50 years of age in Kentucky has been  
22 previously surveyed. Preliminary site checks only provide information on currently  
23 known resources.” The results of a preliminary site check do not preclude the need for  
24 additional research or survey to ensure all historic properties have been identified.

1 **Q. WHAT ELSE DID THE SITING STUDY MISS?**

2 A. The Alternative Corridors Table, Built Environment, Areas of Least Preference, on page  
3 8 shaded out “Cemetery Parcels” as not being present in the Study Area. The Source Data  
4 Table, page 86 states that “Cemetery Parcels” were identified through “Internet  
5 research/Hardin County PVA data” and confirmed based on aerial photography  
6 inspection. Figure 4 Areas of Least Preference does not identify any cemeteries within  
7 the Study Area. We are aware of at least four (4) cemeteries occurring within the Study  
8 Area: Glendale Christian Church Cemetery (approximately eight hundred thirty two (832)  
9 graves/memorials); New Horizon Baptist Fellowship Church Cemetery (approximately  
10 four hundred fourteen (414) graves/memorials); Little Zion Baptist Church Cemetery  
11 (approximately ninety nine (99) graves/memorials); and Monin Family Farm Cemetery  
12 (approximately three (3) graves/memorials). Other small family cemeteries may occur  
13 that would not be identified in Hardin County PVA data. This is further evidence that the  
14 information relied upon by KU and its consultants is not complete or accurate. This  
15 diminishes the confidence that a reasonable person would have in the credibility to be  
16 given to its route selection process.

17 **Q. PLEASE DESCRIBE HOW ROAD INFORMATION WAS OBTAINED BY KU.**

18 A. In Response to Hagan Property Owners’ Initial Request for Information, Dated May 2,  
19 2022, KU states that Team Spatial contacted the Kentucky Transportation Cabinet  
20 (“KYTC”) for road information. Based on the Siting Study, Appendix A, Page 82, and KU  
21 responses, it is not possible to determine the age of the roadway data. Currently, KYTC is  
22 undergoing its Strategic Highway Investment Formula for Tomorrow 2022 (“SHIFT”),  
23 which is its data-driven, objective approach to compare capital improvement projects and

1 prioritize transportation funding. Kentucky's 2022-2028 Recommended Highway Plan  
2 was proposed in January 2022 and the new Six-Year Plan 2022-2028 should be coming  
3 out in the near future. It is not clear if this information was included in the Siting Study.

4 **Q. PLEASE DESCRIBE HOW KU EVALUATED ANY UNDERGROUND STORAGE**  
5 **TANKS.**

6 A. In the May 6, 2022 Response to the Wade Family Farm Management, LLC's Supplemental  
7 Data Requests, Question No. 11 (c) regarding underground storage tank information and  
8 surveys, KU responded that "[f]or KU transmission lines, the presence of any registered  
9 underground storage tanks is initially identified by data collected by Team Spatial and  
10 aerial photography. Currently there are no surveys for underground storage tanks planned  
11 but if future conditions warrant this survey one will be performed." However, this  
12 statement contradicts the April 14, 2022, Response to Wade Family Farm Management,  
13 LLC's Initial Request for Information, Question No. 22, where KU responded "Data  
14 associated with underground storage tanks was not utilized within the siting study. This  
15 information will be gathered through future on-site field studies." The inconsistency within  
16 the responses is indicative of the fact that KU appears to be rushing this project along  
17 without giving adequate time to conduct the necessary studies and field work. Its preferred  
18 Route A for the Western 345 kV Transmission Line relies upon many assumptions which  
19 may or may not be validated in the future. Rather than wait to file this case when these  
20 unknowns became known, KU's approach appears to be to gain an approval and then make  
21 adjustments as necessary on the back-end. This is an inefficient approach to siting and  
22 permitting a transmission asset that will have a tremendous impact upon the route it uses.  
23 I am very concerned that KU is rushing this project along in order to meet a deadline

1 imposed upon it by its customers at the direct expense of the community it will impact the  
2 most. The likely impacts upon the Wade Family Farm are a good illustration of this  
3 concern.

4 **Q. ARE THERE ANY OTHER ISSUES WITH KU'S SITING STUDY?**

5 A. Yes. Information and references provided by Team Spatial in the Siting Study did not  
6 allow for the review of some features. For example, in the Application, Exhibit 2, Source  
7 Data, page 85 states that Proposed Development was based on field observations. We are  
8 not sure what methodology was used in the field observations to identify Proposed  
9 Development and support development of Figure 8. It is not clear if Team Spatial and/or  
10 Arcadis contacted and obtained information from the Hardin County Planning and  
11 Development Commission, the Hardin County Comprehensive Plan, or Zoning to  
12 determine Proposed Development. The 2006 EPRI-GTC Overhead Electric Transmission  
13 Line Siting Methodology provides examples of sources that can provide this data.

14 **Q. IS IT YOUR OPINION THAT THE EASTERN TRANSMISSION LINE IS**  
15 **SUPERIOR TO THE WESTERN TRANSMISSION LINE.**

16 A. Yes. I believe the Eastern Transmission Line is superior to the Western Transmission Line  
17 because it is shorter in length, cheaper to construct, less parcels are being crossed, there are  
18 fewer residences within three hundred (300) feet of centerline, fewer agriculture buildings  
19 within three hundred (300) feet of centerline, less tree clearing, less stream crossings, less  
20 right-of-way withing stream/river buffers, less sinkholes, and no crossing of a railroad.

21 **Q. WHY IS ROUTE D THE BETTER ROUTE THAN ROUTE A FOR THE**  
22 **WESTERN TRANSMISSION LINE?**

1 A. In the Siting Study, page 60, first paragraph, Route A is described as scoring the lowest  
2 (most suitable) from a Built Perspective but according to Figure 51, Page 59, this statement  
3 does not appear accurate as Route D scored the lowest as most suitable from a Built  
4 Perspective. According to Figure 51, Route D scored lower in all the graph categories when  
5 compared to Route A. Route D was the shortest in length and the least cost. It appears that  
6 Route A become the preferred route only through the Expert Judgment Process where the  
7 criteria for the siting model were altered from what is normal in Kentucky. The model  
8 loses its value and objectivity when its criteria are changed.

9 **Q. PLEASE DESCRIBE THE WADE FAMILY FARM AND ITS INCLUSION ON**  
10 **THE NATIONAL REGISTER OF HISTORIC PLACES.**

11 A. Our research indicated that Maplehurst (NRHP #88001735; HD-7), was included on the  
12 National Register of Historic Places (NRHP) in 1988. The two-story brick home was built  
13 in 1876 in the Italianate style. The home was built by George Washington Smith as a gift  
14 for his son Elijah Ashcraft Smith by builder Joseph Lott. George Washington Smith was  
15 the owner of Smith's Mill on Valley Creek along the property's western boundary. Mr.  
16 Smith also financed two other historic homes on his farm for his other children and they  
17 are also listed on the NRHP. To the south of the Wade Family Farm is Maple Hill (HD-9)  
18 owned and operated by the Crain family, and at the southwest corner of the farm is Chestnut  
19 Grove (HD-5).

20 It does not appear that a precise National Register boundary was established for  
21 Maplehurst. Since the property has not been evaluated since 1988, a cultural resource  
22 reassessment is warranted and it may determine that, due to the mill site and connected  
23 historic family homes, the larger farm area is appropriate to designate as a historic district.

1 Again, expediency in delivering a transmission line which may or may not be needed is  
2 not a reason to encroach on a NRHP parcel. Before a CPCN is granted that would impact  
3 this property, the full significance of the property should be understood and measured –  
4 particularly when KU has another route that is available, shorter and less costly.

5 **Q. ARE THERE ANY OTHER ITEMS OF POTENTIAL HISTORICAL**  
6 **SIGNIFICANCE ON THE WADE FAMILY FARM?**

7 A. Family stories identify potential Civil War earthworks in the woods northeast of  
8 Maplehurst near a proposed transmission tower. Mr. Wade identifies these earthworks in  
9 his testimony. The site is near a former road/trail and a railroad crossing (Louisville &  
10 Nashville Line). Confederate John Hunt Morgan raided up the railroad line on the way to  
11 Elizabethtown in December 1862. Periodically, during the war, Confederate raiders  
12 attacked railroad bridge crossings in Kentucky. In response to these raids, Union soldiers  
13 were stationed near the Louisville & Nashville Line to protect railroad bridges. Again,  
14 before this area of the Wade Family Farm is clear cut and bulldozed, it is imperative that  
15 the site be examined for historical, cultural and archeological significance. The need to  
16 construct a redundant high-voltage transmission line is not so great that this type of  
17 resource should be simply lost due to lack of inquiry.

18 **Q. ARE THERE STANDARDS FOR ITEMS THAT MAY HAVE A VISUAL**  
19 **IMPACT ON A HISTORICAL RESOURCE?**

20 A. Yes. The Kentucky Heritage Council, which is the State Historic Preservation Office  
21 (SHPO), has standards for conducting cultural resource surveys. The proposed  
22 transmission line has a tower, northeast of Maplehurst which due to its height and location,

1 may have a visual impact on the historic resource. The SHPO has determined that for  
2 towers over 100-feet tall, the area of potential effect (APE) is 0.5 miles.

3 The Siting Methodology did not identify that the Wade Family Farm is a Kentucky  
4 Heritage Farm listed on Kentucky Register of Historic Farms (KRS §171.388). The listing  
5 is to honor, recognize, and promote family farms. Alternative A has the possibility to  
6 negatively affect a Kentucky Heritage Farm and KU does not appear to have taken that fact  
7 into account in its study.

8 **Q. ARE THERE ANY OTHER ISSUES WITH THE PROPOSED ROUTE A?**

9 A. Yes. KU appears to have missed that there is a sinkhole very close to where it is proposing  
10 to locate a transmission tower. Karst features are common in Hardin County and the Wade  
11 Family Farm is no exception. Based on the application and the responses to information  
12 requests, the Siting Study may have missed sinkholes. KU has conducted some initial  
13 geotechnical investigations but has not identified if it has discovered additional sinkholes  
14 in the transmission line corridor or where it has sited transmission towers.

### 15 III. CONCLUSION

16 **Q. WOULD YOU LIKE TO SUMMARIZE YOUR TESTIMONY?**

17 A. The Eastern Preferred Alternative is a better choice than the Western Preferred Alternative.  
18 Within the Western Alternatives, Route D is a better choice than Route A. KU does not  
19 appear to have satisfied its burden of proof for demonstrating that a CPCN should be  
20 granted for Route A of the proposed Western 345 kV Transmission Line.

21 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

22 A. Yes.



### Regulatory Expertise

- NEPA
- CWA
- RCRA
- NHPA
- ESA
- CAA

### Industry/Agency Clientele

- Solar
- Pipelines
- Utilities/Traditional Energy Sources
- National Guard
- US Fish and Wildlife Service
- Forest Service
- Nuclear Regulatory Commission
- FHWA, FRA, FTA & State DOTs
- Tennessee Valley Authority
- Academic Institutions & NGOs

### Qualifications/Associations

- Virginia Bar Association, Environmental Law Section
- District of Columbia Bar Association, Environmental, Energy and Natural Resources Section
- Lexington Environmental Commission
- Lexington Infrastructure Hearing Board
- Lexington Community Land Trust
- Lexington Stormwater Stakeholder Advisory Group
- Town Branch Trail, Inc.
- Paint Lick Watershed Alliance
- Garrard County Sanitation District
- Kentucky Solar Energy Industry Association

### Trainings

- NEPA and the Transportation Decision-Making Process
- Public Involvement in Transportation Decision-Making
- Thinking Beyond the Pavement - Context Sensitive Design
- KYTC Citizen Advisory Committee Training
- Environmental Justice
- Native American Consultation
- Section 106 Consultation Process
- Federal Energy Regulatory Commission Environmental Review and Compliance for Natural Gas Facilities



### Qualifications and Background

Mr. Marchaterre is an attorney and has over 30 years of environmental, regulatory, and permitting experience. He has been involved in more than 80 Environmental Impact Statements, Environmental Assessments, and Categorical Exclusions. Mr. Marchaterre has managed air quality studies, noise analyses, socioeconomic baseline studies, land use analyses, cultural resource analyses, community impact assessments, Phase I hazardous materials site assessments, biological assessments, wetlands delineations, glare analyses, environmental justice, and public involvement activities. He has prepared public involvement plans, outreach materials, and conducted citizen advisory committee meetings, stakeholder meetings, noise barrier meetings, Section 106 consultation meetings, and participated in numerous public meetings and hearings. For the U.S. Environmental Protection Agency, he provided support to the National Environmental Justice Advisory Committee for two years.

### 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

## Selected Project Experience

### Solar

**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 was provided to the client which outlined potential environmental concerns and presented a permitting matrix delineated by issuing agency, trigger, and timeline.

**Site Characterization Study, Wetland Delineations, Phase I ESA, and Cultural Resources Overview for a Proposed Solar Project. Confidential Client. Kentucky.** Managed site characterization studies, aquatic resources delineation, Phase I ESA, and cultural resources overview for solar project on an approximately 800-acre parcel in Garrard 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 may be jurisdictional waters of the U.S. or isolated waters of the state. Participated in public involvement activities.

**Site Characterization Study, Wetland Delineations, Phase I ESA, and Cultural Resources Overview for a Proposed Solar Project. Confidential Client. Kentucky.** Managed site characterization studies, aquatic resources delineation, Phase I ESA, and cultural resources overview for solar project on an approximately 800-acre parcel 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 may be jurisdictional waters of the U.S. or isolated waters of the state.

**Three Solar Projects - Site Characterization Study, Wetland Delineations, Phase I ESA, and Cultural Resources Overview. Confidential Client. Kentucky.** Managed desktop review and field studies to support development of site characterization studies, wetland delineations, Phase I ESAs, and cultural resource overviews. A site reconnaissance identified potential habitat for federally listed and state-listed at-risk species.

**Acoustic Analysis 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 analysis. 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.

**Critical Issues Analysis (CIA) for a Solar Facility. Confidential Client. Tennessee.** Assistant project manager for development of a CIA. 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 Copperhead collected information on include vegetation communities and general wildlife, threatened and endangered species, migratory bird nests, soil types, and historic and cultural resources. The wetland/stream mapping's goal 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 to inform Copperhead and the client about what regulations will need to be adhered to and what permits will need to be acquired.

**Site Characterization Studies for Proposed Solar Energy Projects. 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 a desktop assessments using publicly available databases and field reconnaissance surveys of the project areas.

**Biological Assessment for Indiana Bats, Northern Long-eared Bats, and Bog Turtle at a Proposed Solar Project. Confidential Client, New York.** Managing the development of a biological assessment with adverse effects to bat habitat. Ongoing consultation with United States Fish and Wildlife to develop mitigation alternatives.

**Critical Issues Analysis (CIA) for a Solar Facility. Confidential Client. Mississippi.** Assistant project manager for development of a CIA. 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 Copperhead collected information on include vegetation communities and general wildlife, threatened and endangered species, migratory bird nests, soil types, and historic and cultural resources. The wetland/stream mapping's goal 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 to inform Copperhead and the client about what regulations will need to be adhered to and what permits will need to be acquired.

### **Transportation**

**Threatened and Endangered Species Habitat Assessments and Surveys, Bridging Kentucky Program, Kentucky Transportation Cabinet.** Project Manager. Throughout Kentucky, Copperhead as subconsultant is tasked with providing environmental services including coordination for Threatened and Endangered Species (TES), assessment of potential habitat, preparation of biological assessments, programmatic agreement comments, and NEPA permit assistance (including Section 401/404 and U.S. Coast Guard Section 10) for the program to rehabilitate or replace over 1,000 bridges in the next six years. Screened over 400 bridges for environmental concerns and potential TES habitat. Conducting habitat assessments, mussel and fish surveys, and preparing permits, biological assessments, and no effect documentation. Addressed concerns of stakeholders and nearby residents.

**EA/FONSI, US 68, Bourbon-Nicholas Counties, Kentucky. Item No. 7-310.00.** Prepared an EA and individual Section 4(f) evaluation as well as baseline studies for this 13.3-mile project. Section 106 issues were a critical component due to over 50 historic sites and 2 historic districts. Seventeen alternates were considered to avoid or minimize impacts to historic sites and prime farmland. Section 401/404 and floodplain construction permits and stream mitigation required due to 10,000 feet of channel change. Developed a public involvement plan and participated in public meetings, a public hearing, and Section 106 consulting party meetings.

**EA/FONSI, East Nicholasville Bypass, Jessamine County, Kentucky.** Prepared an EA and managed the development of the FONSI for this 7-mile project. Managed the historic and archaeological studies of several farm sites. Due to potential impacts to a historic site, avoidance alternates were developed. Prepared socioeconomic, traffic noise and hazardous materials/underground storage tank studies and oversaw the other environmental base studies and addenda. Helped address concerns about economic impacts of developing the bypass and visual/noise concerns for residents. Supported citizen advisory committee meetings, public information meetings and the public hearing. Participated in the biological assessment for running buffalo clover, Indiana bat and gray bat.

**EA/FONSI, US 60 Tennessee River Crossing, McCracken-Livingston Counties, Kentucky.** Managed preparation of the EA and Section 4(f) evaluation for the replacement of the historic George Rogers Clark Memorial Bridge and approaches. Oversaw minimization and mitigation efforts for wetlands, floodplains, historic bridge, and relocations. Participated in public meetings on environmental issues, such as wetlands and cultural resources.

**EA/FONSI, US 119 (Partridge to Whitesburg), KYTC, Letcher County, Kentucky.** Project Manager. Managed preparation of two EAs and baseline studies for two connecting projects (14.8 miles in length). Managed public involvement activities (Pine Mountain Crossing Task Force, public meetings, and public hearings), and oversaw minimization and mitigation efforts for wetland, stream, floodplain, historic and relocation impacts. Due to numerous crossings of the Poor Fork of the Cumberland River and potential impacts to the Bad Branch Nature Preserve, Pine Mountain Wildlife Management Area, and a historic site, this project evaluated Section 4(f) impacts, numerous alternates, the potential impacts of 20 bridges, a 4.2-mile tunnel, and several waste areas. Managed the biological assessment for the Indiana bat, gray bat, and blackside dace. Participated in the Section 401 and 404 permitting process for wetland and stream impacts.

**Environmental Assessment for Memphis Regional Intermodal Facility, Private Client, Rossville, TN.** Technical Reviewer and Author for a complex EA for a 650-acre intermodal facility. Conducted technical review of EA and baseline studies including Stream Assessment Report, Ecology Study Report, Noise Assessment Report, Cultural Resources, and Phase I archaeological Survey, and Viewshed Analysis. The intermodal facility will improve freight transportation capacity in the region and used Tiger Grant funds. FHWA is the lead federal agency with TDOT as lead state agency. Twenty-one out of 29 federal, state, and local agencies requested to participate in the NEPA process. To adequately involve the public, both a public information meeting and a public hearing were conducted in the local area. Completed the NEPA process in approximately one year, fastest for TDOT.

**Categorical Exclusion 2, Town Branch Trail Phase 6, Fayette County, Kentucky. Item No. 7-7310.00.** Project Manager for Town Branch Trail Phase 6 Categorical Exclusion. Conducted environmental studies and prepared environmental documents for the multi-use trail between McConnell Springs Drive on Old Frankfort Pike to Oliver Lewis Way. Participated in project and public meetings on the proposed trail and developed Section 4(f) evaluation of potential impacts on historic James McConnell House as well as dry laid retaining walls along Town Branch.

**Mitigation Support. Newtown Pike Extension, Fayette County, Kentucky. Item No. 7-593.00.** For the Community Land Trust, providing environmental justice advocacy for a low-income, minority neighborhood concerning EIS commitments and mitigation due to the Newtown Pike Extension. Reviewed environmental justice commitments, oversaw streetscape design work, examined traffic calming measures and plans for adjacent park, bike lanes, and bus transit facilities. Public and stakeholder meetings were key components of project.

**Categorical Exclusion and Programmatic Section 4(f), US 25 (Williamstown), Grant County, Kentucky. Item No. 6-1049.00.** Prepared the CE and Programmatic Section 4(f) evaluation concerning a bridge replacement / road improvement project. Historic sites, traffic noise, a senior citizen home, mobile home park relocation, business relocations, a railroad line, and park access were concerns. Stakeholder and public meetings were conducted. Worked with KY Department of Local Government to avoid Section 6(f) impacts due to a new park access.

**Environmental Documentation for All Aboard Florida High Speed Rail, Florida.** For All Aboard Florida, developed technical baseline documents and provided technical review of methodology, existing environment, and environmental consequences sections for an approximately 128-mile section of a high-speed rail project from West Palm Beach to Miami, Florida. Involved in cultural resources, transportation, public utilities, and aesthetic components. Reviewed cultural resource report prepared by a subconsultant. Potential impacts to historic districts and resources were concern raised by the public. For All Aboard Florida, helped to review the DEIS prepared by a Third Party for Federal Railroad Administration.

**Heartland Parkway Planning Study, Adair, Green, Taylor, Marion, Nelson, and Washington Counties, Kentucky.** Managed the environmental evaluation of the 68-mile corridor scoping study. Helped identify project needs and potential environmental concerns (historic battlefield, parks, conservation

areas, endangered species, and cave/karst terrain). Identified the regional needs for improving/supporting economic development, tourism, higher education, and the agricultural sector. Managed the archaeological overview and Phase I archaeological survey for the 23-mile design project in Taylor and Adair Counties. Participated in extensive public involvement activities including eight public meetings along with separate meetings for local governments.

**Environmental Assessment, KY 313, Hardin and Meade Counties, Kentucky.** Prepared an EA and FONSI for this 14-mile project. Managed the preparation of environmental baseline studies. Prepared a purpose and need statement to help justify the project. Helped evaluate potential cave and karst impacts. Managed the biological field studies that captured a federally endangered gray bat in the project area and helped evaluate mitigation options. Supported public meetings and the public hearing and coordinated with federal and state resource agencies.

**Environmental Assessment, KY 40 (Inez to Warfield), Martin County, Kentucky.** Responsible for the EA for this 8.5-mile project. Relocations, strip mines, cemeteries, a historic site, and stream channel changes were environmental concerns. A separate waste disposal area and industrial development site were later evaluated. Managed review of environmental impacts of the roadway segment crossing into West Virginia. Supported KYTC in coordinating with the West Virginia Department of Highways and other West Virginia resource agencies. Supported the historic consultant in evaluating methods to minimize potential indirect visual impacts of the proposed roadway and bridge on a historic site. Supported public and Section 106 consulting party meetings. Participated in stream mitigation and permitting activities.

**Categorical Exclusion and Programmatic Section 4(f), US 25 (Williamstown), Grant County, Kentucky.** Prepared the CE and Programmatic Section 4(f) and managed the environmental studies concerning a bridge replacement and road improvement project. Historic sites, traffic noise, a senior citizen home, a mobile home park, business relocations, a railroad line, and a park were issues. Worked with the KY Department of Local Government to avoid a Section 6(f) impact during the development of new access to a park.

**Environmental Assessment/US 68 (Columbia to Greensburg), Green and Adair Counties, Kentucky.** Prepared an EA for this 16-mile project. Managed the preparation of environmental overviews and baseline environmental studies, including wetlands, noise, air quality, Phase I ESA, socioeconomic, and threatened and endangered species. Oversaw the development of a cultural historic overview and survey and an archaeological overview, an archaeological high probability study, and a Phase I archaeological survey. Supported the citizen advisory committee, public meetings, and a Section 106 consulting party meeting. Aided the roadway designers in developing alternates to avoid impacts to a historic farm and in evaluating a land bridge over a historic railroad tunnel rather than imploding the tunnel. Worked with the cultural historian to analyze the potential indirect visual and vibration impacts of the land bridge on the tunnel.

**Environmental Assessment for the Leslie, Knott, Letcher Perry County Community Action Council for Intermodal Transit Facility and Parking Structure, Hindman, Kentucky.** Managed the EA and environmental studies to secure federal funding for the rehabilitation of a 46-year old former jail building to be an intermodal transit facility and creation of a street level 150-space parking structure. Potential floodplain impacts, environmental justice concerns, archaeological sites, and historic viewshed effects were evaluated. Worked closely with Community Action Council and design firm to avoid and minimize impacts. Participated in stakeholder meetings.

**Documented CEs and EAs for Transit Projects, Christian, Clay, Franklin, Jefferson, and Knott Counties, Kentucky.** Managed successful preparation of Documented CEs and EAs for transit facilities, maintenance facilities, bus wash, and parking structures with the KYTC Office of Transportation Delivery. For a proposed City of Frankfort Transit bus wash/maintenance facility, a documented CE was completed within one month to meet a funding deadline. Mr. Marchaterre participated in all aspects of

this project including desktop environmental analysis, site reconnaissance, agency coordination, stakeholder meetings, and report preparation.

**Environmental Studies and Categorical Exclusion for Clays Mill Road, Fayette County, Kentucky.** Project Manager responsible for the categorical exclusion and supporting studies for a 3.7-mile project in Lexington, KY. Prepared the HazMat/UST baseline study and assisted with the traffic noise modeling. Managed the sampling of streams, fish, and macroinvertebrates to determine water quality. Groundwater in the project area is hydrologically sensitive due to the karst topography. Participated in multiple citizen advisory committee and public meetings.

**Federal Railroad Administration Categorical Exclusion for TIGER Grant for Railroad Bridge Replacement, IN.** Prepared Categorical Exclusion for historic bridge replacement partially funded from a TIGER grant. Categorical Exclusion was prepared for a private railroad for submission to the Federal Railroad Administration. A Memorandum of Agreement was developed between the US Army Corps of Engineers, State Historic Preservation Office, and the railroad to document the replacement of the historic bridge.

**140-Mile Virginia Rail Expansion (VRE) Project, Virginia.** Managed cultural resources and environmental constraints analysis for proposed 140-mile expansion project. Oversaw archival and field studies to identify historic and ecological resources within areas of potential effect. Identified NEPA categorical exclusions that could apply to sections of the project area to speed the permitting process.

**Third Party Review of Tier I EIS Process for Empire Corridor High Speed Rail Corridor, New York.**

For a private railroad company, reviewed Tier I EIS process for the 463-mile Empire Corridor for High Speed Rail from New York City to Niagara Falls. Provided recommendations and position paper on Draft Tier I EIS process and opportunities for the railroad company to participate in the NEPA process both formally and informally. Evaluated potential impacts to railroad operations of an additional track for high speed rail.

**Third Party Review of Tier II EIS for Southeast High-Speed Rail Corridor, Richmond, VA to Raleigh, NC.** For a private railroad company, reviewed Draft Tier II EIS for the Southeast High-Speed Rail Corridor and provided recommendations and comments on Draft Tier II EIS document and potential impacts to railroad operations.

**Environmental Studies and Categorical Exclusion for KY 32, Kentucky Transportation Cabinet, Lawrence County, Kentucky.** Project Manager for the environmental studies for KY 32 in Lawrence County, KY. Prepared a Categorical Exclusion and Programmatic Section 4(f) evaluation for minor impacts to two historic sites. Identified potential onsite mitigation opportunities for approximately 3,000 feet of stream channel changes. Historic sites, a cemetery, and residential relocations were concerns.

**Third Party Review of Tier I EIS for Atlanta BeltLine Trail Project, GA.** For a private freight railroad company, reviewed Draft Tier I EIS for the proposed Atlanta Beltline Multi-use Trail Project for potential impacts to current railroad operations. Concerns exist that a new transit line, multi-use trails, crossings, and designation of the railway line as a historic district would affect existing and future expansions of freight operations and safety. Evaluated options for sharing easements. Prepared comments on the Draft Tier I EIS document. Participated in public involvement process, including attending public meetings and regular workgroup meetings.

**EA / FONSI, US 60 Bypass, Daviess County, Kentucky. Item No. 2-287.00.** Managed preparation of an EA and FONSI as well as baseline studies for this 5.2-mile project. A Citizen Advisory Committee met five times to express area citizen and business views. Wetland, stream, and archaeological site impacts were concerns.

**Categorical Exclusion for I-75/I-71 Auxiliary Lanes, Boone County, Kentucky.** For Kentucky Transportation Cabinet, prepared a Categorical Exclusion 3 for adding auxiliary lanes for I-71/I-75 in

Boone County. Conducted ecological, air, noise, hazardous materials, and socioeconomic studies. Noise analyses, noise abatement modeling, and multiple noise barrier public meetings were critical to success of project. Noise walls have been constructed and have received positive public feedback.

**I-69 Strategic Corridor Planning Study (Eddyville to Henderson), Lyon, Caldwell, Hopkins, Webster, and Henderson Counties, Kentucky.** Managed and helped prepare the environmental component for evaluating the 80-mile corridor for an I-69 segment. Identified potential environmental concerns (relocations, environmental justice, conservation areas, and endangered species). Managed aquatic / terrestrial, socioeconomic, hazardous materials / underground storage tank, and air and traffic noise analysis. Identified the regional needs for improving / supporting economic development through stakeholder meetings and coordination with local government officials and interested parties.

**Third Party Review of Socioeconomic Study for I-66 Project (London to Somerset), Pulaski County, Kentucky.** Provided a third-party review for the KYTC for the I-66 socioeconomic study. Evaluated economic and community impacts, potential residential and commercial relocations, environmental justice concerns, land use changes, and farmland impacts for a 40-mile highway project. Identified gaps in the socioeconomic analysis and provided recommendations on how to improve the study. Information from the revised study was incorporated into the EIS.

**Technical Reviewer for Bus Maintenance Facility Categorical Exclusion (CE), Transit Authority of River City (TARC), Jefferson County, Kentucky.** Provides quality assurance/quality control for ongoing projects by TARC. For a bus maintenance facility annex on a former Louisville & Nashville Railroad site, analyzed traffic information, bus emission reductions, land use, historic resources, environmental justice concerns, and the potential for hazardous materials/UST contamination. Determined that a CE was appropriate and prepared the documentation which was quickly approved by the FTA.

**Environmental Assessment, KY 55 (Heartland Parkway), Adair and Taylor Counties, Kentucky. Item No. 4-124.00.** Technical reviewer for preparation of EA for this 23-mile project. Managed cultural resource studies (archaeological and historic architectural surveys), Section 106 consultation, and Section 4(f) evaluation. Identified sensitive areas such as Tebbs Bend Civil War Battlefield area, Native American mounds, and potential historic sites.

**East Market Street Streetscape Categorical Exclusion, Louisville, Kentucky.** For Louisville Downtown Development and Louisville Metro, prepared a categorical exclusion for the East Market Streetscape project. Potential impacts to historic structures in several historic districts were potential concerns that were addressed with coordination with the Kentucky Heritage Council. Participated in public involvement activities, including multiple public and stakeholder meetings.

**Statewide Programmatic Agreement for Historic Timber Railroad Bridges, Georgia.** For a private client, worked with United States Army Corps of Engineers and State Historic Preservation Office to develop a statewide programmatic agreement for the replacement and repair of historic timber railroad bridges throughout Georgia. The programmatic agreement covered more than 300 bridges across the state.

**Native American Consultation Workgroup, Federal Highway Administration Kentucky Field Office.** Participated in a FHWA workgroup to evaluate Native American Consultation on transportation projects. Met with FHWA, Kentucky Heritage Council, Office of State Archaeology, and representatives of Native American tribes over two years.

#### **Tennessee Valley Authority**

**Wilson Dam Bridge Deck Refurbishment EA. Tennessee Valley Authority, Alabama.** Project manager for an environmental assessment analyzing the potential impacts resulting from refurbishment of the Wilson Dam bridge Deck spanning Pickwick Reservoir and connecting Colbert and Lauderdale counties, Alabama. Authored multiple resource sections and coordinated directly with TVA NEPA and project management team. Organized public meeting and responded to public comments on the Draft EA.

**Kingston Fossil Plant Wastewater Treatment Facility EA. Tennessee Valley Authority, Tennessee.** Assistant Project Manager for an environmental assessment addressing installation of new wet flue gas desulfurization wastewater treatment facilities and modification of existing processes at Kingston Fossil Plant to enhance wastewater quality. Authoring resource sections and responsible for senior-level NEPA support and QA/QC.

**Natural Resource Plan Supplemental EIS. Tennessee Valley Authority, Tennessee.** Assistant Project Manager for a supplemental EIS analyzing the implementation of a revised Natural Resource Plan covering 293,000 acres of TVA reservoir land. TVA manages 154 natural areas and conducts specific management activities compatible with the goals for each area. Providing technical review of draft resource sections, working with subject matter experts, and reviewing drafts of the Supplemental EIS.

**Riverton Development Project EA. Tennessee Valley Authority, TN.** Assistant project manager for an EA analyzing issuance of a shoreline construction permit associated with the proposed Riverton mixed-use development in Chattanooga, Tennessee. The permit would be issued under Section 26(a) of the TVA Act to allow Riverton to install floating residential boat docks and place riprap along the shoreline of the Nickajack Reservoir. Key issues included floodplain alteration, cultural and tribal resources, potential impacts on the NRHP-listed Chickamauga Dam Reservation, and conversion of a natural setting to one with mixed residential and commercial uses.

**Chickamauga Law Enforcement Training Center Easement EA. Tennessee Valley Authority, TN.** Assistant project manager for an EA analyzing issuance of an easement and land use permit for development of a law enforcement training center on TVA land near Chattanooga, Tennessee. Key issues include avoidance of cultural resources and federally listed species, potential impacts on the NRHP-listed Chickamauga Dam Reservation, and impacts on transportation and noise. Required close coordination with TVA archaeologist and botanist.

**Clean Water Act Section 401 Permitting Tool for TVA Natural Resources Group, Tennessee.** Assistant project manager responsible for developing a new tool to ensure TVA Section 26(a) permitting is consistent with state requirements for Clean Water Act Section 401 water quality certifications and U.S. Army Corps of Engineers Section 404 permits. Required clear and accurate identification of differing permitting processes across seven states (Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia) and three Corps districts (Nashville, Savannah, and Memphis).

**TVA Programmatic EIS for Closure of Ash Impoundments in Alabama, Kentucky, and Tennessee.** For TVA, helped prepare the EIS for the closure of ash impoundments as a result of new US EPA coal combustion residuals requirements and TVA's goal to close wet ash storage facilities. The EIS evaluated the potential effects of multiple closure alternatives. Prepared scoping report and participated in five public meetings held at different power plants. Supported public involvement and developed materials and posters for the public meetings. Drafted text for the programmatic component as well as the site-specific analysis for closing ten ash impoundments at six different fossil fuel plants. To address volume and complexity of comments, prepared standalone comment response document. Developed a public involvement plan and participated in six public meetings with responsibility for environmental issues and concerns.

**TVA Multiple Reservoir Land Management Plan EIS, Alabama, Kentucky, and Tennessee.** For TVA, helped prepare the EIS for multiple reservoir land management plans (RLMPs) for 138,000 acres of TVA-managed public land on eight reservoirs. The updated RLMPs are needed to consider changes to land uses over time, to make land planning decisions on these eight reservoirs consistent with the TVA Land Policy and the Comprehensive Valleywide Land Plan and to incorporate TVA's goals for managing natural resources on public lands. Developed air quality, recreation, and cultural resource sections of the EIS, as well as provided technical review.



**EA/FONSI, Ash Dewatering Facility at Shawnee Fossil Plant, Tennessee Valley Authority, McCracken County, Kentucky.** Supported development of EA/FONSI for a bottom ash dewatering facility to help TVA convert from wet ash storage to dry storage. Evaluated project affects to parks and nearby wildlife management areas and water use. Potential visual impacts on historic resources were a concern.

**EIS for TVA Bull Run Fossil Plant Landfill, TN.** EIS Author and Technical Reviewer for preparation of an EIS to address the storage of coal combustion residuals (ash) generated at Bull Run Fossil Plant. Helped prepare draft sections of the EIS including hazardous materials and cultural resources components, as well as provided technical review of draft documents. Provided technical assistance to address environmental concerns of adjacent residents related to the proposed landfill.

**TVA Muscle Shoals Reservation EA, Colbert County, AL.** Supported the environmental assessment on the proposed relocation and realignment of essential operations at the Muscle Shoals Reservation. The EA evaluated three alternatives: 1) no action; 2) construct a new facility on a Greenfield site; or 3) modify an existing facility on the Reservation to house the relocated essential operations. Organized the environmental component of the public meetings.

**Clean Water Act Section 401 Permitting Tool for TVA Natural Resources Group, Tennessee.** Assistant project manager for developing a new tool to ensure TVA Section 26(a) permitting is consistent with state requirements for Clean Water Act Section 401 water quality certifications and U.S. Army Corps of Engineers Section 404 permits. Required clear and accurate identification of differing permitting processes across seven states (Alabama, Georgia, Kentucky, Mississippi, North Carolina, Tennessee, and Virginia) and three Corps districts (Nashville, Savannah, and Memphis).

#### **United States Fish and Wildlife**

**Multi-State NiSource Habitat Conservation Plan Environmental Impact Statement, United States Fish and Wildlife Service and United States Forest Service, 14 States.** Supported development of an EIS for a habitat conservation plan and incidental take permit to cover 15,000 miles of pipeline in 14 states for the USFWS, USFS, FERC, USACE, and NPS. The EIS addressed unique subject matter and legal and regulatory concerns due to the large area covered and 43 threatened and endangered species considered. The Project crossed Kentucky, Louisiana, Mississippi, Tennessee, Virginia, and West Virginia. Supported technical reviews, socioeconomic analysis, cumulative impacts, consultation, and participated in public involvement activities in Lexington, KY; Columbus, Ohio; Nashville, Tennessee; and Charleston, West Virginia.

#### **Kentucky Department of Fish and Wildlife Resources**

**Kentucky Department of Fish and Wildlife Resources Stream Mitigation Support, Licking River and Kentucky River Watersheds.** Project Manager supporting stream mitigation projects funded by the fee in-lieu of program. Copperhead has provided ecological studies, monitoring, and biological assessments for multiple stream mitigation projects in the Licking River and Kentucky River watersheds. The projects reduce erosion and flooding issues as well as improve watersheds, stream function, and wildlife habitat.

**Slabcamp Branch of Triplett Creek Stream Mitigation Project Environmental Assessment, Rowan County, Kentucky.** Project Manager working with the Daniel Boone National Forest and United States Army Corps of Engineers on a stream restoration project. Providing habitat assessment and ecological surveys to support development of the environmental assessment. Preparing environmental assessment to meet the National Environmental Policy Act and Forest Plan requirements of the Forest Service.

#### **Department of Defense**

**Environmental Assessment for an Army Aviation Support Facility, Boone National Guard Center, Frankfort, Kentucky.** For the Kentucky Army National Guard, prepared an environmental assessment for a 30-acre proposed replacement site for the army aviation support facility which included maintenance facilities and a wash station. Evaluated potential noise impacts of helicopters taking off and

landing at the facility and the cumulative noise impacts due to adjacent airport. Adjusted EA analysis to constantly changing project location. The site was in a karst area so potential impacts from subsidence and groundwater contamination were considered. Public meetings were held to obtain public input and identify concerns.

**Environmental Assessment for Multi-Purpose Machine Gun Range, Indiana Army National Guard, Camp Atterbury, Indiana.** At the Camp Atterbury Joint Maneuver Training Center in Indiana (approximately 33,100 acres), Preparing an environmental assessment for a multipurpose machine gun range. Assessed potential environmental impacts, including cumulative impacts, of short-range site plans and long-range plans for developing and managing the installation. Reviewed existing site studies and worked closely with facility staff to analyze plans and potential effects. Worked closely with client and design team to minimize impacts to forested wetlands, streams, and floodplains. Evaluated socioeconomic and land use impacts from creation of new training areas on the facility and nearby communities. Coordinated with federal and state resource agencies and participated in multiple public meetings.

**Environmental Assessment and Public Involvement, Muscatatuck Urban Training Center, Indiana.** At the Muscatatuck Urban Training Center, supported the development of an environmental assessment for a new urban warfare and homeland security training center. Responsible for preparing portions of the Affected Environment and Environmental Impact sections for the EA. The Muscatatuck Urban Training Center (MUTC) would provide a new center for required urban assault and homeland security training at the former Muscatatuck State Development Center in Butlerville, Indiana. The MUTC would provide an urban training center to serve the wartime mission and combat readiness goals of military units as well as civilian homeland security and natural disaster response training needs. Natural resources on the proposed site include Pleasant Run, North Vernon Muscatatuck River, the Brush Creek Reservoir, and forested and non-forested lands. Preservation and reuse of 68 historic structures was a significant concern. Prepared outreach materials and participated in public meetings.

**Statewide Integrated Wildland Fire Management Plans (IWFMPs), Indiana, Kentucky, North Carolina, and West Virginia.** For the National Guard, managed preparation of statewide IWFMPs for training sites in multiple states. The IWFMPs developed programs to reduce wildfire potential; protect and enhance natural and cultural resources; preserve infrastructure and facilities; and promote safety. The IWFMPs examined the historical role of fire within and in the vicinity of installations; identified current ignition and fuel sources; and addressed fire training requirements and safety considerations including unexploded ordinance (UXO) and live fire areas. The IWFMPs recommended wildland fire prevention and suppression measures, as well as prescribed burn management and site-specific burn plans. EAs were prepared for each IWFMP. Stakeholder and agency meetings were an integral component of efforts.

**Integrated Natural Resources Management Plans (INRMPs) at Wendell H. Ford Regional Training Center (WHFRTC), Disney Training Center (DTC), and Hidden Valley Training Site (HVTS) and an Environmental Assessment (EA) for Training Operations at WHFRTC, Kentucky.** Managed two Environmental Assessments, three INRMPs, three Forest Management Plans (FMPs), and a state-wide Integrated Wildland Fire Management Plan (IWFMP) for three training sites. Worked closely with the KYARNG, the U.S. Fish and Wildlife Service (USFWS), and the Kentucky Department of Fish and Wildlife Resources (KDFWR) as well as other federal, state, and local agencies with an interest in the management of natural resources. Also, evaluated approximately 3,000 acres of new maneuver training areas added to the Training Center for potential impacts to the environment of planned training activities. Public and stakeholder meetings were held during development to identify potential concerns.

**NEPA and Planning Support to West Virginia Army National Guard, West Virginia.** Project Manager for environmental assessments for the West Virginia Army National Guard related to training areas, firing ranges, urban training centers, demolition ranges, readiness centers/armories, and army aviation facilities. Managed preparation of environmental assessments, land use plans, integrated natural resource management plans, forest management plans and endangered species management plans.

**Indiana Bat Programmatic Biological Assessment, Camp Atterbury Joint Maneuver Training Center, Indiana Army National Guard, Edinburgh, Indiana.** Oversaw the preparation of a programmatic Biological Assessment (BA) and associated formal consultation process with the US Fish & Wildlife Services regarding effects on Indiana Bats with respect to future routine training and land management activities and upcoming development projects at the approximately 33,132-acre Camp Atterbury Joint Maneuver Training Center. The BA was prepared in close coordination with the USFWS Bloomington Field Office. The programmatic BA will streamline the consultation process and reduce administrative costs for the INARNG and USFWS.

**Programmatic Biological Assessment for the Indiana Bat, Northern Long-eared Bat, and Gray Bat, U.S. Air Force Arnold Air Force Base, Tennessee.** Managed development of a programmatic biological assessment of routine training, land management, and Elk River Dam operations at the 39,000-acre Arnold Air Force Base in Tennessee. Potential adverse effects could result from timber management, prescribed fire, tree clearing during summer roadside maintenance activities, hazardous tree removal, range operations, wildfires, or emergency repairs/inspections at the dam. The proposed action may affect, and is likely to adversely affect Indiana bats, northern long-eared bats, and gray bats that use habitat within/near the Arnold Air Force Base.

**Training Site Master Plan, Camp Dawson, West Virginia.** Managed preparation of a conceptual master plan for the Camp Dawson Cantonment Area and the Volkstone Training Area. The conceptual master plan assisted in setting strategic goals for the mission and vision of the base, and is the starting point for a more detailed Training Facility Master Plan (TFMP) that is underway. The TFMP provides a foundation for the future development of Camp Dawson. Helped identify current conditions, facility and site constraints, and opportunities for enhanced opportunities.

**Design, Mitigation, and Geotechnical Services for Modified Record Firing Range, Camp Dawson, West Virginia.** Managed some of the design components of the modified record firing range. Provided technical review of the EA. Helped evaluate alternatives to minimize impacts to stream and wetlands. Managed development of erosion and sedimentation controls and coordination with state and Federal agencies on mitigation and permitting issues. Oversaw optimization of target elevations to minimize required earthwork and geotechnical evaluations of the access road and range control facilities locations.

**EA/FONSI for Armed Forces Reserve Center (AFRC), Buckhannon, West Virginia.** Managing the EA for the Buckhannon AFRC. Conducted a site visit and record search to evaluate potential environmental constraints, such as 100-year floodplains along Brushy Fork Creek. Developed EA that evaluates environmental impacts on a 49-acre site and potential mitigation options for the proposed AFRC. The AFRC will replace a 48-year old armory and provide needed training facilities. Addressed public concerns related to traffic, safety, and light pollution.

**Environmental Assessment and Phase I Environmental Site Assessment for Armed Forces Reserve Center, Elkins, West Virginia.** Managed the preparation of a Phase I Site Assessment and an environmental assessment for an armed forces reserve center on a 112-acre site. The site was a former farm and strip mine site. The Phase I ESA did not identify any evidence of spills or contamination at the site based on a review of historic records, field reconnaissance, and a review of Federal and state databases. Cultural resources, wetlands, and roadway access were concerns. Managed public involvement process for the NEPA document.

**Ripley Joint Armed Forces Reserve Center (JAFRC) Planning Charrette, Ripley, West Virginia.** Managed a three-day planning charrette for the proposed Ripley JAFRC. The purpose of the planning charrette was to conduct a fact-finding mission and to have discussions on the project details with key installation stake holders and to review the 1391 construction cost estimate. The planning report outlined the findings of the charrette and outlined next steps for the project.

**Briery Mountain Range Development Plan EA, Camp Dawson, West Virginia.** Managed the EA for three proposed Briery Mountain Training Area ranges which include a Live Fire Breach Facility (LFBF),

Hand Grenade Familiarization Range, and an Urban Assault Course (UAC). Coordinated with WVARNG to evaluate potential constraints, such as stream impacts, and to avoid and minimize environmental impacts. Managed public involvement and public meetings on proposed project.

**Water Resources Management Plan, Camp Dawson, West Virginia.** Project Manager. Managed the preparation of a water resources management plan for the West Virginia Army National Guard for Camp Dawson (approximately 3,797 acres). Assessed current availability of data regarding Camp Dawson water resources including the Cheat River, streams, and numerous tributaries. Conducted stakeholder meetings, site visits and recommended management goals for surface water, wetlands, floodplains, and groundwater resources.

**Environmental Assessment for Integrated Natural Resources Management Plan (INRMP) Updates, Marseilles Training Area (MTA), Illinois.** Managed EA for 2,850-acre MTA INRMP. Worked closely with Illinois Army National Guard and Illinois Department of Natural Resources, joint owners of the MTA. The EA evaluated potential environmental impacts of the plans for managing land, forest, aquatic and terrestrial habitat, special areas, fish and wildlife, rare species, pest control, and fire. The project allowed the ILARNG to remain in compliance with Army policy and other federal, state, and local laws and regulations, and to provide for no net loss in the capability of lands to support the military mission. Also, evaluated training plan for the construction and operation of ranges and other training facilities. Covered 15 proposed projects including range expansions, new ranges, live-fire breach facility, anti-tank range, grenade launcher range relocation, live fire shoot house, training support facility development projects, and training area maintenance projects.

**Integrated Natural Resource Management Plans (INRMPs), Environmental Assessments and an Endangered Species Management Plan (ESMP), Camp Crowder and Camp Clark Training Sites, MOARNG, Newton and Vernon Counties, Missouri.** Assistant Project Manager. Responsible for preparing two INRMPs and EAs for Camp Crowder and Camp Clark, which are comprised of 4,300 acres and 1,287 acres, respectively. Management Plans revised in this INRMP included land use, forest, aquatic and terrestrial species, special natural areas, fish and wildlife, rare species, pests, and fire. Conducted stakeholder meetings.

**Joint Land Use Study (JLUS), Camp Atterbury and Muscatatuck Urban Training Center (MUTC) | Bartholomew, Brown, Jennings, and Johnson Counties, Indiana.** Author and Technical Reviewer. Helped prepare the Camp Atterbury and MUTC JLUS, which is a cooperative land use planning effort by communities and military installations to jointly ensure future compatible development. The JLUS involved four south-central Indiana counties; several cities/towns, such as Columbus, Edinburgh, and North Vernon; economic development and regulatory agencies; and the two military installations. After extensive public involvement activities, the JLUS identified compatible land use and growth management guidelines and recommendations, which are now being implemented.

## **Recreation**

**122-Mile Licking River Blue Water Trail Plan, Kentucky.** Project Manager to evaluate the existing conditions along the study corridor and prepare trail plan. This Plan will include visual and written components to effectively communicate the opportunities for outdoor recreation and tourism within the study corridor to decisionmakers, interested parties, potential trail users, and the public. The Plan will provide a roadmap for future initiatives in the study corridor by identifying the potential for, but not limited to water access and use (e.g., kayaking, fishing), connectivity to greenways and public access, conservation and parks, historical and archaeological education, ecological and environmental education and stewardship, and other ideas generated by community input. Project Advisory Team and public meetings occur monthly and stakeholder meetings occurred in five counties.

**Environmental Assessment for Sports Park, Elizabethtown, Kentucky.** For the City of Elizabethtown, conducted environmental studies and prepared permit applications for a proposed 200-acre sports complex that includes soccer fields, baseball fields, basketball courts, tennis courts, and hiking trails.

Worked with the designer to minimize impacts to environmental resources by shifting trails and parking areas. Managed wetlands delineations, archaeological surveys, Phase I environmental site assessment, and a threatened and endangered species habitat survey. Worked with the USFWS on mitigation for potential impacts to the federally endangered Indiana bat.

**Noise Studies for World Shooting and Recreational Complex, Sparta, Illinois.** For the Illinois Department of Natural Resources, managed the preparation of noise studies for the development of a 1,600-acre shooting complex in Sparta, Illinois. Environmental assessment was prepared on an expedited schedule so that the Grand American Trapshooting Championships could be held at the complex opening. Evaluated potential noise impacts on adjacent property owners and recommended use of berms to minimize impacts. The site includes 120 trap shooting fields covering 3.5 miles, 24 skeet fields, 2 courses for sporting clays, and archery fields. Participated in public and stakeholder meetings to address noise concerns for nearby residents.

**Town Branch Trail Environmental Education Sign Project.** Using a Kentucky Fish and Wildlife Resources grant, prepared environmental education signs and booklet on fourteen topics associated with Town Branch Creek and its environmental context. The role of water in the environment is a main focus of the project, along with raising awareness about human impacts on ecosystems and ways to reduce those impacts. An exhibit and outreach materials were developed. The environmental sign project exhibit was on display at the state wildlife center for two months. The exhibit has also been displayed at libraries, schools, and the Children's science center. Environmental education signs have been fabricated and placed along the completed sections of the Town Branch Trail.

**Environmental Studies for Isaac Murphy Park Development, Lexington, KY.** Provided technical oversight of the environmental and cultural resource studies for the Isaac Murphy Memorial Art Garden Project in downtown Lexington. Participated in public archaeology events to promote park and understanding of neighbourhood history. Due to minority and low-income neighbourhoods, environmental justice was a concern.

**Southwest Jefferson County Greenways, Louisville Metro Parks Department, Louisville.** Supported Louisville Metro Parks Department develop a master plan to create greenways in southwest Jefferson County which will include shared use trails. The study area covers approximately 97 square miles or a quarter of Jefferson County. Identified ways to include cultural resources into the planning process such as historic properties to be destinations or waypoints for the education and benefit of trail users or archaeological sites to avoid. Provided technical review of draft documents and outreach materials.

**Paint Lick Historic Trail, Garrard County, Kentucky.** For Garrard County, prepared an EA for the Kentucky Department of Local Government to receive federal funding for the Paint Lick Historic Trail. Managed threatened and endangered species, hazardous materials, and cultural resource studies as well as public meetings. Managed Recreational Trails Grant application, trail plan, and environmental assessment. Will be starting construction of 1.5-mile multi-use trail in Summer 2022. The trail passes through the Paint Lick Historic District, historic Denny House farm, churches, historic Miller Station, and prehistoric archaeological sites. A mountain trail is planned to be adjacent to the historic trail.

**FEMA Paint Lick Green Infrastructure Environmental Assessment, Garrard County, Kentucky.** Managed Hazard Mitigation Grant for development of wetlands, pond, bioswale, and rain gardens. Prepared environmental assessment for FEMA to determine potential impacts of proposed green infrastructure project. Conducted desktop review and ecological studies of potential impacts.

## **Pipelines**

**Mountain Valley Pipeline Supplemental Environmental Impact Statement (SEIS), Jefferson National Forest (JNF), Virginia and West Virginia.** Managed the SEIS for section of the interstate pipeline crossing the JNF. Due to the controversy with the project, worked closely with Forest Service Office of General Counsel and natural resource staff. NEPA documents prepared on an accelerated schedule and including

addressing over 7,000 public comments. Threatened and endangered species concerns and water quality impacts to nearby streams were critical to success of project.

**206-Mile Lobos CO2 Pipeline Project, Kinder Morgan, New Mexico, and Arizona.** Assistant ecological team lead supporting wetland and waters of the U.S. delineation, threatened and endangered species studies, and vegetation / habitat assessments in support of permitting for a proposed 206-mile CO2 pipeline to be used in enhanced oil recovery process. Technical reviewer of draft Bureau of Land Management (BLM) plan of development and supporting ecological and cultural documents. Agency coordination includes the BLM, USACE, USFWS, Native American Nations, and state and local regulatory agencies from Arizona and New Mexico.

**Cortez Loop Pipeline Extension, Kinder Morgan, New Mexico.** Assistant ecological team lead for 40-mile pipeline extension, four new pump stations and other associated facilities. Ecological, paleontological resources, and cultural resource studies were undertaken for this proposed pipeline extension. Access roads and potential compressor stations and temporary storage areas were evaluated. Agency coordination included the Bureau of Land Management, United States Army Corps of Engineers, United States Fish and Wildlife Service, and state and local regulatory agencies.

**Supplemental Environmental Assessment for Relocation of a Petroleum Products Pipeline, CSX Transportation, Virginia.** Project manager for developing a supplemental environmental assessment for relocation of a 24-inch petroleum product pipeline due to the addition of 11 miles of a third railroad track. Approximately 3.0 miles of horizontal directional drilling occurred to reduce potential construction impacts to utilities, roads, water bodies and wetlands. Permitting, endangered species and floodplain issues were concerns, and required coordination with local, state, and federal regulatory agencies.

**Sparrows Point Liquefied Natural Gas (LNG) Terminal and Pipeline Project, Maryland and Pennsylvania.** Technical reviewer of cultural resource sections for FERC EIS for LNG facility and 88-mile pipeline. Acted as the third-party consultant to FERC for the preparation of National Environmental Policy Act (NEPA) compliant documents (the Draft Environmental Impact Statement [DEIS] and the Final EIS) for the LNG facility and related pipelines. The terminal is proposed for Sparrows Point, southeast of Baltimore in Baltimore County, MD and will can unload LNG ships, storing up to 480,000 cubic meters of LNG, vaporizing the LNG, and sending out the natural gas. Addressed public comments on the proposed project.

**Environmental Documentation for Water Pipeline, Bowling Green, Kentucky.** Project Manager for environmental studies and documentation for a 10-mile water pipeline for the Transpark Industrial Development. Oversaw cultural resources, wetlands, socioeconomic, hazardous materials, karst, and threatened and endangered species investigations. Cumulative impacts were an issue because of potential effects of future industrial growth in the area and karst terrain. Permitting and mitigation were concerns due to potential impacts to Mammoth Caves National Park. Public involvement was a key component to address concerns raised by citizen advocacy groups.

#### **Dams and Levees**

**NRCS Upper Walnut Creek FRD No. 6 and FRD No. 21, Butler County, Kansas.** NEPA Manager for two dam rehabilitation projects, prepared environmental assessments. The projects purposes are to rehabilitate FRD 6 and FRD 21 to meet safety and performance standards for high hazard dams and provide flood water protection to downstream areas. The EAs included the NRCS environmental evaluation worksheet and discussions of threatened and endangered species, wetlands, environmental justice, economic and social conditions, and cultural resources. Stakeholder meetings and public meetings were components of both projects.

**NRCS Pine Creek Dam Rehabilitation EA, Oneida, Tennessee.** Technical Reviewer. Supported Pine Creek Dam rehabilitation EA and archaeological and architectural historic surveys. The EA included the NRCS environmental evaluation worksheet and discussions of threatened and endangered species,

wetlands, environmental justice, economic and social conditions, and cultural resources. This multi-purpose dam and reservoir project serves as flood control and as the town's primary water supply. Stakeholder and public meetings were held to obtain input on concerns and needs.

**Environmental Impact Statements (EISs) for Two Flood Damage Reduction Projects (Levisa Fork Watershed Section 202 Program), Floyd and Pike Counties, KY.** For the USACE-Huntington District, Project Manager for the preparation of sections for the structural and nonstructural flood damage reduction measures EISs in Floyd and Pike Counties, KY. Major issues included community impacts, environmental justice, cultural resources, and terrestrial and aquatic mitigation. Identified concerns about the potential for residential and business relocation, impacts to property values, loss of community cohesion, the potential for induced flooding, hardships from raising residences, impacts to habitat for the Indiana bat, potential loss of tributary streams, and the potential impact of floodwall construction on the riparian corridor. Extensive agency coordination and public involvement required.

**EIS for Flood Damage Reduction, Pike County, Kentucky, Levisa Fork Watershed Section 202 Program.** Supported development of Draft EIS assessing impacts of flood damage reduction alternatives within the Levisa Fork Watershed in Pike County, Kentucky for the USACE, Huntington District. Project alternatives include structural and non-structural components. Reviewed Habitat Assessment Procedure (HEP) analysis for terrestrial impacts and a stream assessment for tributaries. Major issues included community impacts, cultural resources, and terrestrial and aquatic mitigation. Project required extensive coordination with U.S. Fish and Wildlife.

**Muddy Fork Conservancy District Supplemental EIS, Borden, Indiana.** A Supplemental EIS is being prepared for a new dam to provide additional municipal water supplies, control flooding, and create recreational opportunities. Early steps including reviewing technical and environmental studies to determine data gaps and areas for update. A review of the 1992 FEIS determined that a Supplemental EIS is necessary. Water supply studies were evaluated and revised in coordination with the water utility. The purpose and need section was expanded to include recreational opportunities for the reservoir. Agency, stakeholder, and public meetings were held to obtain input on concerns and needs.

### **Transmission Lines**

**Herleman to Meredosia Transmission Line, Ameren, Illinois.** Provided environmental planning support for the proposed 48-mile 345-kV overhead electric transmission line which crosses several named streams including the Illinois River. The Herleman to Meredosia line is part of Ameren's 330-mile Illinois Rivers Transmission Line initiative stretching from Palmyra, Missouri to the Illinois/Indiana state line. Supporting the development of a Conservation Plan in accordance with the Illinois Department of Natural Resources (IDNR) requirements for state-listed threatened and endangered species.

**Meredosia to Ipava Transmission Line, Ameren, Illinois.** Provided environmental planning support for the Meredosia to Ipava Transmission Line, Ameren, Illinois. The Meredosia to Ipava line is part of Ameren's 330-mile Illinois Rivers Transmission Line initiative stretching from Palmyra, Missouri to the Illinois/Indiana state line. Supporting the development of a Conservation Plan in accordance with the Illinois Department of Natural Resources (IDNR) requirements for state-listed T&E species.

**Maywood to Herleman Transmission Line, Ameren, Missouri and Illinois.** Provided environmental planning support for a proposed 345-kV electric transmission line crossing of the Mississippi River on federal property near Quincy, Illinois. The Maywood to Herlemen line is part of Ameren's 330-mile Illinois Rivers Transmission Line initiative stretching from Palmyra, Missouri to the Illinois/Indiana state line. Supporting the development of a Conservation Plan in accordance with the Illinois Department of Natural Resources (IDNR) requirements for state-listed threatened and endangered species.

### **Nuclear Power**

**Nuclear Reactor Operator Examination and Licensing Study, Multiple States.** For the U.S. Nuclear Regulatory Commission, conducted a study of the reactor operator examination and licensing function.

Reviewed information collected from 300 written questionnaires. Conducted personal interviews with reactor operators, senior reactor operators, training managers, and plant technical managers at multiple nuclear power facilities, and NRC regional offices.

**Bell Bend Nuclear Power Plant Third Party EIS for Nuclear Regulatory Commission, Pennsylvania.**

As a Senior Planner, prepared Third Party EIS sections for the Nuclear Regulatory Commission on land use, transmission lines, cultural resources, cooling tower, and cumulative impacts for a new reactor at the Bell Bend Nuclear Power Plant. Conducted site visits and interviews to evaluate existing land use and changes in land use resulting from the addition of a new reactor and changes to transmission lines. Reviewed the Environmental Report and prepared requests for additional information (RAIs) concerning potential data gaps. Participated in multiple public, agency, and local government meetings.

**Victoria Station Nuclear Power Plant Third Party EIS for Nuclear Regulatory Commission, Texas.**

Senior planner developing land use, transmission line, cultural resource, and cumulative impact sections of a Third Party EIS for the proposed Victoria Station Nuclear Power Plant Project. Evaluated sections of the ER and prepared RAIs. Evaluated existing and changes in land use resulting from the facility and transmission lines.

**Environmental Report, Confidential Client, Nuclear License Application Project, Michigan.** Technical reviewer of Socioeconomic sections of the ER for a new medical isotope production facility in the central US. This work is in accordance with the provisions of NUREG 1537 and related laws and regulations and entails the documentation of all socioeconomic baseline characteristics of the project site and vicinity.

**Utilities**

**Electric Power Research Institute Bat Mitigation Alternative Manual, Nationwide.** For the Electric Power Research Institute, developing a manual to evaluate mitigation alternatives, such as habitat enhancements, artificial roosts, conservation areas and banks, in lieu fee programs, and wetland creation for threatened and endangered bat species affected by utility operations, maintenance, and project activities. Evaluated information from government, non-profit, and commercial resources to identify compensatory mitigation alternatives. Analyzed peer-reviewed literature, data from bat working groups, and communications with regulators and other bat experts. The manual will quickly inform utilities about bat mitigation opportunities using graphic summaries, tables, decision trees, and case studies. As part of the project, developed user-friendly bat fact sheets for distribution to utility clients.

**Electric Power Industry Waste Reduction Activities.** For USEPA's WasteWise program, analysed waste reduction activities at utility generating stations, distribution and transmission facilities, and recovery and warehouse operations, including PG&E facilities. Worked with the Edison Electric Institute to select utilities to profile for waste reduction and recycling activities. Conducted site visits to power plants in 6 states. Profiled PG&E's waste reduction activities at generating stations and distribution facilities; Investment Recovery and Warehouse locations, Fleet Maintenance; and General Office facilities. Life cycle cost analysis, solid waste consulting, employee and public education activities, and measurement criteria were considered. Developed the Waste Reduction Activities of Selected WasteWise Partners: Electric Power Industry report.

**Report to Congress on Fossil Fuel Combustion Waste.** Supported USEPA in developing a Report to Congress on Fossil Fuel Combustion Waste. Worked on the technical studies concerning waste characterization, potential damage cases, risk analysis, and groundwater impacts. Evaluated existing federal and state regulatory requirements and cross media impacts of fossil fuel combustion wastes.

**United States Environmental Protection Agency**

**Guide for Industrial Nonhazardous Waste Management.** For USEPA, helped develop the guide for the management of industrial nonhazardous waste management. The guidance applied to waste managed in surface impoundments, landfills, and land application areas. Worked with the Edison Electric Institute



and the Electric Power Research Institute (EPRI) to consider impacts of the guidance on the electric utility industry. Participated in regular stakeholder and public meetings.

**US EPA Land Disposal Rule (LDR), Phase IV - Clarification of Bevill Exclusion for Mining Wastes.**

For US EPA, supported rulemaking development for mineral processing secondary materials that were excluded from the definition of solid waste if they are managed to meet conditions such as being recycled, stored for only short periods of time, and not causing contamination. Provided technical review of mineral processing literature and case studies. The support studies identified LDR treatment standards for metal bearing-wastes, including those generated by mineral processing operations.

**Nonhazardous Waste Identification Rule for Contaminated Media (HWIR-Media).** For US EPA, managed development of guidance for industrial waste management to protect land, ground water, surface water, and air. The purpose of the guide is to provide facility managers, state and tribal regulators, and the interested public with recommendations to better address the management of land-disposed, nonhazardous industrial wastes.

**Tire Pyrolysis Analysis.** For USEPA, reviewed comparative data on tire pyrolysis demonstration projects, including gaseous, liquid, and solid emissions, analysed end products, and environmental regulatory requirements for developing full-scale facilities. Analysed the feasibility of different thermal technologies for managing tires and developed guidance on environmental permitting and technical issues.

**Phosphogypsum Stack System.** For USEPA, updated agency understanding of federal and state regulatory programs addressing phosphogypsum and process wastewater from wet process phosphoric acid production facilities and case studies of environmental impacts. Reviewed Florida and Louisiana state and local waste management requirements. Interviewed state regulatory personnel concerning the effectiveness of state and local regulations to protect human health and the environment. Prepared an evaluated damage case studies in Florida and Louisiana of phosphogypsum stack operations, violations, and mitigation alternatives.

**Air Emissions Scoping Study.** For USEPA, developed an issue paper on controlling air emissions from waste management units. Researched available air emission controls for volatile organic compounds (VOCs) and particulates appropriate for landfills, surface impoundments, waste piles, and land application units. Addressed fugitive dust controls and implementing best management practices. Described a methodology for determining whether VOCs are of concern for specific wastes, discussed pretreatment of waste to remove organic constituents, controls to minimize VOC emissions, and capital and operating costs for control systems.

**Reports to Congress.** Supported USEPA in developing Reports to Congress on Fossil Fuel Combustion Waste, Municipal Solid Waste Flow Controls, Plastics, and Cement Kiln Dust. Evaluated existing federal and state regulatory requirements and cross media impacts.

**US EPA Report to Congress on Fossil Fuel Combustion Waste.** Supported USEPA in developing a Report to Congress on Fossil Fuel Combustion Waste. Worked on the technical studies concerning waste characterization, technical literature review, potential utility damage cases, risk analysis, and groundwater impacts. Evaluated existing federal and state regulatory requirements and cross media impacts of fossil fuel combustion wastes.

**Regulatory Support for US Environmental Protection Agency Rulemakings.** Supported the US EPA on the Hazardous Waste Identification Rule-Contaminated Media rulemaking, evaluating risk models and determining the impacts of contingent management options. Supported the development of the Land Disposal Restrictions - Phases 2 and 3 and Pulp and Paper Cluster rulemakings. Managed the Class V Underground Injection Control, Conditionally Exempt Small Quantity Generator, and Tribal Synthetic Minor Source rulemaking support including development of background documents, case studies, Information Collection Requests, and comment response documents.

**Support for National Environmental Justice Advisory Council (NEJAC), US Environmental Protection Agency.** The NEJAC is made up of 26 representatives of community, academia, industry, environmental, indigenous, as well as state/local/tribal government groups to create a dialogue that can define and "reinvent" solutions to environmental justice problems. Supported meetings and developed research materials and summaries for the NEJAC and subcommittee workgroups.

#### **United States Housing and Urban Development**

**United States Housing and Urban Development Task Force Report on Lead-Based Paint (LBP) Hazard Reduction and Financing.** Washington, D.C. For the United States Department of Housing and Urban Development and the United States Environmental Protection Agency, provided support to the Task Force concerning the impacts of liability on LBP hazard reduction and victim compensation. Helped to draft a report and recommendations on reducing LBP hazards to children. Evaluated state requirements for LBP hazard reduction, management of lead-based paint contaminated debris, and state liability standards. Participated in stakeholder work group.

**Draft Environmental Assessment for the Museum Plaza High-Rise and Parking Garage, Louisville, Kentucky.** Project manager overseeing environmental studies and preparation of an environmental assessment for the proposed Museum Plaza, a new multi-use development in downtown Louisville. The proposed project would consist of a 1.5-million-square-foot, 62-story building containing residential units, office space, a non-profit contemporary art museum, two hotels, and the University of Louisville Master of Fine Arts program, as well as a portion of the university's graduate business school. Floodplain and cultural resource issues were potential concerns. A Housing and Urban Development (HUD) grant is anticipated to help support this project and the National Environmental Policy Act (NEPA) documentation is being prepared to comply with HUD's requirements under 24 Code of Federal Regulations (CFR) 58.

#### **Municipalities**

**Permitting of Landfills, Municipal Waste Combustors, and Materials Recovery Facilities.** For municipalities, helped in permitting landfills, municipal waste combustors, and materials recovery facilities in seven states (Florida, Indiana, Michigan, New Jersey, New York, North Carolina, and Pennsylvania). Negotiated with state regulators on design, operating, monitoring, and closure and post-closure care permit conditions. Reviewed federal and state regulations and permit conditions for similar facilities. Participated in public meetings/hearings and submitted comments on proposed permits.

**Upper Paint Lick Watershed Plan.** Kentucky. Project manager. Helped build partnerships with local officials, resource agencies, farmers, private landowners, educational institutions and citizen monitoring programs to characterize the watershed, conduct water quality sampling/analysis and to develop a watershed plan for the Upper Paint Lick Creek area. Supported the creation of a watershed group (Paint Lick Watershed Alliance), developed outreach materials, and created a website. The Alliance hopes to work closely with farmers and residents to identify water quality problems, set goals, identify solutions, assist with the selection of appropriate best management practices (BMPs), and design an implementation program to improve the watershed health. Ideally, this project will champion the farmers as leaders of this water quality improvement effort. The project partners will be crucial to achieving watershed planning success.

**FEMA Paint Lick Green Infrastructure Environmental Assessment, Garrard County, Kentucky.** Managed Hazard Mitigation Grant for development of wetlands, pond, bioswale, and rain gardens. Prepared environmental assessment for FEMA to determine potential impacts of proposed green infrastructure project. Conducted desktop review and ecological studies of potential impacts.

**Permitting of a Sludge Incinerator.** Pennsylvania. For a municipality, supported the analysis of permitting requirements for a sludge incinerator. Reviewed the regulatory requirements for a process that would combine sludge and coal dust into briquettes and incinerate the briquettes as fuel. Examined

the air, solid waste, and water quality requirements for the sludge incinerator including residuals management.

**Small Power Production and Cogeneration Facilities, Municipalities and Corporations.** For municipalities, helped in permitting municipal waste combustors and landfills in seven states (Florida, Indiana, Michigan, New Jersey, New York, North Carolina, and Pennsylvania). Provided consulting services to municipalities and several manufacturing facilities considering about qualifying as a small power production or cogeneration facility under Federal Energy Regulatory Commission requirements. Reviewed federal and state regulations and permit conditions for similar facilities. Attended public meetings and submitted comments on proposed permits.

**Environmental Audits. Multiple Counties in Multiple States.** Developed surveys to evaluate the effectiveness of municipal compliance programs and wrote environmental audit reports of facilities and programs. The analysis of the survey results was complemented with on-site interviews to attain a thorough review of environmental procedures. Evaluated alternative waste management practices and drafted revisions to compliance manuals and programs.

**Solid Waste Management Plans.** Helped update solid waste management plans for counties in Florida, Michigan, New Jersey, and Pennsylvania. Reviewed current and future solid waste management programs and evaluated the costs and benefits of alternative best management practices. Interviewed solid waste management authorities, state and local government officials, regulatory personnel, engineers, and concerned citizens.

**Appeals of NPDES Permits and Notices of Violations at POTWs.** Involved with appeals of NPDES permits, pretreatment requirements, and notices of violations to publicly owned treatment works. These appeals considered the environmental requirements and costs of financing, constructing, and operating facilities to improve water quality management. Helped analysed corrective action requirements for sewage effluent injection wells at a POTW.

#### **Other Private Clients**

**Assessment of Visual, Auditory, and Lighting Effects of RiverPark Place Development on Cultural Resources, Private Client, Louisville, Kentucky.** On an accelerated schedule for a private developer, managed the assessment of potential visual, auditory, and lighting impacts from the waterfront development project on cultural historic resources. The project covered a one-mile Area of Potential Effect (APE) in Kentucky and Indiana. The development will include two 16-story structures surrounded by four 5-story structures for residential/commercial use. Two historic sites and part of a historic district will be adversely visually impacted by the proposed construction. Two historic sites also will be adversely affected by temporary construction noise and noise associated with increased vehicular or watercraft traffic. Worked with Kentucky Heritage Council to prepare an MOA for the project.

**Jefferson Commons, Outer Loop, Louisville, Kentucky.** For a private client, successfully obtained a Section 404 permit on a fast time schedule and managed the wetlands delineation and Phase I archaeological investigation for a development project along the Outer Loop in Louisville, Kentucky. Due to wetland and stream impacts, credits were obtained from a wetlands bank.

**Fisherman's Energy Atlantic City Windfarm, New Jersey.** Technical reviewer for cultural resource concerns related to National Historic Landmark Lucy the Elephant. Helped evaluate potential visual impacts of offshore wind turbines on listed National Register of Historic Resource. Helped coordinate with New Jersey State Historic Preservation Office (SHPO) on study needed to determine project would not adversely affect historic resources.

**Wetland and Stream Delineation and Permitting, Somerset, Kentucky.** For a private company, managed wetland and stream delineations as well as permitting for a proposed distillery. Conducted a habitat assessment for threatened and endangered species.