

## 4. Qualifications and Experience



**Throughout the U.S., ERM provides full-service NEPA support to private sector clients, federal agencies, and state agencies with NEPA-equivalent programs.**

**One thing that sets ERM apart from our competition is our ability to “think outside of the box”. For every project, we tailor our approach to meet specific goals and unique challenges.**

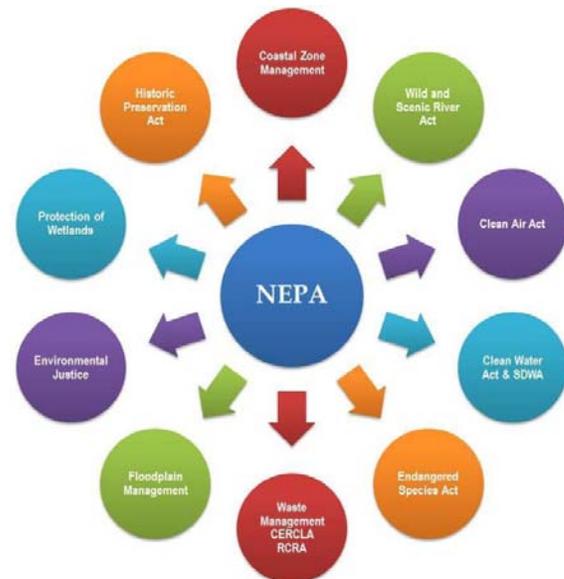
**Our experience in both private and public sector work sets ERM apart from other consultancies and gives us key insights into emerging private sector issues and practical knowledge of public agency procedures and requirements.**

### NEPA Requirements

Major actions that have the potential to affect the human environment and that involve federal funding or require a permit or other authorization from a federal agency are subject to the requirements of the National Environmental Policy Act of 1969 (NEPA). Under NEPA, project proponents must:

1. Evaluate the environmental and social consequences of their proposed actions;
2. Document those effects in a NEPA compliance document, such as an Environmental Assessment (EA) or an Environmental Impact Statement (EIS); and
3. Undertake a public consultation process that informs the public about the project and its potential consequences and offers the public the opportunity to voice concerns or provide input on the project.

NEPA compliance requires consideration of many other Federal regulations.

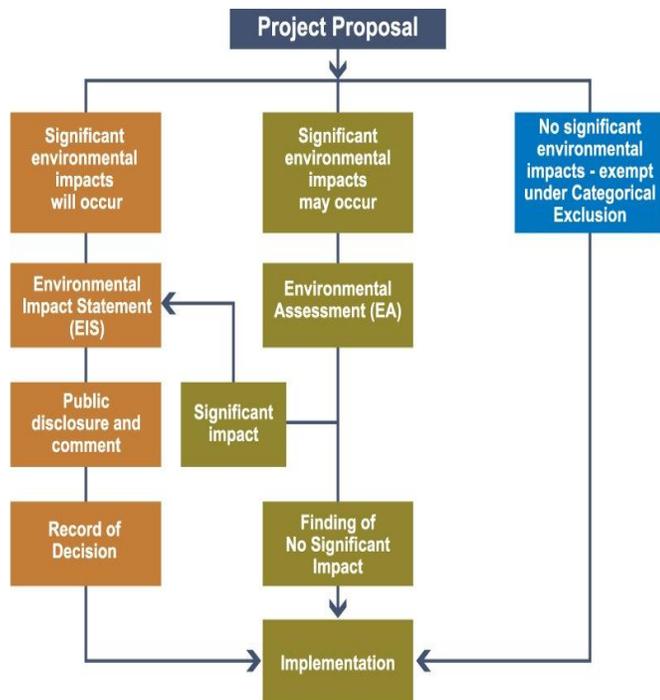


**ERM specialist teams have been involved in the successful completion of some of the most complex NEPA projects in the United States.**

**ERM has conducted NEPA projects in 46 of the 50 states.**

## NEPA and other Federal Regulations

While each NEPA project is unique, there are three primary paths for NEPA compliance depending on the degree of the project's environmental impact.



## State-Level Programs Similar to NEPA

Nineteen states now have some form of state-equivalent to NEPA, such as California's Environmental Quality Act (CEQA) review, or New York's State Environmental Quality Review Act (SEQRA), and others. ERM is highly experienced in coordinating the federal and state requirements to avoid redundancy and potential conflicts and to ensure efficient and successful completion of both the federal and state processes.

### States with Programs Similar to NEPA

California	Nevada
Connecticut	New Jersey
District of Columbia	New York
Georgia	North Carolina
Hawaii	Puerto Rico
Indiana	South Dakota
Maryland	Virginia
Massachusetts	Washington
Minnesota	Wisconsin
Montana	

ERM has successfully coordinated federal NEPA and state NEPA-equivalent processes in nine states. Currently, ERM is the third party contractor for a joint federal/state NEPA process for the Northmet Project, a proposed open pit mining operation in northeastern Minnesota. ERM is working closely with the Minnesota Department of Natural Resources, the lead state agency, and the U.S. Army Corps of Engineers, the lead federal agency, to prepare the EIS and to ensure state and federal NEPA and related requirements are met.





copper metal, and concentrates of nickel, cobalt, palladium, platinum, and gold from three open pits. The Project will include bedrock dewatering, mineral processing, waste rock management, and reuse of a former taconite tailings basin. The primary ore contains sulfides which have the potential to produce acidic waste products, requiring proper management in order to avoid impacts to the environment.

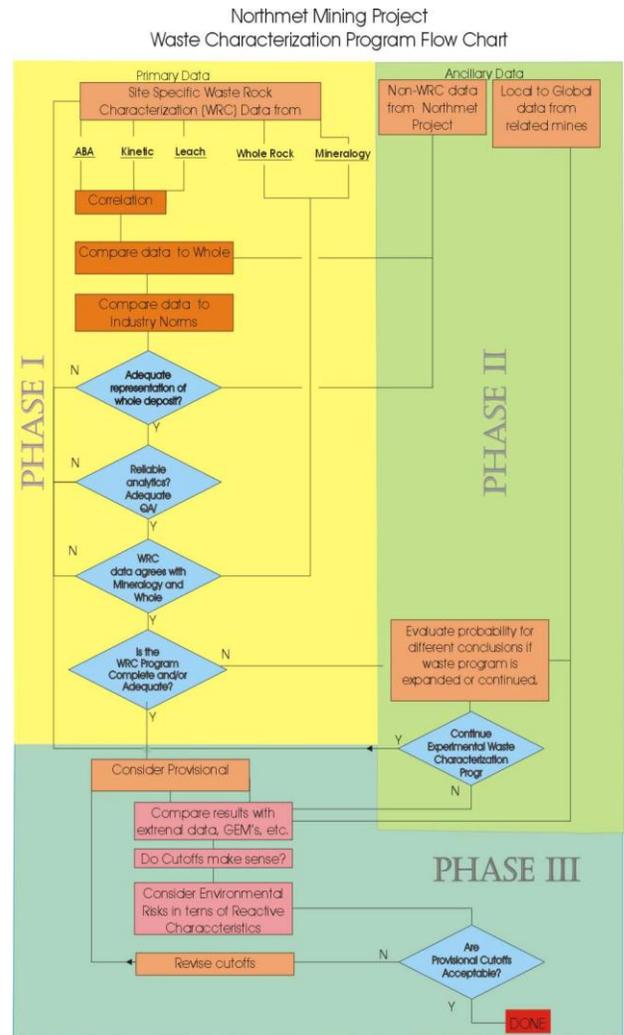
The project also involves construction of support infrastructure, including road, rail, electric transmission, and pipelines. This is the first sulfide mine in Minnesota and is subject to intense agency, tribal, and public scrutiny.

ERM is preparing a joint state/federal EIS that will satisfy the Minnesota Environmental Policy Act (MEPA) and associated Minnesota Rules parts 4410.0200 to 4410.6500, as well as the National Environmental Policy Act (NEPA) and its implementing regulations concurrently. To accomplish this, ERM's team, assembled from across North America, includes technical specialists covering a range of scientific and technical disciplines who are experienced in EIS development in the mining sector.

ERM has reviewed resource documents and project plans; identified additional data needs; coordinate project open houses and public meetings; conducted initial impact assessment; and assisted in the development of an "Agency Alternative" that the Project Sponsor has adopted that provides enhanced environmental protection (e.g., subaqueous disposal of reactive waste rock, improved tailings basin cover, increased water reuse to reduce makeup water demand, enhanced geotechnical stability). USEPA and several tribes (Chippewa bands) have become active participants in the process and ERM is facilitating a series of workgroups with them to review and resolve key project issues.

ERM is currently preparing a detailed EIS to evaluate the new Agency Alternative that meets applicable MEPA and NEPA requirements, includes a robust alternatives and cumulative effects assessment, and will

withstand intense public scrutiny and potential public opposition.



ERM's phased approach to characterization of the Project's waste products.

### Common Facilities Pipeline System Expansion—

The Midwest has experienced increased demand for natural gas over the past several winters and retail gas demand is projected to continue to grow. Much of this

supply comes from the western U.S. and western Canadian sources that serve natural gas demand in the region. The proposed constructing and operating extensions to its existing natural gas pipeline system to meet the needs of its subscribers by providing a reliable and timely supply of natural gas. These extensions would serve the growing demand for residential and industrial uses in southeastern Minnesota, Iowa, and northeastern Nebraska.

The overall project and system expansion included four components. The Ventura North portion of the project included installing about 1 mile of a 36-inch main line extension in northcentral Iowa. The Lacrosse-Tomah portion of the project included installing almost 5 miles of from 6-inch loop lines up to 36-inch main lines in southeastern Minnesota and northcentral Iowa. The East Leg portion of the project included installing about 8 miles of 6-inch loop lines, 8-inch branch lines, and up to 36-inch main lines in northcentral and central Iowa. The West Leg portion of the project included installing about 12 miles of 8-inch branch lines and up to 30-inch main lines in western Iowa and northeastern Nebraska.



*ERM was part of the team that conducted the fieldwork for and prepared the four Federal Energy Regulatory Commission (FERC) Prior Notice permit packages for the overall project.*

This project was conducted under an extremely fast-track schedule because had to begin

construction in the spring of 2008 to meet its contractual obligations with its subscribers. Our contract was not signed until the end of October 2007, essentially at the end of the fieldwork season, and work began in November. Teams were quickly mobilized over a 2-week period, fieldwork was completed prior to Thanksgiving, and the first set of draft resource reports were submitted by December 15. The remaining draft sets of Resource Reports were prepared and submitted to throughout January and February, completing them in only 4 months (typically a 6-month process to complete just one set of reports).

ERM visited the State Historic Preservation Officers (SHPOs) to collect archaeological and historical information, initiated tribal consultation with 22 tribes, and conducted reconnaissance cultural resources field studies. Once the cultural reports were submitted to the SHPOs, the Minnesota SHPO identified an area of concern and requested that systematic shovel testing be conducted. Once again, ERM signed a task order, mobilized staff, and began conducting the shovel testing in a little more than a week in mid-December.

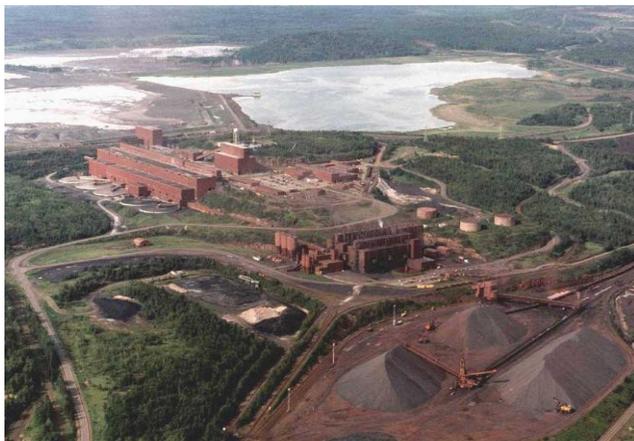


During that time the ground began to freeze and snow fall, so ERM quickly adjusted to the changing conditions by finding, contracting with, and mobilizing a Bobcat with an auger to assist in digging in the frozen topsoil. This shovel testing continued into early January, but was successfully completed and that project component remained on schedule.

ERM prepared the water use and quality; fish, wildlife, and vegetation; cultural resources; land use, recreation, and aesthetics; and the air quality and noise Resource Reports for Prior Notice applications to FERC. FERC staff not only approved these applications without revisions, they complimented by stating that they were some of the best that had been submitted to FERC.

### **Bemidji-Grand Rapids 230-kV Transmission Line—Minnesota Office of Energy Security**

Northern Minnesota has experienced increased demand for electrical energy, and that demand is projected to continue to grow, in a rural part of the state. Additional transmission line capacity is required to meet that growing need. In addition, the area is heavily affected by severe winter weather and additional measures are needed to improve the long-term reliability of the local and regional electrical system (i.e., northwestern Minnesota and eastern North Dakota).



*The NorthMet Mine and Ore Processing Facility will be the first commercial scale sulfide metal mine to be evaluated under the Minnesota Environmental Review Program.*

To meet these needs, a consortium comprised of Otter Tail Power Company, Minnesota Power, and Minnkota Power Cooperative, Inc. proposes to construct and operate the 68-mile long Bemidji-Grand Rapids 230-kV Transmission Line Project. This project is one of four

Group 1 projects in the Capacity Expansion 2020 (CapX2020) initiative in the state. ERM was hired as the Third-Party contractor (TPC) to work with the Minnesota Office of Energy Security (OES) and the U.S. Department of Agriculture Rural Utility Service's (RUS) Development Utilities Program to prepare the joint Environmental Impact Statement (EIS) for the project.

The proposed single-circuit Bemidji-Grand Rapids 230-kV Transmission Line Project would be constructed on wooden 2-pole H-frame structures. These structures would range from 70 to 90 feet tall and would be spaced 600 to 1,000 feet apart. The proposed transmission line would generally follow the Great Lakes Gas Transmission Company's pipeline right-of-way, from the Wilton Substation located west of Bemidji to just east of Deer River, where it then would follow a Minnesota Power 115-kV transmission line to the Boswell Substation located northwest of Grand Rapids, Minnesota. This route would cross portions of the Chippewa National Forest and the Leech Lake Indian Reservation. An alternative route proposed by the consortium generally would follow U.S. Highway 2 and then the pipeline rights-of-way of Enbridge Pipelines LLC.

ERM worked as an extension of the OES's staff to identify issues, collect additional information, and prepare the draft and final Environmental Impact Statements. ERM began by assisting in organizing and participating in the five public scoping meetings for the project, as well as two inter-agency working group meetings. ERM assisted in facilitating those meetings as well as taking notes. A Public Scoping Summary report then was prepared to categorize, by key topic in the EIS, and summarize all verbal and written comments received during the scoping period.

ERM also collected additional desktop biological and cultural resources information for three new alternative routes. This information was placed into the GIS databases, along with the two proposed routes, to conduct a comparative screening analysis of all five routes. New maps and tables were then prepared comparing the potential environmental, land use, and socioeconomic impacts of the five routes.

ERM also served as the TPC to assist the OES in complying with the Minnesota Power Plant Siting Act (PPSA) and associated rules, and prepared the EIS. The EIS was prepared as a joint EIS to meet U.S. National Environmental Policy Act (NEPA) requirements. These two processes had different timelines and data needs for evaluation of the proposed alternatives. As such, ERM worked with the state OES along with the RUS, and other federal agencies to ensure that both federal and state requirements and concerns were appropriately addressed.

### Water Supply Project—City of Virginia Beach

ERM prepared an Environmental Impact Statement (EIS) for the City of Virginia Beach Water Supply Project. The proposed project involved a 60 million gallon per day (mgd) interbasin transfer of water from Lake Gaston in the Roanoke River Basin of North Carolina via a 76-mile-long pipeline to the City of Virginia Beach and surrounding municipalities. The project was very controversial and had been the subject of several previous environmental impact assessments, several court challenges, and over 15 years of contentious argument regarding its environmental effects.

ERM conducted a detailed water supply and demand analysis evaluating population growth trends, per capita water use, and average water demand by sector through the year 2030. This water demand was compared with the safe yield of existing and programmed water supplies, including raw water sources, distribution systems, treatment capacities, reservoir capacity, and groundwater availability, to confirm a water supply deficit of approximately 60 mgd.

ERM modeled the entire 9,600 square mile basin using HEC-5 to simulate the effects of the withdrawal on river hydrology and reservoir routing. The model also took into consideration existing and future consumptive uses of water within the river basin that would affect flow conditions. ERM evaluated water quality impacts of the withdrawal within Lake Gaston, downstream along the Roanoke River, and in estuarine portions of Albemarle Sound. We reviewed existing NPDES permit conditions

within the watershed as well as potential future dischargers to the river in order to determine the basin-wide assimilative capacity of the river. ERM developed a statistical model of river flow, temperature and water quality relationships and concluded that the proposed withdrawal would not compromise the assimilative capacity of the lower Roanoke River.



*The key issue was the effect of the withdrawal on the Roanoke River system, including hydrology, water quality, and fisheries.*

ERM also analyzed the effect of the reduced river flows resulting from the withdrawal on salinity relationships in Albemarle Sound, focusing specifically on the potential for saltwater intrusion. Our analysis concluded that the combination of relatively high outflow, small cross-sectional area, and low flow augmentation effectively blocked saline water from entering the lower river.

The Roanoke River provides critical spawning habitat for striped bass. Research has indicated that low spring flows result in shortened egg development time and longer travel times for larval striped bass to reach rearing areas. Several resource agencies expressed concern that the proposed withdrawal would increase the frequency of low flows in the spring, adversely affecting striped bass spawning. ERM performed an independent analysis of the relationship between striped bass stock decline and regulated spring flows in the Roanoke River. Using HEC-5, ERM concluded that proposed flow augmentation by the City of Virginia

Beach would offset the effects of the proposed withdrawal and would not adversely affect striped bass spawning. Under worse case conditions, the proposed withdrawal would result in only a 3.3 hour increase in striped bass egg and larval travel time to Albemarle Sound, which is negligible compared to natural variability due to wind and tides.

ERM concluded that the proposed withdrawal would not have any significant adverse effects on the Roanoke River and recommended approval of the project. Although challenged all the way to the U.S. Supreme Court, the EIS was upheld. The project has now been constructed and is in operation.

### Environmental Impact Review and Permitting

A multi-state pipeline company wanted to construct a 70-mile-long pipeline across mid-Michigan to provide refined petroleum products to over 25 counties. The project required rapid permitting to support the expedited construction schedule.

ERM completed a comprehensive Environmental Impact Review (EIR), which is a state-level EIS equivalent, to characterize resources and associated impacts. ERM inventoried natural and social resources, conducting research and field and aerial assessments of wetlands, streams and floodplains, wildlife, geology and soils, groundwater and wells, historic cultural resources, aesthetics, noise, natural resource areas, and socioeconomic factors.

ERM also identified resource impacts and developed mitigation measures to facilitate permit approvals. ERM provided permit coordination, application, and follow-up activities with State and local agencies, including the Michigan Public Services Commission, MDEQ, and the State Historic Preservation Office. ERM also provided expert witness services in several contested case hearings to support the findings of the EIR.



*A multi-team approach was used to expedite field assessments along the entire 70-mile long corridor in a shortened timeframe.*

Environmental permits and clearances were successfully obtained from all agencies to allow construction of the southern half of the pipeline. Permits and approvals obtained included MPSC Certificate of Public Convenience and Necessity, MDEQ wetland and stream crossing, MDNR threatened and endangered species clearance, multi-county soil and sedimentation control and drain crossing permits, and NPDES discharge permits for stormwater and hydrostatic test water.

The southern segment was successfully constructed with ERM staff providing full time on site environmental inspection. ERM provided on-site certified inspectors to ensure contractor compliance with wetland, soil erosion/sedimentation control, stream and drain crossing, and other environmental protection, mitigation and restoration measures. The northern half of the pipeline corridor was revised to accommodate MPSC routing concerns, and similar permits were successfully obtained for the revised route.

### Environmental Assessment—Proposed F-16 Beddown

The U.S. Air Force proposes to station up to eighteen new F-16 Model E/F aircraft at the 162 Fighter Wing (FW), based at the Tucson International Airport (TIA), in Tucson, Arizona. The 162 FW is tasked with training

international and domestic pilots in F-16 operations and air-to-air and air-to-ground tactical operations using several military training routes (MTRs), Military Operating Areas (MOAs), and the Barry M. Goldwater Range (BMGR). The proposed action would result in an annual increase of 1,800 sorties. The Air National Guard contracted with ERM to evaluate the environmental effects of the proposed action and to prepare an Environmental Assessment in compliance with the National Environmental Policy Act. NEPA compliance must be completed within 5 months in order to meet internal Air Force decision deadlines.

ERM evaluated the effects of the new aircraft and increased sorties on noise levels in and around TIA and determined that no noise-sensitive uses would be adversely affected. There were no other significant adverse effects at TIA.



*ERM prepared a Biological Assessment evaluating the effects of the proposed action on the pronghorn, and concluded that the proposed action is not likely to adversely affect the pronghorn. ERM consulted further with the USFWS and provided some supplemental information on maximum instantaneous aircraft noise levels.*

ERM also prepared a draft EA for review by various state and federal agencies and local stakeholders. ERM also evaluated the effects of the increased sorties at environmental resources in the MTRs, MOAs, and on the BMGR. There are several federally-listed threatened and endangered species found at BMGR, in particular

the Sonoran Pronghorn antelope. The U.S. Fish and Wildlife Service (USFWS) had just recently prepared a Biological Opinion on the effects of military operations at the range on the Pronghorn, focusing on the effects of aircraft noise and on the use of inert and live munitions. The proposed action would increase the number of sorties and would involve the use of live munitions.

ERM finished the EA ahead of schedule. The Air National Guard has recommended that the EA ERM prepared be their new standard for EAs. ERM is on schedule to finish the EA ahead of schedule.

### **Environmental Permitting Services for Multi-state Pipeline Network—Confidential Pipeline Client**

A multi-state pipeline company needed to perform repairs and other maintenance of a liquids petroleum pipeline network pipeline spanning 700 miles across multiple Midwest states. The multiple projects required rapid federal, state, and local permitting to support the construction schedule.

ERM assembled a team of engineers, biologists, geologists, and GIS experts to support a comprehensive permitting program. Database research and field surveys are being completed for wetlands, threatened and endangered species, wildlife habitat, soils, lakes and streams, and contaminated sites.

Using the results of the surveys and data gathering, ERM is working with the pipeline company to develop project plans and designs to minimize and mitigate environmental impacts. ERM has prepared soil erosion and sedimentation control plans, stormwater pollution prevention plans, wetland protection measures, stream and bank restoration plans, rare species mitigation plans, and NDPES discharge plans. ERM also developed spill response plans, investigated petroleum releases from legacy operators and third-party accidents, and developed and implemented remediation plans. Permit applications have been prepared and submitted

to federal, state, and local agencies. ERM has also provided support to the client to ensure permitting compliance during construction at numerous sites.

On behalf of its client, ERM has obtained local, state, and federal permits and approvals from USACE, USFWS, MDEQ, MDNR, IDNR, IDEM, SHPO, and numerous counties in multiple states. Permits have been obtained to support projects in over 50 locations, and projects have been completed with no violations. Multiple release sites have been closed or are in the process of working toward closure.

### Permitting and Development Support

ERM provided permitting and development support for the \_\_\_\_\_, a proposed petroleum refinery and integrated gasification combined cycle (IGCC) power plant complex to be located in southeastern South Dakota. ERM prepared a regulatory permitting roadmap for the project, as well as a detailed scope of activities that would be required to prepare an Environmental Impact Assessment for the project (a formal EIS was not required for the project). ERM conducted a critical issues analysis for the selected site to determine, at a screening level, whether there were any environmental, regulatory or socioeconomic issues that could potentially result in a barrier to permitting the \_\_\_\_\_.

Following completion of the critical issues analysis, ERM completed or coordinated sub-consultants to complete a number of studies for the project including: an economic impact study with a comprehensive multiplier analysis; a socioeconomic baseline study to assess the current regional setting with respect to labor, housing, and public infrastructure; an ecological reconnaissance to determine the general ecological setting of the proposed site and surrounding areas; a cultural resources survey to assess whether archaeological resources are present within the proposed project development area; a noise impact

analysis including modeling of projected noise levels during operation; and an odor analysis which utilized the results of air dispersion modeling to assess the predicted extent of perceivable odor impacts. Additionally, ERM completed a screening-level health impact analysis to assess the predicted carcinogenic risk to nearby receptors due to long-term inhalation of emissions from the facility during operations.

Throughout the project, ERM interacted directly with the engineering services contractor in order to provide input to the environmental considerations of the design. As part of this interaction, ERM assisted with development of a detailed breakdown of projected project construction and operation labor hours and labor and materials costs. This detailed information was used to complete the economic impact multiplier analysis.

ERM provided assistance with public interaction including: preparation of materials for and participation in three kiosk-style open house informational sessions at separate locations in the vicinity of the proposed project; and participation in three public meetings during which members of the community provided comments and questions on the proposed project. ERM also prepared a Green Charter for the project which outlined the approach that the project would take in order to ensure that design and operation is performed in an environmentally and socially sustainable manner. ERM supported engagement with regulatory stakeholders for the project, including consultations with the U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, South Dakota Department of Environment and Natural Resources, South Dakota Department of Transportation, and National Park Service.

### Manual,

ERM developed a comprehensive environmental compliance manual addressing permitting for natural gas pipeline system.

## Northeast Gateway Deepwater Port— Massachusetts Bay

Under contract to [redacted], ERM served as the **third-party contractor to assist the U.S. Coast Guard in the environmental review** of the Northeast Gateway Deepwater Port and pipeline. The Port was licensed under the Deepwater Port Act and its associated pipeline lateral received a Certificate of Public Convenience and Necessity from the FERC under section 7(c) of the Natural Gas Act. The U.S. Coast Guard was the Lead Federal Agency for the NEPA review of the Port and Pipeline; the FERC acted as a cooperating agency.

## Golden Pass LNG Import Terminal and Pipeline— Texas Gulf Coast

ERM provided siting, licensing, environmental and engineering support for the Golden Pass LNG Import Terminal and associated Pipeline under Section 3 and Section 7 of the Natural Gas Act, before FERC. ERM coordinated the environmental, socioeconomic, and cultural resource assessments necessary to locate, design and permit the facility and pipeline. ERM prepared the RR to be submitted with the FERC Application for the terminal and pipeline, and provided engineering liaison support.

ERM provided licensing, environmental, engineering, economic, and permitting support for a 1.4 BCFD LNG import terminal on the Delaware River in southern New Jersey for [redacted]. ERM was responsible the entire Environmental Resource Report, including coordination with the cryogenic and coastal design engineers. ERM conducted a detailed alternatives analysis to support facility siting and design, prepared the project Health and Safety Plan. ERM coordinated with the U.S. Coast Guard regarding the Letter of Intent and Project Operations Plan, and was also responsible for securing all necessary permits from New Jersey and Delaware.

## Storage Facility—

The [redacted] proposed to construct and operate a gas storage facility in Martin County, Florida, capable of converting natural gas to LNG for onsite storage and regasifying the LNG for delivery in Southeastern Florida during periods of peak demand without service interruptions in the pipelines.

*ERM was the Third-Party contractor working with FERC to perform an environmental review of the project. The NEPA Document was completed on schedule and under budget.*

## Permitting—

ERM assisted [redacted] in permitting the “lift and lay” replacement of approximately 2 miles of 30-inch natural gas pipeline in Montgomery County, Maryland. ERM obtained Environmental Resources Management 40 wetland, floodplain, endangered species, forest conservation, cultural resource, stormwater management, and sediment/erosion control permits from various federal, state, and local agencies.

## Permitting—

ERM provided wetland assessment, delineation, and permitting services to [redacted] for pipeline installations, replacements, and maintenance activities. ERM secured individual wetland permits for pipeline installation and replacement activities for throughout central Maryland and eastern Pennsylvania. ERM worked closely with the U.S. Army Corps of Engineers in 2003 to expedite the wetland permit review process so that [redacted] could minimize pipeline loss of service on pipelines that required maintenance within regulated wetlands.

## EIS Services for

ERM completed all services necessary for the environmental permitting of a 7.5-mile natural gas pipeline to supply a new 830 MW merchant electrical generating facility. A complete environmental impact

assessment of the pipeline route was completed, including identification, impact assessment, and development of mitigation measures for wetlands, streams, floodplains, erodible soils, archaeological sites, threatened and endangered species, and other natural resources. On behalf of its client, ERM secured environmental clearances and permits from the state public utilities regulatory agency, U.S. Fish and Wildlife Service, the state environmental regulatory agency, the state historic preservation office, and the local county drain commission. Construction inspection services were also provided to ensure compliance with project specifications and environmental permit conditions.

ERM prepared an Environmental Resource Report for an 89-mile-long, 30-inch natural gas pipeline associated with the Golden Pass LNG Project for submittal to the FERC pursuant to Section 7 of the Natural Gas Act. The RR addressed the full set of environmental issues including wetlands, streams, historic sites, land use, noise, and erodible soils.

### **EIA— Natural Gas Pipeline**

ERM developed engineering and environmental documents to support a competing application for an approximately 90-mile-long natural gas pipeline in Maine, New Hampshire, and Massachusetts.

### **Environmental Consulting—New York Power Authority**

The New York Power Authority (NYPA) retained ERM as a third-party contractor to participate in a Cooperative Consultation Process (CCP) and to prepare an EIS in the relicensing of the St. Lawrence - Franklin D. Roosevelt (FDR) Hydroelectric Project (FERC Project No. 2000) on the St. Lawrence River in St. Lawrence and Franklin Counties, New York. ERM took direction from the Federal Energy Regulatory Commission (FERC) and the New York State Department of Environmental Conservation (NYSDEC, a NEPA Cooperating

Environmental Resources Management 41 Agency, regarding any consultation or support services, and in the preparation of the EIS.

### **Siting—Maryland Department of Natural Resources**

ERM conducted a detailed analyses to support the State of Maryland's evidentiary proceeding to site, design, construct and operate a natural gas pipeline related to the Potomac Electric Power Co.'s proposed natural gas fired Combined-Cycle Power Plant along the Potomac River in Charles County, MD.

ERM provided detailed technical engineering, economic and environmental studies to support the certification, public risk and safety review, engineering feasibility and environmental permitting evaluation of an extensive construction and operation plan to expand natural gas pipeline service in the coastal areas of the lower Potomac River. ERM experts reviewed the gas pipeline construction and operations plan, assessed alternative construction techniques for an extensive high quality wetland community that the pipeline would cross, and performed catastrophic risk assessments to identify potential safety risks to materials, human health and the environment in a probabilistic risk assessment analysis.

### **Permitting— Gulf Coast**

ERM developed a Section 404 permit for the on-shore and immediately off-shore portion of an on-shore natural gas pipeline gathering system for Rainbow Pipeline operated by . This pipeline segment was part of a larger 600 mile long system. Field studies included an environmental survey of wetlands and off-shore benthic areas. An investigation of historic shoreline erosion rates was also performed. A comparative environmental assessment of construction alternatives was performed as part of the permit. ERM also assisted the client with regulatory agency negotiations.

## 5. Project Schedule and Work Plan



**ERM uses project planning software such as Microsoft Project as needed to help schedule control.**

**ERM finished the Environmental Assessment for the Proposed F-16 Beddown ahead of schedule. The Air National Guard has recommended that the EA ERM prepared be their new standard for EAs. ERM is on schedule to finish the EA ahead of schedule.**

### Schedule and Work Plan

ERM understands the critical need to set and maintain an expedited pre- and post-filing schedule while producing a defensible SEIS, particularly given past project delays and the high level of scrutiny surrounding the Keystone XL Project. We also understand that any delays or unaddressed issues in the process of completing a legally defensible SEIS could affect the implementation of the Project by TransCanada. Therefore, ERM has developed a Project team and expedited schedule under which we will provide a complete and legally defensible Final SEIS.

In the RFP, the Department has provided a project completion period of the first quarter 2013, or 9 months from proposal submittal. ERM is prepared to commit to this schedule subject to certain conditions described below regarding factors outside of ERM's control. However, the ERM Project team proposes a project schedule that will result in completion of the Project within this timeframe. ERM is committed to allocating the necessary resources and manage the Project to meet the task milestones described in the attached schedule in order to drive the Project to the expected completion date.

ERM is currently working on three EISs: Buckeye, a wind farm project in Ohio for the USFWS; NorthMet, a copper and nickel mine in Minnesota for the USACE; and an NEPA Document for Monk Seal habitat in Hawaii for NOAA.

These projects are being managed out of our Annapolis, Minneapolis, and Alaska offices respectively and these obligations will not affect our ability to maintain the Project schedule.

ERM and the key staff assigned to this Project offer highly qualified, experienced professionals, who bring the necessary environmental, regulatory, and technical experience in the application of NEPA to large, complex and often controversial projects. The proposed ERM Project team will provide the Department with a strong

group that can quickly and efficiently assess the Department's previous FEIS and supplemental information and prepare a comprehensive and defensible SEIS within budget and on schedule, satisfying the Department's expectations and all applicable regulatory requirements. ERM has committed our team and has the additional resources necessary to manage work loads as needed to meet the proposed schedule and maintain flexibility if modifications to the proposed schedule are required (see Section 3, Project Organization and Management Approach).

Once the Notice to Proceed has been received, ERM will immediately develop and maintain the master project schedule consistent with the determination and requirements of the Department and the scheduling conditions at that time. ERM uses project planning software such as Microsoft Project as needed to help schedule control. Using Microsoft Project, ERM will develop a resource-loaded schedule that covers the entire life of the Project. In so doing, we have been able to anticipate what skills will be needed and when they will be needed, allowing us to plan for changes in staff loading over the course of the Project. ERM will provide a draft schedule for review at the Kick-off Meeting.

Some key milestones that will inform the SEIS review process are not yet known; these include the results of new field studies along the revised route and the NDEQ evaluation report and permit. ERM understands the need for schedule flexibility and working with the Department will adjust the schedule as needed to accommodate project and process changes.

## Schedule Control

ERM uses project planning software such as Microsoft Project as needed to help schedule control. Using Microsoft Project ERM will develop a resource-loaded schedule that covers the entire life of the Project. In so doing, we have been able to anticipate what skills will

be needed and when they will be needed, allowing us to plan for changes in staff loading over the course of the Project.

Steve Koster, as Project Manager, will be responsible for planning, scheduling, and progress tracking consisting of startup planning for each task; regular project team meetings to provide real-time update of project status and to facilitate communication regarding changes in schedule, strategy, or project design; detailed project planning and focusing on critical path items and deliverables; and individual task progress review and reports. This level of project planning will be a necessity given the fast track leading to the submittal of PDSEIS to the Department on Day 90.

## Organizational Policy and Structure

ERM has a well-established partnership model that forms the foundation of our organizational policy and structure worldwide. We maintain a ratio of approximately one partner per 10 employees, and a partner is assigned to every project. ERM's partner-project manager model allows each partner to stay engaged with our clients, stay in touch with backlog and hiring needs, and provide QA/QC on all proposals and deliverables. ERM has grown organically, and our organizational partnership model has been intact for over 35 years.

ERM stresses a "flat" organizational structure based on the partnership model described above, and collaboration between offices is encouraged and incentivized. The lack of local profit centers ensures that we act in our client's best interest regardless of project location. We recognize the importance of having experienced project managers that are dedicated to our projects at strategic locations, supported by local staff and subcontractors to minimize travel, costs, and associated environmental impacts (i.e., greenhouse gases).

## Schedule

## Global Management System

Scope, schedule, and budget tracking are critical elements of successful project management. In 2006, ERM implemented a GMS, a secure, web-based project management tool accessible to all of ERM's global employees. GMS is used by the Project Manager to set up each project in concert with the proposed tasks for each authorization. Once a project is entered into GMS, task and subtask budgets are conveyed to staff, who then use their access to track labor and other expenses consistent with the budgets established. On a weekly basis, all of ERM's global employees log their project work hours and expenses into GMS. The ERM Project Manager can then query the system for immediate project status reports. GMS allows projects to be established independent of geographical location, enabling efficient cost tracking and accountability for each authorization.

Subcontractors will typically be selected based on specialty capabilities, geographical presence, or competitive pricing. ERM stresses teamwork with our subcontractors, and integrates their staff into each project through briefings, tailgate meetings, and frequent communications. ERM treats our subcontractors fairly, and pays them within an average of 45 days. At the same time, we hold our subcontractors accountable to the same high standards we expect of our own staff.

## Quality Assurance and Quality Control

Client goals and expectations are met through consistent application of ERM's Management System designed to assure that large, complex projects meet or exceed expectations. One element of this system contains project management requirements that cover the three stages of client service delivery including:

- Define and understand client needs and expectations at the proposal stage;
- Manage the Project's agreed to scope, schedule and budget, including any agreed to scope changes; and

- Measure, both along the way and upon completion, how we did and what we learned.

Our requirements are implemented by experienced Project Managers trained in our Management System with required peer review by a Principal at appropriate Environmental Resources Management 33 points in the Project, including review of all deliverables prior to submittal. The result is a set of consistent project management behaviors for the entire project team.

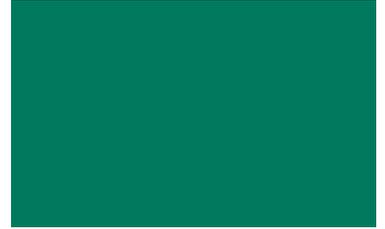
## Communications

Clear lines of accountability and reporting are critical to successful project management and communications. Our organizational chart, in Section 3, summarizes roles and lines of reporting for the Project. Key personnel communicate almost continuously about scope, schedule, and budgets related to individual tasks.

## Monthly Progress Report

For typical projects, ERM will submit a monthly progress report (MPR) to the Department Project Manager by the 10th of each month. The MPRs will summarize the work completed and problems encountered during the previous month, and projected activities for the coming month. In addition, an updated project schedule and a summary of costs billed-to-date will be included with each MPR.

## 6. References



### Firm Project References

	Client / Project	Name /Phone

### Steve Koster, PE — Project Manager References

	Client / Project	Name /Phone

## 7. Conflicts of Interest



**ERM has no business relationship with TransCanada or its affiliates, and in the attached is certifying that no conflict of interest exists for working on this Project.**

Pursuant to 40 CFR 1506.5(c), contractor selection is based on ability and absence of conflict of interest. ERM fully recognizes the importance of maintaining the absence of both real and perceived organizational conflicts of interest as an independent third-party contractor. This is certainly true for this Project and for all projects utilizing a third-party contractor role.

**ERM has no business relationship with TransCanada or its affiliates, and in the attached is certifying that no conflict of interest exists for working on this Project.**

As required by the RFP, ERM is submitting the following completed documents:

Attachment B1 – OCI Representation Statement

- Detailed description of the internal processes undertaken to conduct our internal OCI review

Attachment C – OCI Ongoing Obligations Certificate

Attachment D – OCI QUESTIONNAIRE

- OCI Questionnaire Supplement
- OCI Questionnaire Supplement Figure

Attachment E – Contractor CII Non-Disclosure Agreement

**ATTACHMENT "B1"****OCI REPRESENTATION STATEMENT**Name of Person or Organization: Environmental Resource Management (ERM)

I hereby certify (or as a representative of my organization, I hereby certify) that, to the best of my knowledge and belief, no facts exist relevant to any past, present or currently planned interest or activity (financial, contractual, personal, organizational or otherwise) that relate to the proposed work; and bear on whether I have (or the organization has) a possible conflict of interest with respect to (1) being able to render impartial, technically sound, and objective assistance or advice; or (2) being given an unfair competitive advantage. I provide a detailed description of the internal processes undertaken to conduct our internal OCI review in the attached page(s).

Signature: Date: June 27, 2012Name: Steven Koster, PEOrganization: ERMTitle: Senior Associate Partner

## ERM Policy and Procedure for Client Representation Checks (“CRC”) in North America

At ERM, we maintain strong relationships with our clients. We communicate with each other to prevent perceived impropriety, inappropriate use of confidential information, or the perception that ERM has created a conflict between duties owed to different clients. Toward that end, we have developed a procedure to identify client representation issues arising out of potentially sensitive client engagements. This procedure has been followed to ensure that ERM has no conflict with the proposed Keystone XL Pipeline Project.

- **Step 1:** Internal Research the Target Company of this CRC - as much information as possible is established about the Target Company and context for the project. Global and Key Clients lists are reviewed as well as other internal sales tool resources to see what work (if any) has been done or is ongoing with the Target Company.
- **Step 2:** A CRC email inquiry is sent to key business unit leaders, practice leaders, and other appropriate key personnel throughout ERM.
- **Step 3:** Responders (a) check ERM’s client databases, (b) confidentially check ERM’s institutional knowledge of the particular company, and (c) respond with information regarding what work ERM has done, or is doing, with the company.
- **Step 4:** “Follow up” communications with ERM staff are completed as needed and any additional research is performed.

**ATTACHMENT "C"**

**OCI ONGOING OBLIGATIONS CERTIFICATION**

I recognize that OCI is an ongoing obligation. Should I or my organization become aware of any actual or potential OCIs during performance of this contract, I or my organization will advise the Department of State and (Contractor/Applicant Name) and propose mitigation or explain why none is needed. I provide a description of internal controls for ensuring OCI does not arise during the Project on the attached page(s).

Signature 

Date: June 27, 2012

Name: Steven Koster, PE

Title: Senior Associate Partner

Organization: ERM

## ATTACHMENT "D"

### OCI QUESTIONNAIRE

Name of Person or Organization: Environmental Resource Management

1. Will you (or your organization) be involved in the performance of any portion of the proposed work?  
 No.  
 Yes. The portion of the proposed work; the proposed hours and dollar value; and the type of involvement are fully disclosed on the attached pages.
2. What is (are) the major type(s) of business conducted by you (or your organization)? Please reply on the attached pages.
3. Do you (or your organization) have any affiliates? <sup>1</sup> All questions in this questionnaire apply to affiliates as well. Whenever possible, each affiliate should submit a separate questionnaire (for instance, to avoid completing a large number of questionnaires), this questionnaire must incorporate information regarding all affiliates.  
 No.  
 Yes. The name and a description of the major type(s) of business that each affiliate conducts are disclosed on the attached pages.
4. Will any of the following be involved in performing the proposed work: (a) any entities owned or represented by you (or your organization); (b) your organization's Chief Executive or any of its directors; or (c) any affiliates? <sup>1</sup>  
 No.  
 Yes. A full disclosure and discussion is given in the attached pages.
5. Are you (or your organization) an energy concern? <sup>2</sup>  
 No.  
 Yes. A full disclosure and discussion is given on the attached pages.
6. Within the past three years, have you (or your organization) have a direct or indirect relationship (financial, organizational, contractual or otherwise) with any business entity that could be affected in any way by the proposed work?  
 No. ERM has no existing contract or working relationship with TransCanada.  
 Yes. List the business entity(ies) showing the nature of your relationship (including the dates of the relationship) and how it would be affected by the proposed work under this solicitation.

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<sup>1</sup> The term "affiliates" means business concerns which are affiliates of each other when either directly or indirectly one concern or individual controls or has the power to control another, or when a third party controls or has the power to control both.

<sup>2</sup> The term "energy concern" includes:

- i. Any person significantly engaged in the business of developing, extracting, producing, refining, transporting by pipeline, converting into synthetic fuel, distributing, or selling minerals for use as an energy source, or in the generation or transmission of energy from such minerals or from wastes or renewable resources;
- ii. Any person holding an interest in property from which coal, natural gas, crude oil, nuclear material or a renewable resource is commercially produced or obtained;
- iii. Any person significantly engaged in the business of producing, generating, transmitting, distributing, or selling electric power;
- iv. Any person significantly engaged in development, production, processing, sale or distribution of nuclear materials, facilities or technology; and
- v. Any person --
  - (1) significantly engaged in the business of conducting research, development, or demonstration related to an activity described in paragraphs (i) through (v); or
  - (2) significantly engaged in conducting such research, development, or demonstration with financial assistance under any Act the functions of which are vested in or delegated or transferred to the Chair of the Commission.



## ATTACHMENT “D”

### OCI QUESTIONNAIRE

## ERM - Supplement

### Question 2 Response

ERM has seven different business areas, yet all fall under a general heading of environmental services. ERM provides environmental services in the private and public oil and natural gas industry in upstream, mid-stream and downstream sectors.

The major business areas for ERM include:

- Impact Assessment Practice (the proposed third-party Department SEIS would fall under this practice area, although specialists would be drawn from other practice areas in developing the proposed SEIS);
- Sustainability and Climate Change Practice;
- Risk Management Practice;
- Performance Assurance Practice;
- Contaminated Site Management Practice;
- Air Quality and Noise Practice;
- Transaction Services Practice.

Additional information on ERM business practice areas can be provided to the Department upon request.

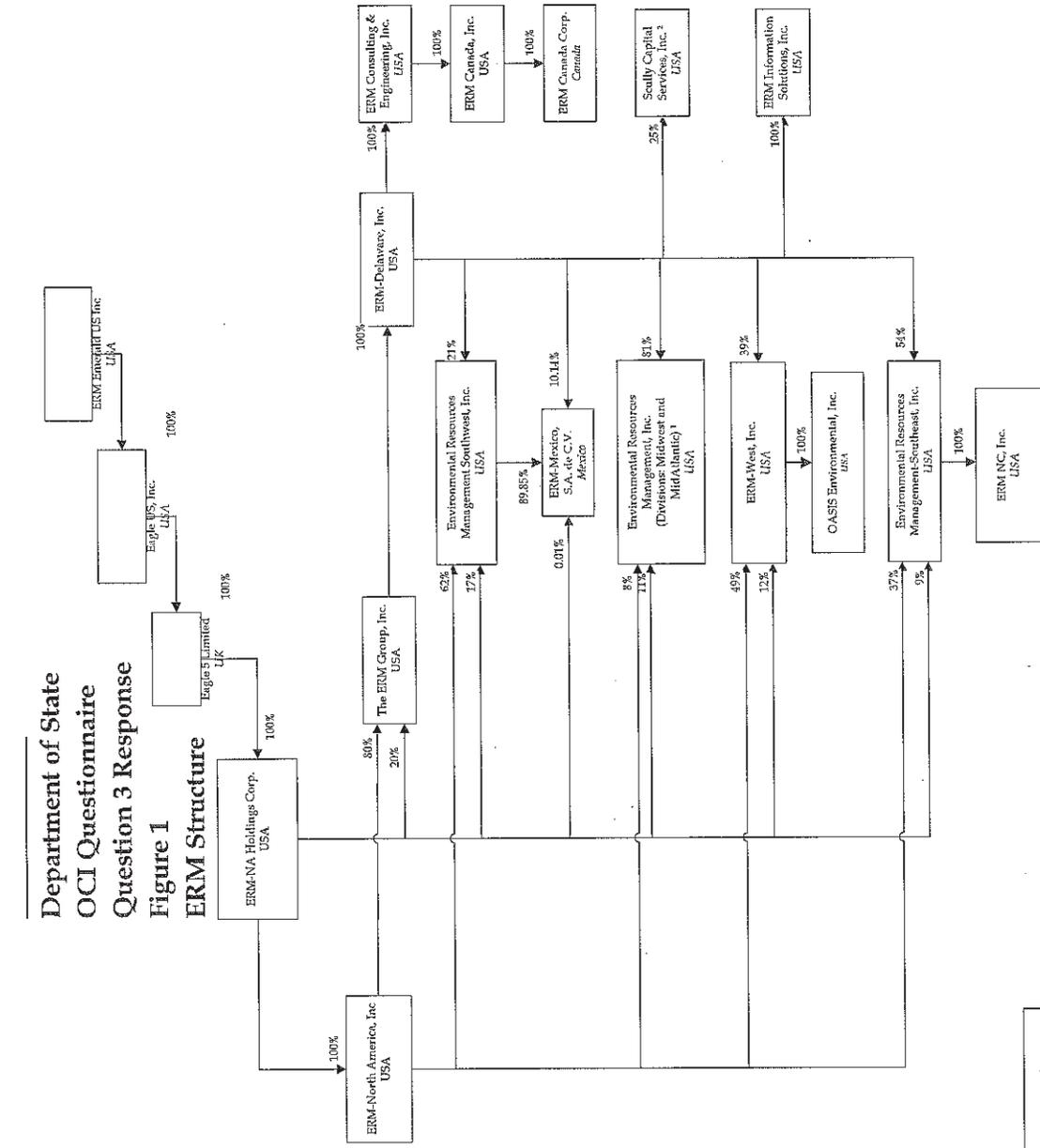
### Question 3 Response

All of ERM’s affiliates conduct work similar to that described in the response to Question 2. The names and structure of ERM and its affiliates are attached as Figure 1 on the following page.

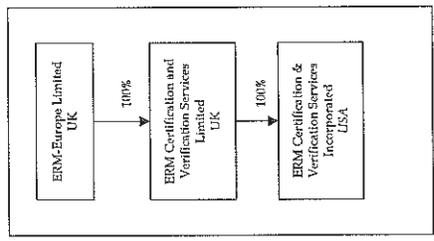
### Question 4 Response

ERM staff will be involved in performing the NEPA work as specified in the solicitation.

Department of State  
OCI Questionnaire  
Question 3 Response  
Figure 1  
ERM Structure



Updated as of 1 October 2011



**Notes**  
 1 Environmental Resources Management, Inc. (USA)  
 This company owns 10.1% of Bensalem Redevelopment L.P.  
 2 Scully Capital Services, Inc. (USA)  
 The remaining shares of this company are owned by third parties.

**KEY**

- = holding company
- = business unit \*
- = active

\* As Divisions are not legal structure, but rather business organization structure, Divisions are not reflected in this chart.

**ATTACHMENT "E"**

**CONTRACTOR CII NON-DISCLOSURE AGREEMENT**

On behalf of [contractor name], I certify that [contractor name] will abide by the following terms with respect to critical infrastructure information (CII) that the company has access to because of its work for the Department of State.

- Only authorized company employees with a need for the information will be given access to CII [contractor name] will maintain a list of each employee who is given access to CII, including a listing of each project for which the employee has been given CII.
- [Contractor name] will not provide CII to or discuss CII with anyone outside the company, except that CII may be discussed with the Department and other agencies as directed by the Department, the project's owner, operator, or applicant.
- Any copies made of CII will be marked as CII and treated as CII.
- CII will be used only in performance of [contractor name]'s work for the Department of State. When [contractor name] has completed work on the Project, all CII will be returned to the Department of State.
- I acknowledge that a violation of this agreement may result in negative consequences and could alter [contractor name]'s ability to contract with the Department of State in the future.

By: Steve Koster, PE

Title: Senior Associate Partner

Representing: ERM

Date: June 27, 2012

## 8. Resumes



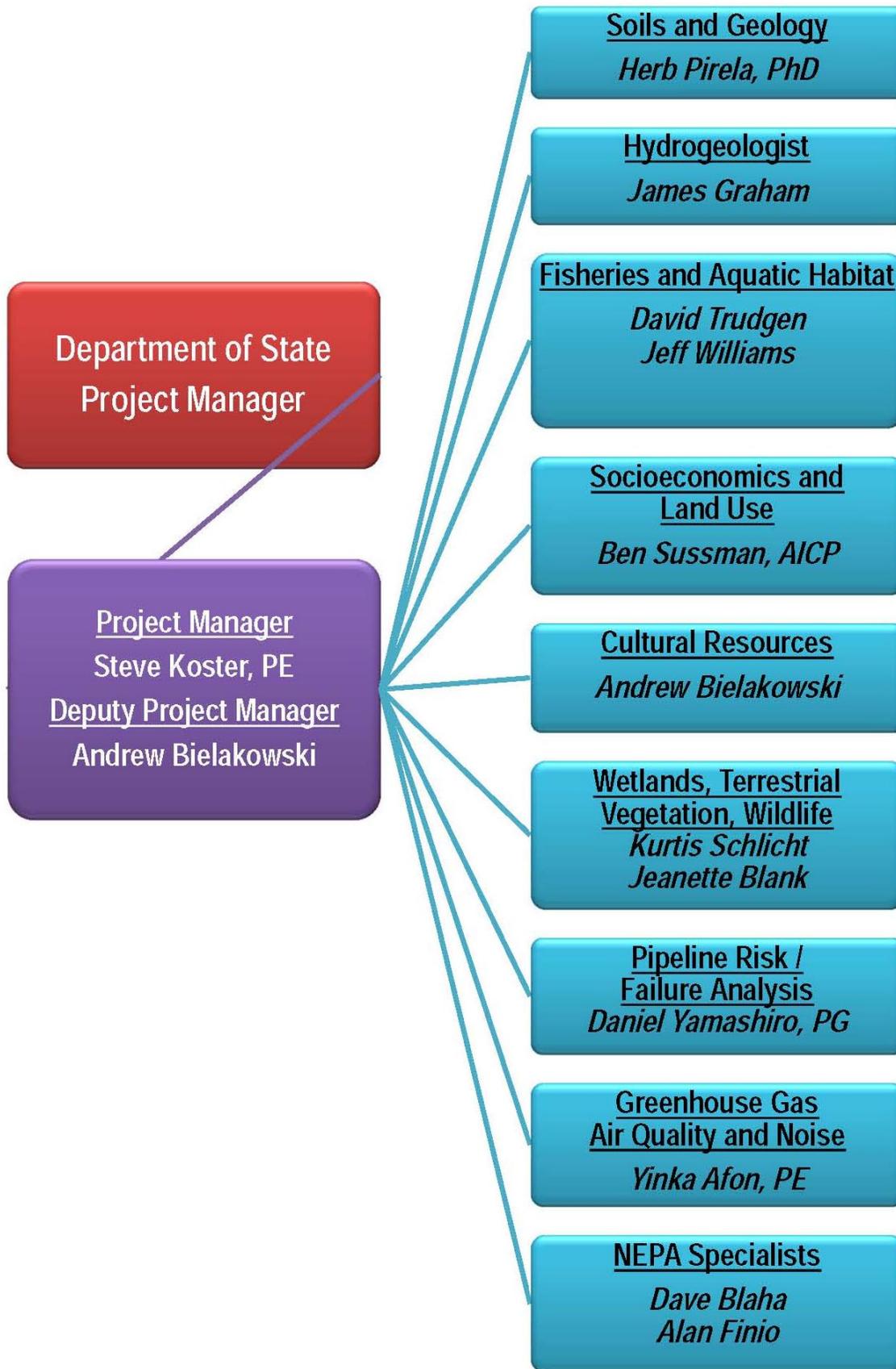
**ERM has assembled a Project team consisting of highly experienced key personnel, with deep staff resources across all scope of work disciplines to provide specialized expertise across the Project platform.**

**ERM is committing Steve Koster, PE as Project Manager and Andrew Bielakowski as Deputy Project Manager for the duration of the Project.**

Successful completion of any program or project requires understanding the client's needs, technical competence, managerial skills, and the ability to prepare and execute detailed work plans consistent with applicable goals, regulations, and guidance documents.

ERM has assembled a team of highly qualified and experienced professionals whose skills meet all program requirements, and whose qualifications, education, and responsibilities are tailored to the RFP requirements to successfully accomplish the diverse and complex work that is anticipated under this program.

Resumes for the ERM Team key personnel are included in this section.



# Steven J. Koster, P.E.

Project Manager



Steve Koster has more than 25 years of experience in environmental impact assessment, permitting, and impact mitigation for oil and gas projects.

Mr. Koster has managed multi-disciplinary teams to support development in multiple aspects of the oil and gas sector including pipeline, exploration and production, and retail. His management experience includes environmental impact assessments, environmental studies, and permitting of dozens of liquid petroleum and natural gas pipeline projects. He has overseen baseline studies and impact assessments for federal NEPA and/or state EIS throughout the Midwest; provided community, tribal, and stakeholder engagement support on highly visible and controversial siting and permitting projects; served as expert witness and provided litigation support in various judicial venues; and negotiated permit conditions with regulatory officials.

Mr. Koster has served as Partner-In-Charge or Project Manager for numerous NEPA EIS and EA projects, siting studies, and state/federal permitting projects. Projects have included surface water and groundwater hydrologic studies and modeling, wetland delineations, threatened and endangered species surveys and taking permits, aquatic surveys, wildlife assessments, soil erosion and sedimentation control permitting, air quality assessments, noise and visual studies, socioeconomic analyses, stakeholder mapping and engagement plans, and public meetings and presentations.

## Professional Affiliations and Registrations

- Registered Professional Engineer, State of Michigan
- American Society of Civil Engineers
- Air and Waste Management Association

## Fields of Competence

- Liquid and natural gas petroleum pipelines
- NEPA compliance
- Scoping, Environmental Impact Statements, and Environmental Assessments
- Groundwater hydrogeological investigations
- Federal and state environmental permitting – wetland, stream, stormwater, and soil
- Ecological studies
- Stakeholder and tribal engagement
- Litigation support and expert witness testimony

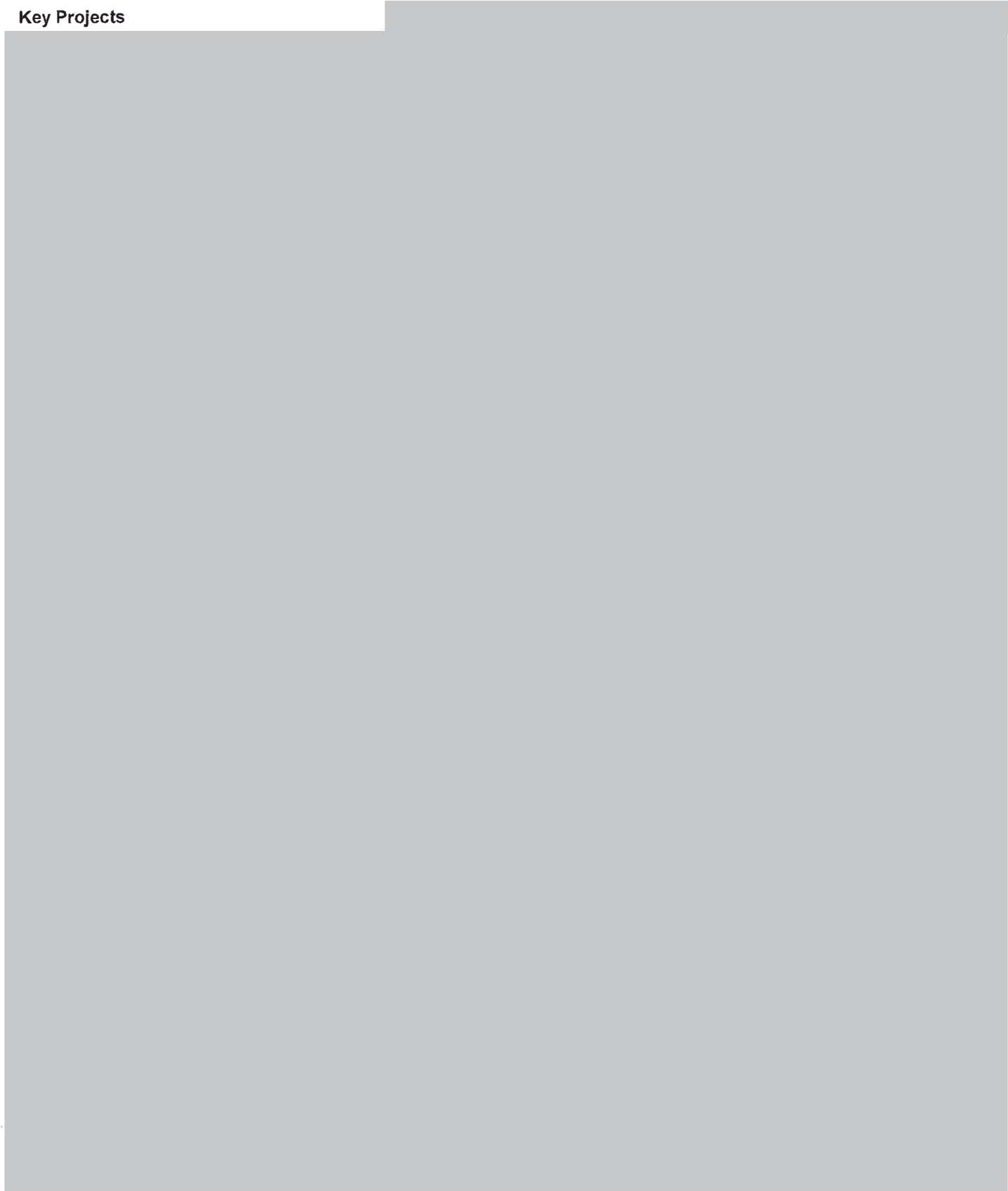
## Education

- M.S., Environmental Engineering, The University of Michigan, 1985
- B.S., Civil Engineering, The University of Michigan, 1984
- B.S., Letters and Engineering, Calvin College, 1984

## Certification and Training

- Environmental Site Assessment, ASTM
- 40-Hour OSHA Health and Safety Training for Hazardous Material Operations and Emergency Response
- Risk-Based Corrective Action
- Certified Storm Water Operator, State of Michigan

**Key Projects**



# Andrew Bielakowski

Deputy Project Manager/Cultural Resources



Mr. Andrew Bielakowski is a Project Manager and Senior Cultural Resources Specialist with more than 12 years of experience. He has managed the permitting and environmental compliance of numerous large-scale energy development and maintenance projects subject to high levels of environmental review and scrutiny.

Mr. Bielakowski has reviewed and negotiated the regulatory requirements of various federal, state, and local agencies associated with these projects in multiple states. He has managed and conducted environmental field surveys. He has prepared various federal, state, and local agency permit applications, including U.S. Army Corps of Engineers Section 404 Authorization, Section 401 Water Quality Certification, Stormwater Pollution Prevention Plans (SWPPP), Federal Energy Regulatory Commission (FERC) Certificate of Public Convenience and Necessity (Certificate)/Section 7(c) applications, applicant-prepared Environmental Assessments (EAs), and third-party Environmental Impact Statements (EISs). He has also managed or supported agency and tribal consultation efforts.

Mr. Bielakowski has worked for several U.S. federal agencies as a Historic Preservation Officer (Department of Army, National Park Service, and Forest Service). He is an accomplished archaeologist familiar with modern and traditional fieldwork techniques and equipment. He has worked on a number of challenging and remote projects and sites. Mr. Bielakowski has conducted fieldwork in the United States, Mexico, Albania, Egypt, South Korea, and the Caribbean.

Additionally, Mr. Bielakowski developed and managed an overall Archaeological Program for a niche service consulting firm. In this role, he was responsible for ensuring technical oversight and quality assurance for fieldwork and reporting; planning, supervising, and conducting cultural resource surveys; preparing project reports, research designs, scopes of work, proposals, budgets, and time/cost estimates on projects for federal, state, local, tribal, and commercial clients.

## Fields of Competence

- NEPA compliance
- FERC compliance and resource reports
- Environmental assessments and impact statements
- Federal, state, and local permitting and compliance
- Feasibility and siting studies
- Ecological and cultural resource studies
- Historic Preservation and Section 106 compliance
- Native American and Alaska Native consultation
- Archaeological survey, testing, and data recovery and mitigation
- Expert witness testimony

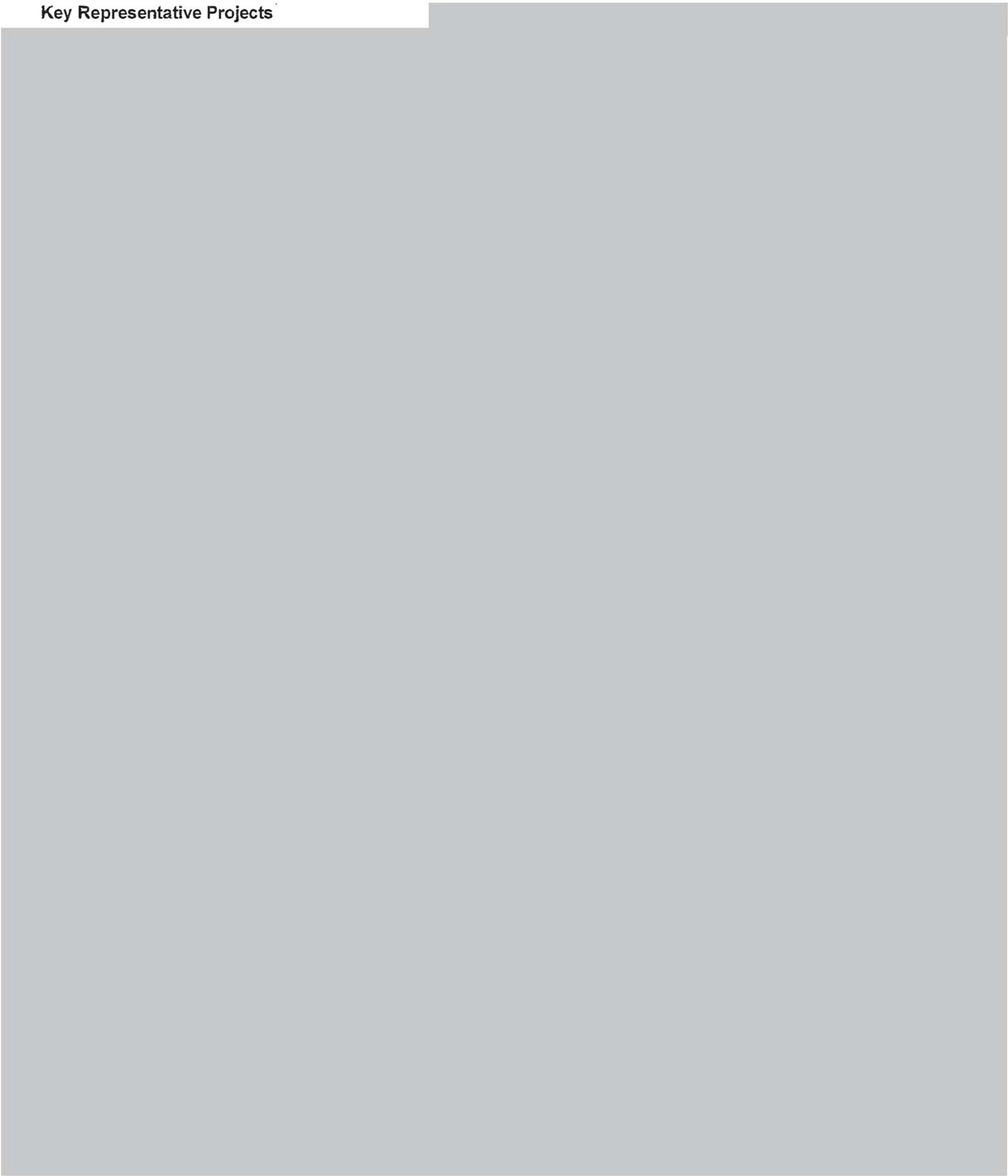
## Professional Affiliations, Registrations, and Training

- FERC Environmental Review and Compliance for Natural Gas Facilities Seminar
- Construction Erosion and Stormwater Installer Certification
- Construction Erosion and Stormwater Site Management Certification
- Design of Construction Stormwater Pollution Prevention Plans (SWPPPs) Certification
- EPA Watershed Management Certification
- NEPA Compliance and Cultural Resources
- Section 106 Review
- Section 106 Advanced Seminar: Reaching Successful Outcomes in Section 106 Review
- Identification and Management of Traditional Cultural Places
- Native American Consultation
- Working Effectively with Tribal Governments Certification
- OSHA 40-hour HAZWOPER General Site Worker Training
- Society for American Archaeology (SAA)
- American Anthropological Association (AAA)
- Meets U.S. *Secretary of the Interior's* (36-CFR-61) Professional Standards for Historic and Prehistoric Archaeology.

## Education

- M.A., Archaeology, University of Toronto, Toronto, Canada, 2000
- B.S., B.A., Anthropology, Classical Civilizations, Philosophy, Loyola University, Chicago, Illinois, 1998

**Key Representative Projects**



# David W. Blaha, AICP

NEPA Specialists



Mr. Blaha has 30 years of experience in environmental impact assessment, natural and cultural resource management, and land planning for local, state, regional, and federal governments in the U.S. and internationally. He is thoroughly familiar with the regulatory/procedural requirement of NEPA and has extensive experience with Section 7 of the Endangered Species Act, Section 106 of the Natural Historic Preservation Act, and Executive Orders for wetlands, floodplains, and environmental justice. He has extensive experience in multi-media permitting of large (>\$1billion) and often controversial infrastructure projects. Special expertise in evaluating energy, mining, military, water resource, telecommunication, transportation, and land use projects.

## Professional Affiliations & Registration

- American Institute of Certified Planners, 1986
- American Planning Association
- American Water Resources Association
- National Association of Environmental Professionals

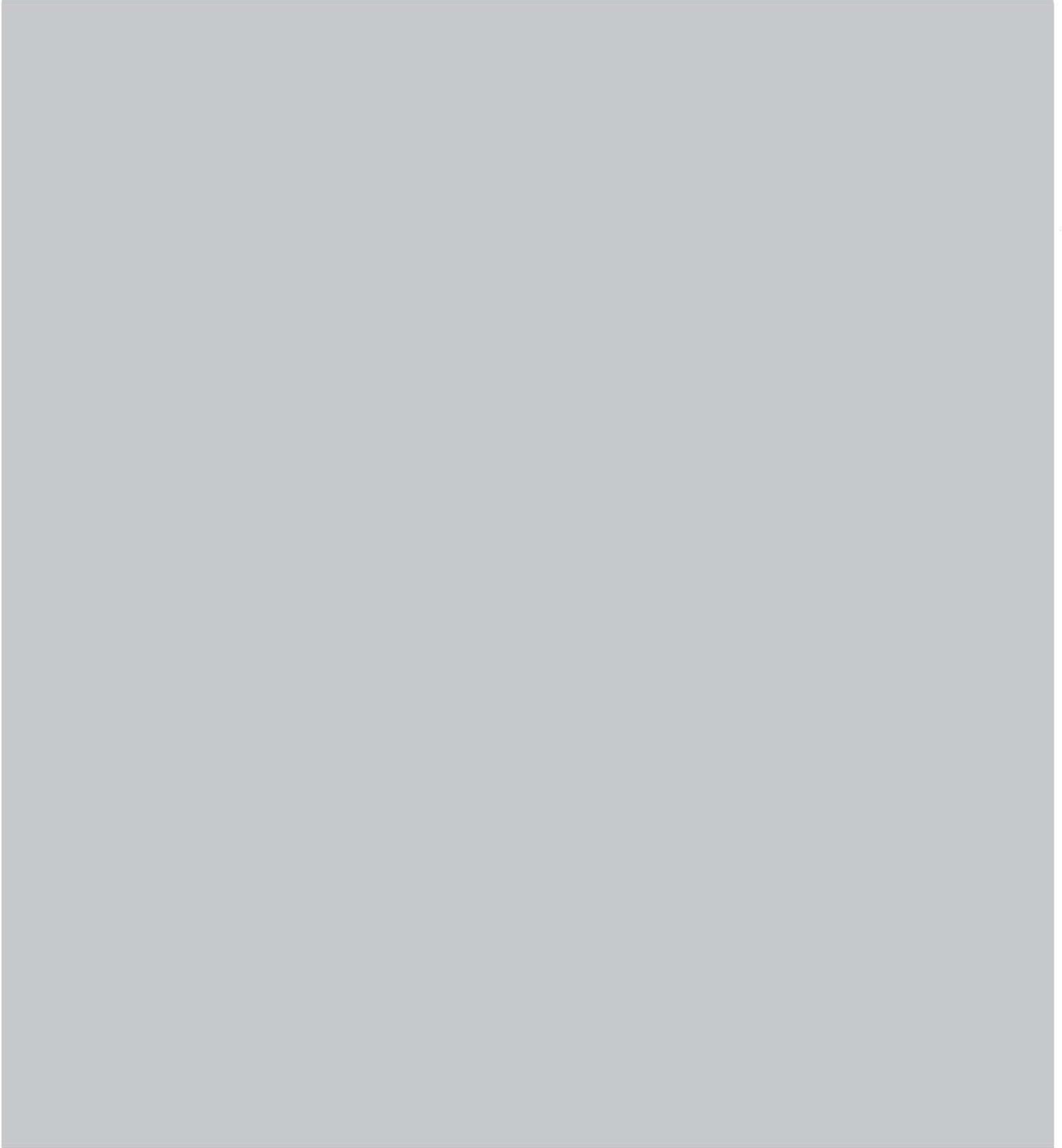
## Fields of Competence

- Environmental impact assessment for a wide variety of projects including pipelines, military operations, mining, airports, reservoirs, marinas, hydroelectric power projects, LNG import terminals, gas pipelines, highways, transit, housing, parks, and industrial development.
- Water resources, including water supply planning and water quality management. Analyses of sources, quantities, types, transport, and fate of pollutants. Skilled in the development of watershed and wellhead protection plans for surface and groundwater supplies and comprehensive river basin studies.
- Wetland ecology, including wetland delineation, functional assessments, mitigation design, permitting, and protection planning.

## Education

- Master of Environmental Management, Duke University, 1981
- Bachelor of Arts, Biology, Gettysburg College, 1978

## Key Projects



# Jeannette Blank

Wetlands, Terrestrial Vegetation, Wildlife



Jeannette has 14 years of experience as a biologist, and compliance and permitting specialist for multi-disciplinary projects throughout Alaska and the Rocky Mountain west. She has conducted numerous vegetation surveys and functional assessments for wetland, riparian, sage-steppe, grassland and mixed forest communities within arid, temperate and arctic ecosystems.

Jeannette also has expertise in environmental permitting and compliance, with special emphasis on the Federal Clean Water Act and National Environmental Policy Act. She has T/E Species evaluation experience. Other areas of expertise include wetland mitigation, contaminated soil investigations, revegetation plans, water quality, wildlife studies, and project health and safety.

Through her biological and permitting work, she has a strong foundation in agency collaboration at the federal, state and local level. At the federal level, she has worked closely with FHWA, FERC, EPA, USCOE, USFWS, NPS, USFS, USDA, DOD, NOAA, and BLM. At the state and local level, she regularly works with natural resource agencies who oversee water quality, water quantity, vegetation, wildlife, and habitat conservation.

## Fields of Competence

- Wetland delineation & functional assessment
- Wetland mitigation
- Plant ecology & revegetation
- Permitting & Compliance (Clean Water Act)
- Biological Assessments & Effects Determinations (National Environmental Policy Act)
- T/E Species Studies
- Treatment wetlands
- Saline & sodic soils
- Water quality
- Project health & safety
- GIS

## Education

- MS, Earth Science  
Montana State University, 2004
- BS, General Science (Biology emphasis)  
University of Oregon, 1997

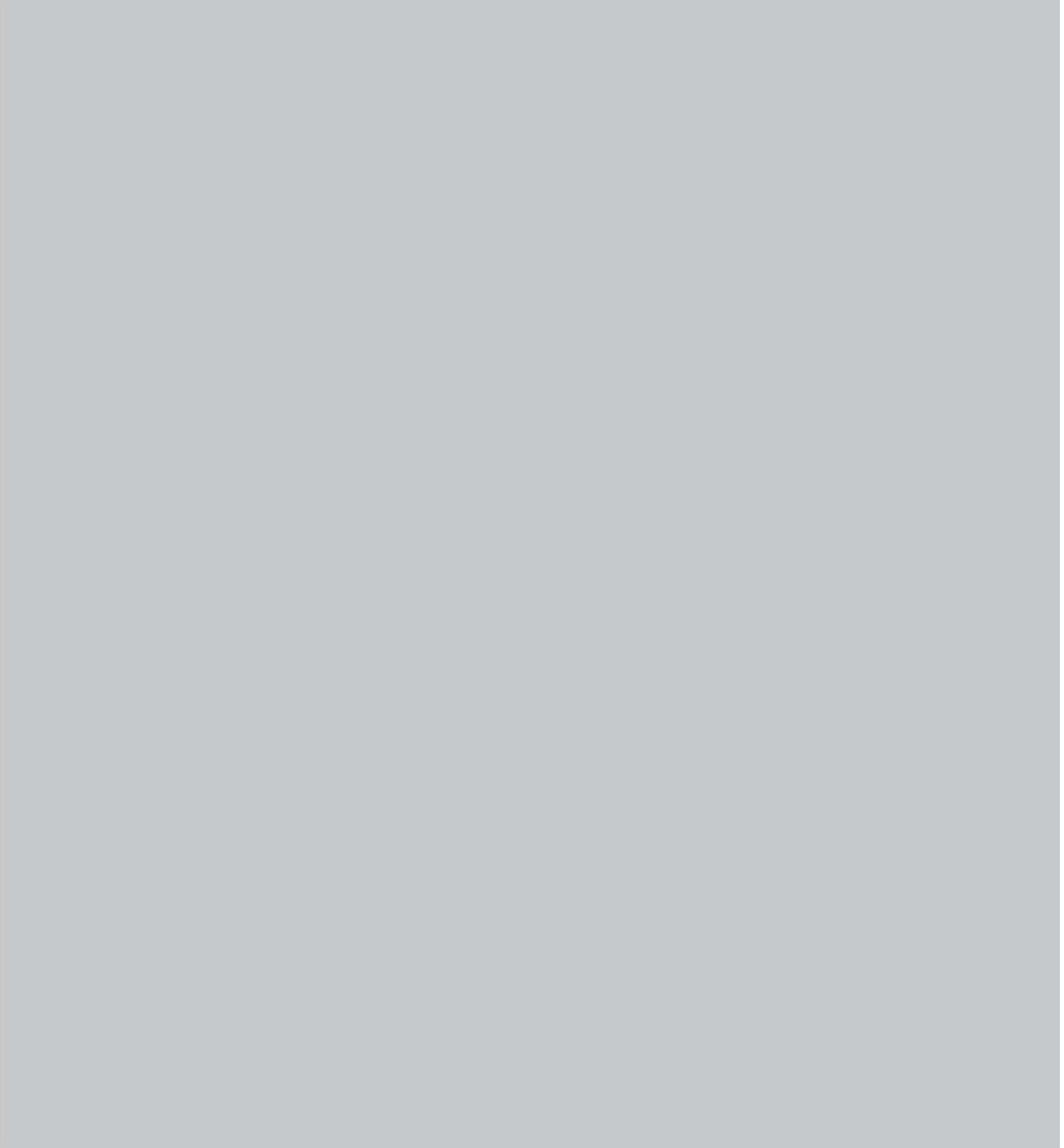
## Training and Certifications

- Constructed Wetlands for Water Quality Treatment (Institute for Water Quality Education)
- Wetland Delineation (Wetland Science Institute)
- Wetland Regulations: Federal, State and Local Regulations & Permitting in MT (MDEQ/MSU)
- BLM Certified Wildlife Biologist
- HAZWOPER
- DOT/IATA

## Key Industry Sectors

- Mining
- Oil & Gas
- Power
- Transportation & Construction

## Key Projects



# Alan J. Finio

## NEPA Specialists



Mr. Finio is a Senior Consultant in the Impact Assessment and Planning practice at ERM. He has more than 25 years of management and technical experience with permitting, environmental impact assessment, habitat restoration, natural resource inventories, monitoring and evaluation of terrestrial, freshwater, coastal and offshore ecosystems; risk assessment support; wetland delineations, analysis, permitting, and impact mitigation; and site selection studies. Extensive experience with federal regulatory processes including National Environmental Policy Act (NEPA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), National Pollution Discharge elimination System (NPDES), Federal Energy Regulatory Commission (FERC) and Resource Conservation and Recovery Act (RCRA) regulations, and related state environmental regulations. His planning project experience includes zoning, land use, coastal zone management, and socioeconomic analysis. He has developed emergency plans for dams, natural disasters, and Spill Prevention control Discharge Prevention Containment and Countermeasure (DPCC) plans and applications, and has extensive experience with biological, soil, water, and sediment sampling.

### Fields of Competence

- Environmental impact assessment
- NEPA and state-equivalent NEPA compliance
- Project permitting, documentation and compliance
- Ecological baseline studies and habitat restoration
- Planning, land use and coastal zone management
- Emergency planning
- Biological, soil, water, sediment sampling
- Cumulative impact assessment

### Education

- B.S., Environmental Science, Biology, Long Island University, 1985

### Credentials

- Wetland Delineation Training (40-hours), Wetland Training Institute, Inc., 1989
- FERC Natural Gas Pipeline Environmental Compliance Training, FERC, 1996 and 2002
- EPA Course 165.5: Hazardous Materials Incidence Response Operations, US EPA, 1986
- OSHA 40-hour Health and Safety Training: Hazardous Waste Operations, 29 CFR 1910.120: WCC, 1988 and 1991; FWENC 2002
- Site Management Training, HLA, 1995; FWENC, 2002
- NEPA Process Training, Shipley Group, 2002
- USCG NEPA Training, Shipley Group, 2004 and 2005
- USCG Natural Resources Management Training, 2005

### Publications and Presentations

*Wetlands and Remediation.* New Jersey Environmental Law Letter, October 1993, vol. 2, no. 8.

*Ecological Risk Assessment.* New Jersey Environmental Law Letter, February 1993, vol. 1, no. 12.

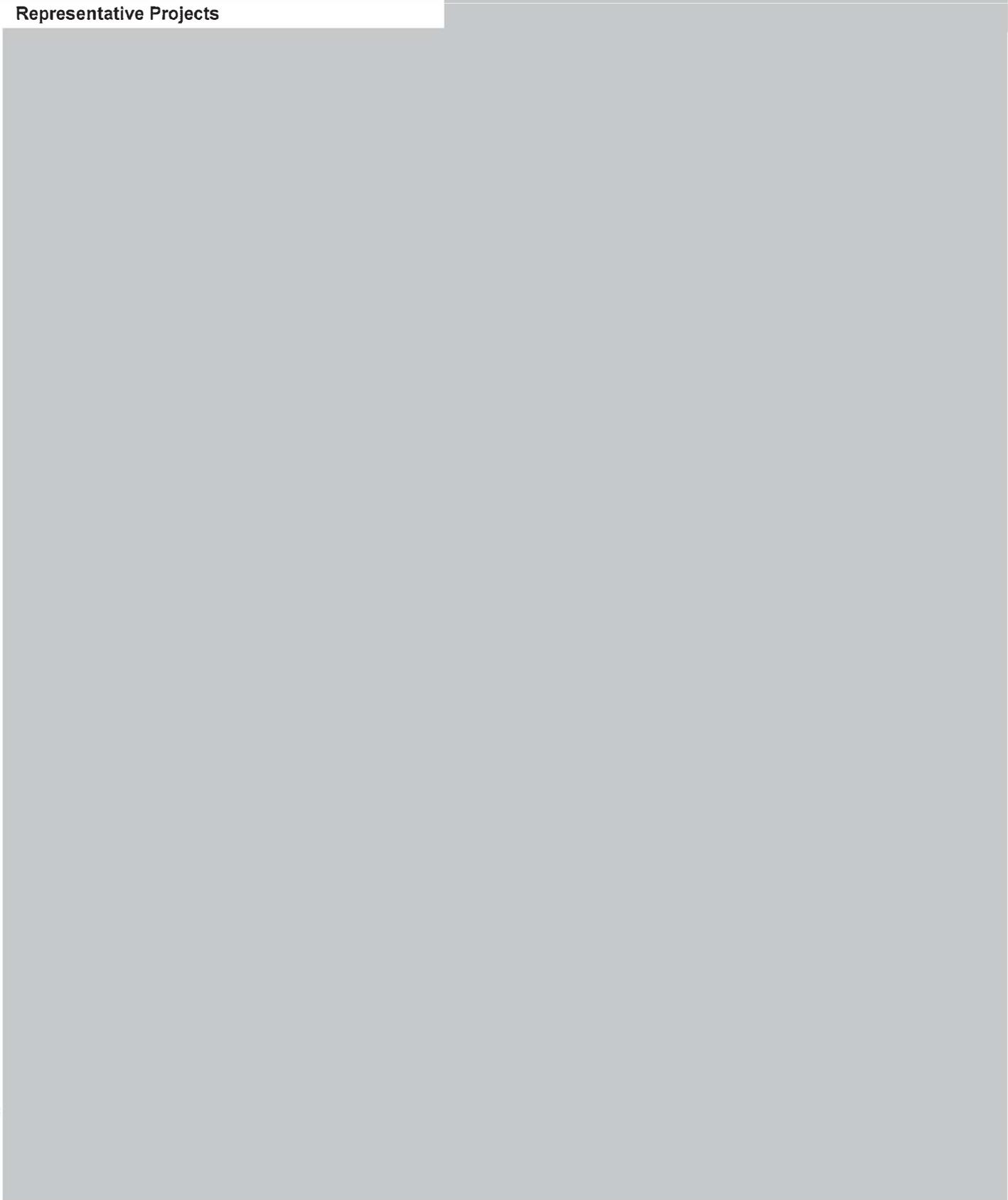
*Ecological Risk Assessment.* Presentation to the PENJERDEL Council, Environmental Improvement Committee, March 18.

*Ecological Risk Assessment - A Remediation Cost Control Tool.* Presentation to the Chemical Industry Council (CIC) of New Jersey, Regulatory Conference, June 28, 1995.

April 2005 National Association of Environmental Professionals (NAEP) Conference - Bridging Competing Environmental Interests. Using the NEPA Process to Meet New Challenges: Presentation -Adapting the NEPA Process to the Deepwater Port LNG Port Licensing. - Presentation Summary U.S Department of Energy, National Environmental Policy Act, Quarterly Report, Lessons Learned.- June 1, 2005, Issue No. 43. <

[http://nepa.energy.gov/documents/June\\_2005\\_LLQR.pdf](http://nepa.energy.gov/documents/June_2005_LLQR.pdf)

**Representative Projects**



# James E. Graham, P.G.

Hydrogeologist



Mr. James E. Graham is a Partner with ERM and based in the

Mr. Graham has over 28 years of experience nationwide managing the permitting, compliance, investigation and remediation of oil and gas facilities (pipelines, terminals, bulk oil plants and service stations), proposed and operational wind energy facilities and expansions of existing wind energy facilities. His experience includes: management of federal, state, municipal and private sector projects at rail yards, nuclear and coal-fired power plants, trucking terminals, airports, mines, water supply wellfields (wellfield management, wellhead protection programs, pumping tests, aquifer tests, specific capacity tests, hydrogeologic evaluations, etc.), military bases, warehouse complexes, manufacturing plants, steel foundries, landfills, agricultural plants and petroleum terminals, pipelines and retail stations. His other experience includes: NEPA permitting of a commercial 144 MW wind energy project on BLM-administered and privately leased properties; permitting of 1,000 MW wind energy facility expansion project; assessment, evaluation, investigation and remediation of multiple wind energy facilities nationwide; preparation of an environmental impact statement (EIS) for a 640 ton/day solid-waste mass burn incinerator facility; evaluation of permitting for deep well injection of hexavalent chromium impacted ground water; and management of NPDES permit and acid rock drainage (ARD) at former underground sulfide mine. He has also managed five state contracts for the States of Kansas and Missouri related to regulatory compliance, permitting, geologic assessment, hydrogeologic investigation and remediation (soil and ground water) of various industrial, commercial, rural, agricultural and retail properties. Other experience includes feasibility studies, risk characterization, litigation support (despositions and expert witness

testimony), stormwater permitting and preparation of SPCC Plans.

## Fields of Competence

- NEPA and regulatory compliance
- Environmental Impact Assessment
- Investigation and remediation of oil and gas sites
- Wind energy facility permitting
- Protocol plans for biological studies
- SPCC Plans and SWPP Plans
- Public outreach, open houses and public meetings
- Development Plans, Decommissioning Plans
- Interagency coordination and negotiation
- Brownfield assessments and development
- Hydrogeologic investigations and evaluations

## Education

- B.S. in Geology, Texas Tech University, Lubbock, Texas, 1984

## Registrations

- Registered Professional Geologist (Kansas, Missouri and Wisconsin)
- Risk-Based Corrective Action Certification (Kansas and Missouri)

## Key Industry Sectors

- Oil and Gas (terminals, pipelines, stations)
- Energy (wind, coal and nuclear)
- Water supply (industrial and municipal)
- Transportation (rail, trucking and air)
- Mining and Manufacturing

## Publications

- Presentations and papers available upon request

## Key Projects

# Herbert Pirela

## Soils and Geology



Dr. Pirela has over 20 years of experience in designing, conducting, and managing major environmental investigations and permitting projects. The major focus of his work has been on impact analyses for soils and geology, and includes environmental assessments under the National Environmental Act (NEPA) and other United States and international regulations. Dr Pirela has extensive experience with Federal regulatory processes including Federal Energy Regulatory Commission (FERC) application requirements, and related state environmental regulations. He has been the lead soils and geology scientist in the preparation numerous EIAs under FERC fillings.

### Fields of Competence

- Environmental, social, and health impact assessment (ESHIA)
- ESHIA project management
- World Bank/IFC standards and guidelines
- Project permitting and documentation
- Alternatives analysis
- Cumulative impact assessment

### Credentials

- Ph.D, Soil Chemist (Soil Scientist), Iowa State University, 1987
- M.Sc, Soil Fertility, Colorado State University, 1982
- B.S, Agronomy -Soil Resources and Conservation-Colorado State University, 1980

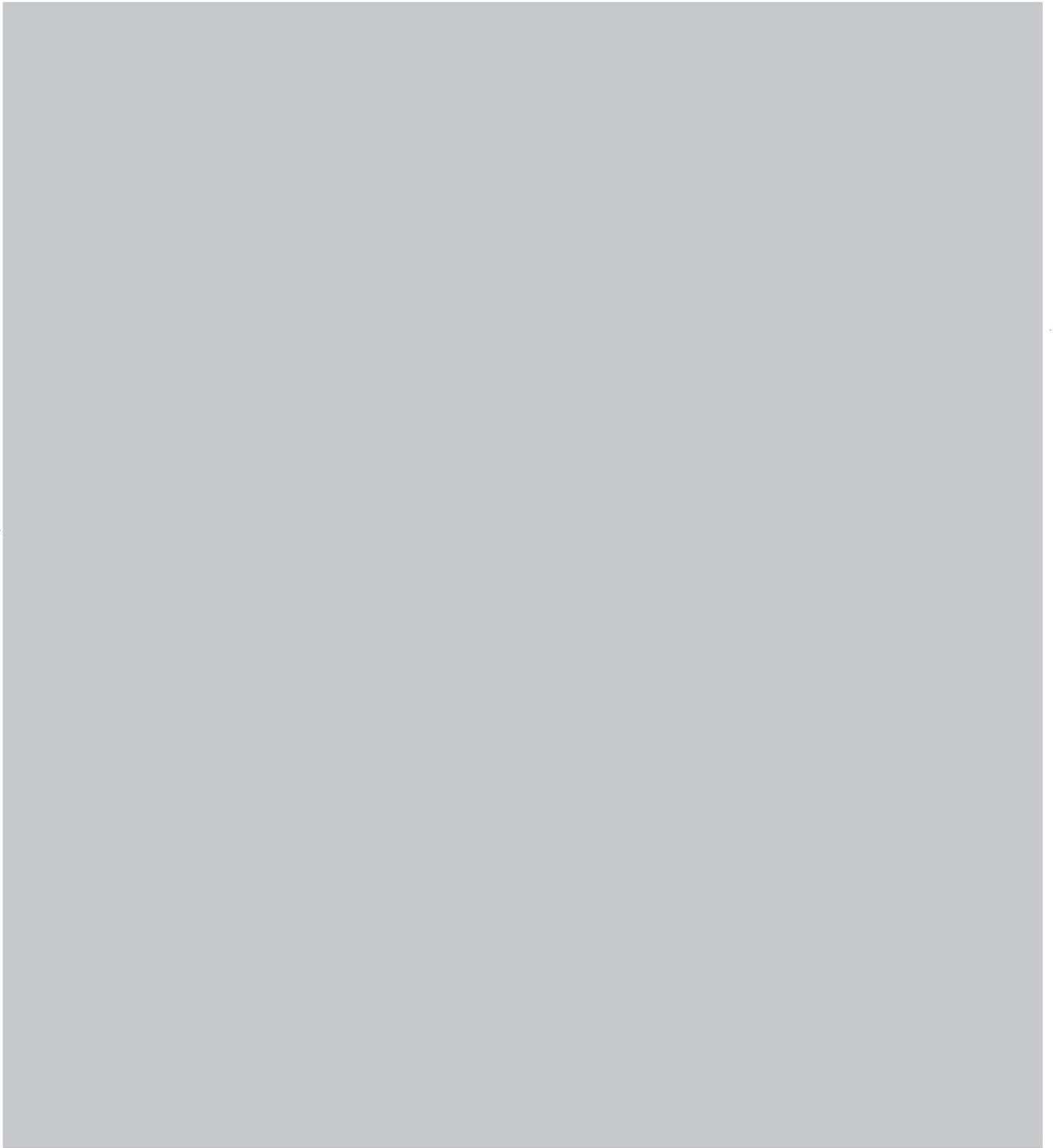
### Professional Affiliations

- Society of Environmental Toxicology and Chemistry
- Soil Science Society of America

### Honors and Awards

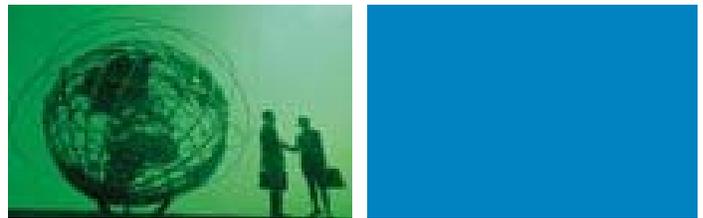
- Graduate Research Excellence Award, Iowa State University, 1987.

### Key Projects



# Kurtis K. Schlicht

Wetlands, Terrestrial Vegetation, Wildlife



Mr. Schlicht has over 18 years experience serving industry, private businesses and government based clients in delivering project specific knowledge related to environmental and regulatory compliance. He has provided a wide range of consulting services including NEPA compliance for multiple business sectors including oil and gas, power, and pipeline all in support of the EA/EIS processes.

Over the past ten years Mr. Schlicht has managed projects in Impact Assessment and Planning responsible for completing FERC 7(c) filings, Nuclear Regulatory Commission Combined Operating License Applications (COLA), supporting over 22 power facilities through the CWA 316(b) regulatory framework, wastewater permitting, wetlands permitting and Section 7 Endangered Species Act studies. He brings a strong regulatory background working directly with federal agencies such as the NRC, FERC, USACE, USCG, USFWS, US EPA, DOT, DOE, and NOAA, and state agencies such as the TCEQ, TxGLO, TxRRC, LDEQ, LDNR, and LDWF. Mr. Schlicht has project experience working in multiple states including: Texas, Arkansas, Louisiana, Mississippi, Oklahoma, Alabama and Michigan.

## Fields of Competence

- Biological monitoring
- FERC 7(c)
- NEPA (EA and EIS Development)
- Permitting (USACE 404, Section 10, CWA 401)
- Environmental assessments
- NPDES permitting
- Threatened and Endangered Species Studies – Section 7 ESA compliance
- Wetlands determination and delineation studies

## Education

- BS, Biology, Texas Tech University, 1990

## Professional Affiliations

- Wetland Training Institute
- Galveston Bay Estuaries Program
- TX Corporate Wetlands Restoration Partnership-Coastal America
- Texas Chapter of the American Fisheries Society
- Galveston Bay Foundation

## Training and Certifications

- Texas A&M Extension Program - Plant Identification Class
- Wetlands Delineation
- General Site Training Required by OSHA 29 CFR 1910.120
- Contractors Safety Council Basic Plus Training
- Contractors Safety Council Site Specific - Oxy Ingleside Site
- Completed Federal Energy Regulatory Commission Environmental Compliance and Environmental Report Preparation Seminar
- USACE Wetland Permitting Seminar

**Key Projects**



# Benjamin Sussman, AICP

## Socioeconomics and Land Use



Mr. Ben Sussman is a consultant with ERM based in . He has more than thirteen years' experience in impact assessment, local and regional comprehensive planning, transportation planning, and urban design. He has prepared and managed Environmental Impact Statement (EIS) and Environmental Assessment (EA) documents for natural gas development projects, pipelines, and terminals, hydroelectric projects, military facilities and airspace, and other facilities. He specializes in analysis of impacts on land use, transportation, visual/aesthetic, and socioeconomic resources (including environmental justice studies).

Mr. Sussman has prepared comprehensive plans and community plans for small and large cities and unincorporated communities, with emphasis on the linkages between land use, growth, and water resources. As a transportation planner, Mr. Sussman has evaluated vehicular and rail transportation options for industrial, commercial, and residential land uses. He has prepared EIS documentation in support of FTA New Starts authorizations, and also has considerable airport planning experience.

Mr. Sussman places emphasis on public presentations and public engagement as a critical part of impact assessment and planning projects. He is adept at managing public meetings, stakeholder interviews, and other forms of information gathering. He also is an accomplished GIS user, and employs GIS for both display (i.e., maps) and analysis in a variety of projects.

### Professional Affiliations & Registrations

- American Institute of Certified Planners (2003)
- American Planning Association

### Fields of Competence

- Environmental and Social Impact Assessments (ESIA, ESHIA, EIS)
- NEPA
- Comprehensive planning/land use planning
- Transportation planning
- Brownfields
- Policy and research
- Geographic information systems

### Key Industry Sectors

- Mining
- Oil and Gas
- Transportation
- Government

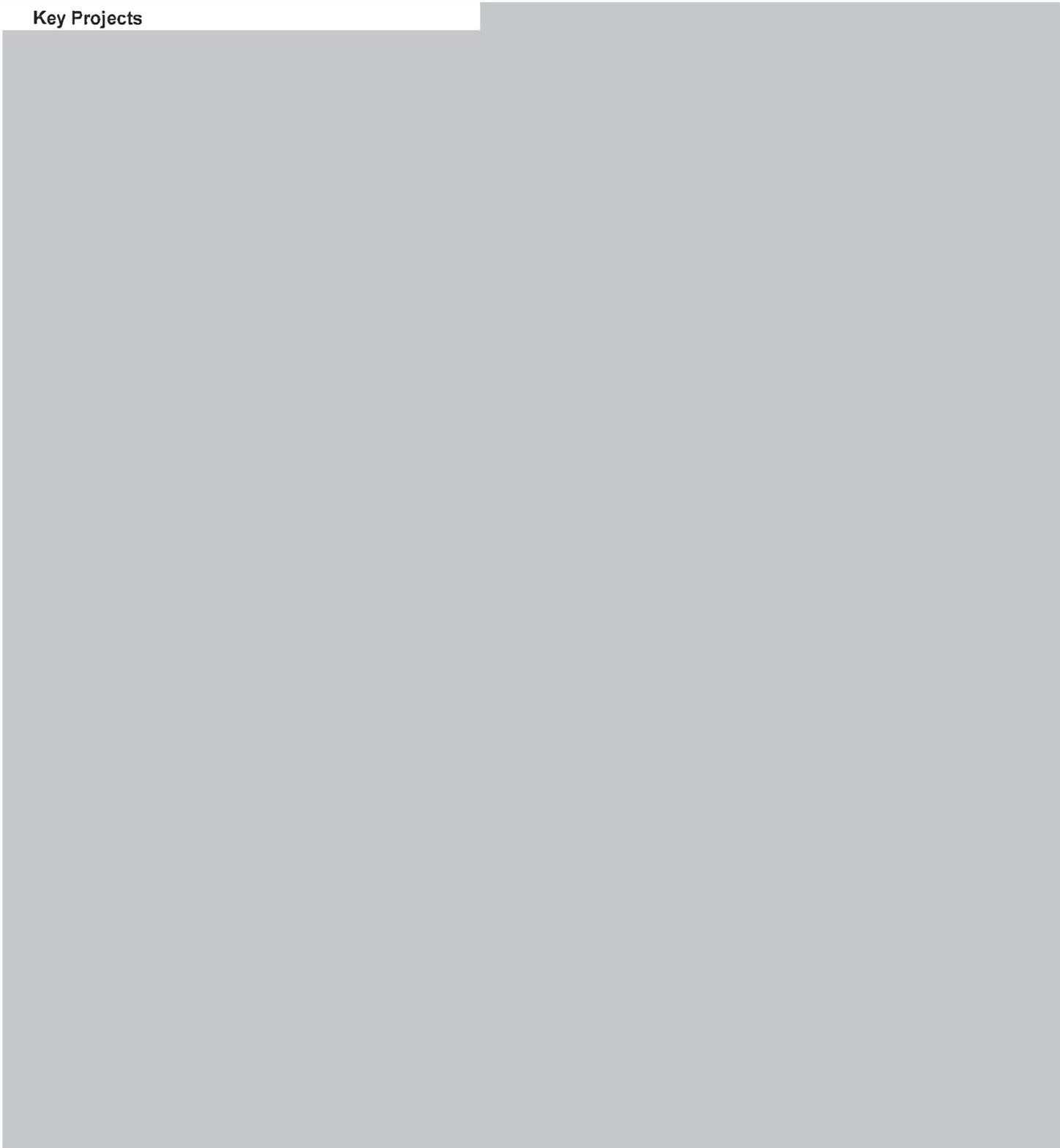
### Education

- MCRP (City and Regional Planning), Georgia Tech, USA, 2002.
- B.S., Science, Technology, and Society, Stanford University, USA, 1998.

### Languages

- English, native speaker
- French, proficient
- Spanish, basic

**Key Projects**



# Dave Trudgen

Senior Fisheries Scientist



Mr. Trudgen brings over 36 years of environmental experience to all of his projects. He specializes in managing interdisciplinary environmental programs and designing and conducting field studies. He has broad experience with state and federal regulations including the National Environmental Policy Act (NEPA), Endangered Species Act, Marine Mammal Protection Act, Essential Fish Habitat evaluations, Clean Water Act, Migratory Bird Species Act, State of Alaska Fish and Game Regulations and State of Alaska Water Quality Regulations. He has designed and implemented programs for fish evaluations along the 800 mile TAPS pipeline, managed teams of scientists collecting baseline fish, benthic, plankton, sediment and physical riverien habitat parameters for a variety of projects, and has lead teams of subcontractors during the production of several environmental assessment documents. He has worked with diverse groups in the public and private sectors to help resolve environmental and biological study issues.

Mr. Trudgen has recently managed: the production of a Permitting Plan, USACE Section 404 permit, pipeline right-of-way permit application, and update of an existing Environmental Report (equivalent to a NEPA Environmental Assessment in content and organization) for ; wetlands delineations and wildlife sensitive habitat evaluations for the Alaska Natural Gas Development Authority (ANGDA) proposed gas pipeline from Fairbanks to Beluga, Alaska; biological study oversight and production of an Environmental Report for the , working closely with U.S. Minerals Management Service to produce the Biological Report in a format and style that could be directly imported into a supplemental EIS; has been the lead on a number of teams conducting environmental and permitting analysis for nearly every in-state and international (Canada) natural gas pipeline route alternatives; and was a principle author for

preparation of two environmental reports summarizing the potential effects of Strategic Reconfiguration of the Trans-Alaska Pipeline System (TAPS) and the Valdez Marine Terminal (VMT) in which the environmental reports were developed, organized and written with all EA components and submitted to BLM for use as the basis of the project's EAs. Mr. Trudgen understands the intricacies of construction and operation of long pipelines.

## Professional Affiliations & Registrations

- The Wildlife Society
- The American Fisheries Society

## Fields of Competence

- Freshwater Habitats of Anadromous and Resident Fish
- Environmental Impact Assessment
- NEPA Documentation and Compliance
- Endangered Species Act Compliance
- Regulatory Permitting and Compliance
- Oil Spill Response and Training
- Project Management and Design

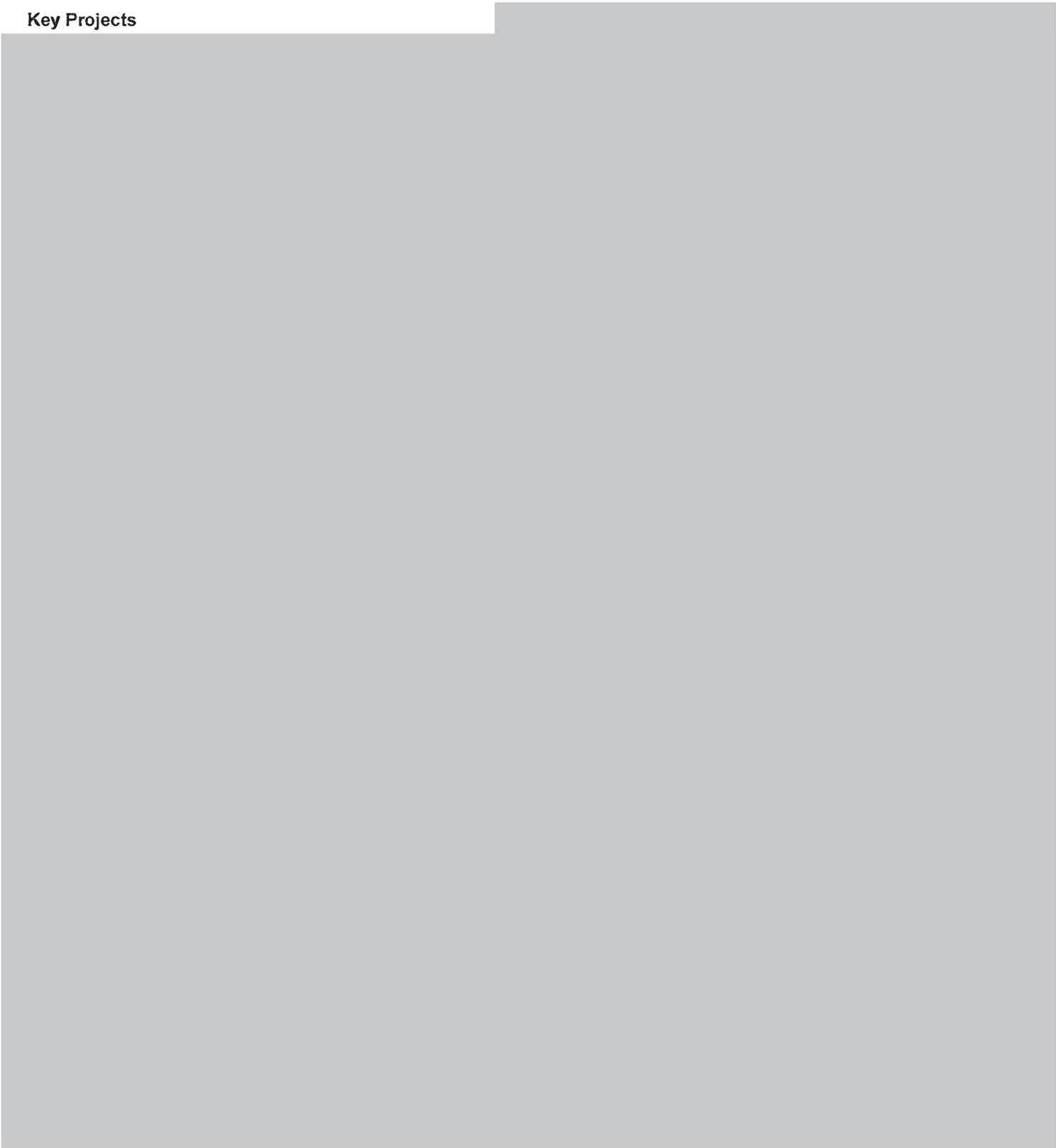
## Education

- Secondary Education, University of Alaska Anchorage, 1983-1984
- BS, Wildlife Biology and Management, Michigan State University, 1976

## Key Industry Sectors

- Government
- Oil & Gas
- Mining

## Key Projects



# Jeff Williams

## Fisheries and Aquatic Habitat



Mr. Williams has over 18 years of experience in the aquatic biology and natural resource management field. Specialties include field assessments, permitting compliance, and EIS/ EIA preparation in support of oil/gas pipelines, alternate energy, telecommunications, and mining projects; Most recently Mr. Williams has managed permitting compliance issues for a refined petroleum pipeline client in the downstream sector of the pipeline business where permitting for pipeline maintenance projects was required for wetland, stream, and road crossings impacts. Mr. Williams has experience with federal, state, and local regulatory requirements in the states of Illinois, Indiana, Michigan, Minnesota, Ohio, and Pennsylvania.

### Fields of Competence

- Oil/ gas Pipeline Regulatory Assurance in IL, IN, MI, PA, and OH (federal, state, and local)
- Oil/ gas Pipeline SESC Plan Design and Inspection Experience for Stream and Wetland Crossings
- Oil/gas Pipeline Siting for New Construction
- Oil/gas Pipeline Wetland, Stream, and T&E Species Assessments
- EIS/ EIA preparation and chapter writing
- Environmental Baseline Assessments: freshwater fish, macroinvertebrates, mussels, and habitat
- Intensive GPS User Capabilities in Support of Natural Resource Management Projects
- Demolition oversight- Air monitoring
- Waste Manifesting in support of oil spill decontamination and recycle/ waste efforts

### Credentials

- Pre-Medical Curriculum, Kalamazoo College, 1988 - 1992
- B.S., Biology, Grand Valley State University, 1994

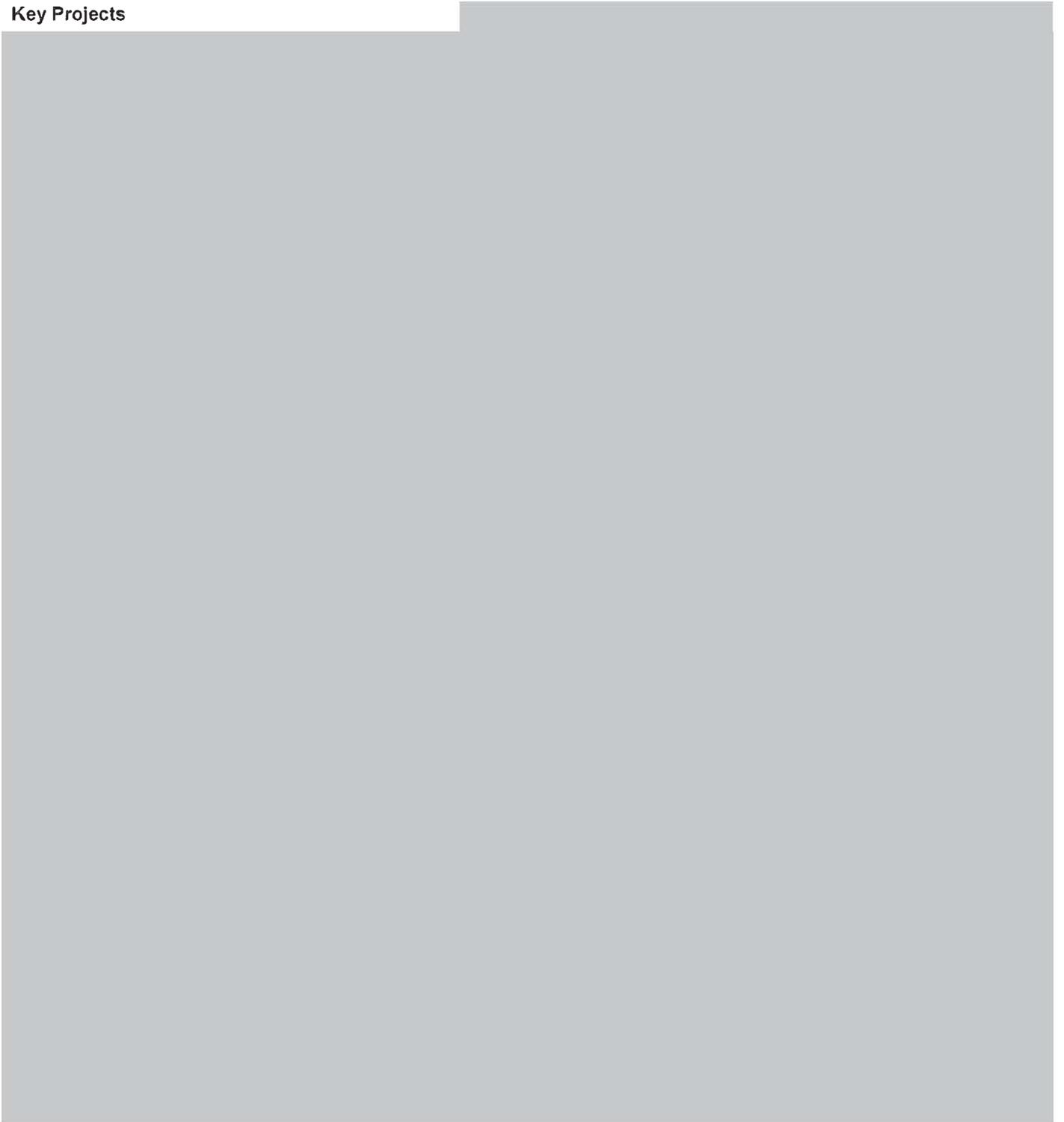
### Professional Affiliations

- Society of Wetland Scientists
- Michigan Wetland Association

### Certification and Training

- Army Corps of Engineer Wetland Delineation and Management Training, April 2006.
- Institute of Botanical Training Wetland Flora Class 0607, 32 - Hour Course, June 2006.
- Completed 72 Hours towards Society of Wetland Scientist Professional Scientist Certification.

## Key Projects



# Daniel A. Yamashiro, P.G.

## Pipeline Risk/Failure Analysis



Supervised, managed, and participated in assessments and remediation projects in the United States, Europe, and Latin America for 30 years. Directly involved with on-site restoration of ground water, surface water and soil utilizing integrated environmental equipment systems and applying innovative and cutting edge technology. Developed pipeline leak risk assessments and high consequence area analysis for pipeline routing and pipeline reconfiguration. Assessed potential marine spill consequence due to marine traffic in the Aleution Islands.

Past manager on projects involving large-scale product recovery systems, above-ground and in-situ bioremediation, and natural attenuation. Conducted geophysical evaluations as part of stratigraphic analyses to assess ground water and product migration pathways in the subsurface. Conducted hydrogeologic studies for semiconductor, petroleum, mining companies, and local and state governments. Managed projects concerning human health risk assessments.

Project management experience ranges from sampling underground storage tank (UST) pits to designing and supervising the installation of complex integrated remediation systems applying chemical oxidation, bioremediation, as well as environmental forensics to distinguish source areas. Project consultant on long-term ground water monitoring programs under RCRA, VCP, Compliance and Enforcement authority. Conducted project management training programs emphasizing budget control, on-time delivery, and maintaining the agreed scope of work.

Developed assessment programs and remedial strategies for mining facilities, petroleum terminals and refineries. Managed one of the largest UST petroleum-related clean-up projects in Arizona. Developed and implemented the

remedial strategy for one of the largest product releases (greater than 600,000 bbls) in Texas. Experience involved PCE, TCE, DCA, acetone, methylene chloride, petroleum, and other VOC releases to the environment

### Registration

- Registered Professional Geologist in the State of Texas
- Registered Professional Geologist in the State of Tennessee

### Fields of Competence

- Project management
- Pipeline leak assessment and HCA analysis
- Pipeline release fate assessment
- Stratigraphic analysis and facies analysis
- Downhole wireline log analysis
- Environmental site assessments
- Soil and ground water remediation
- In-situ and above-ground bioremediation
- Monitored natural attenuation
- Product/DNAPL evaluation and recovery

### Education

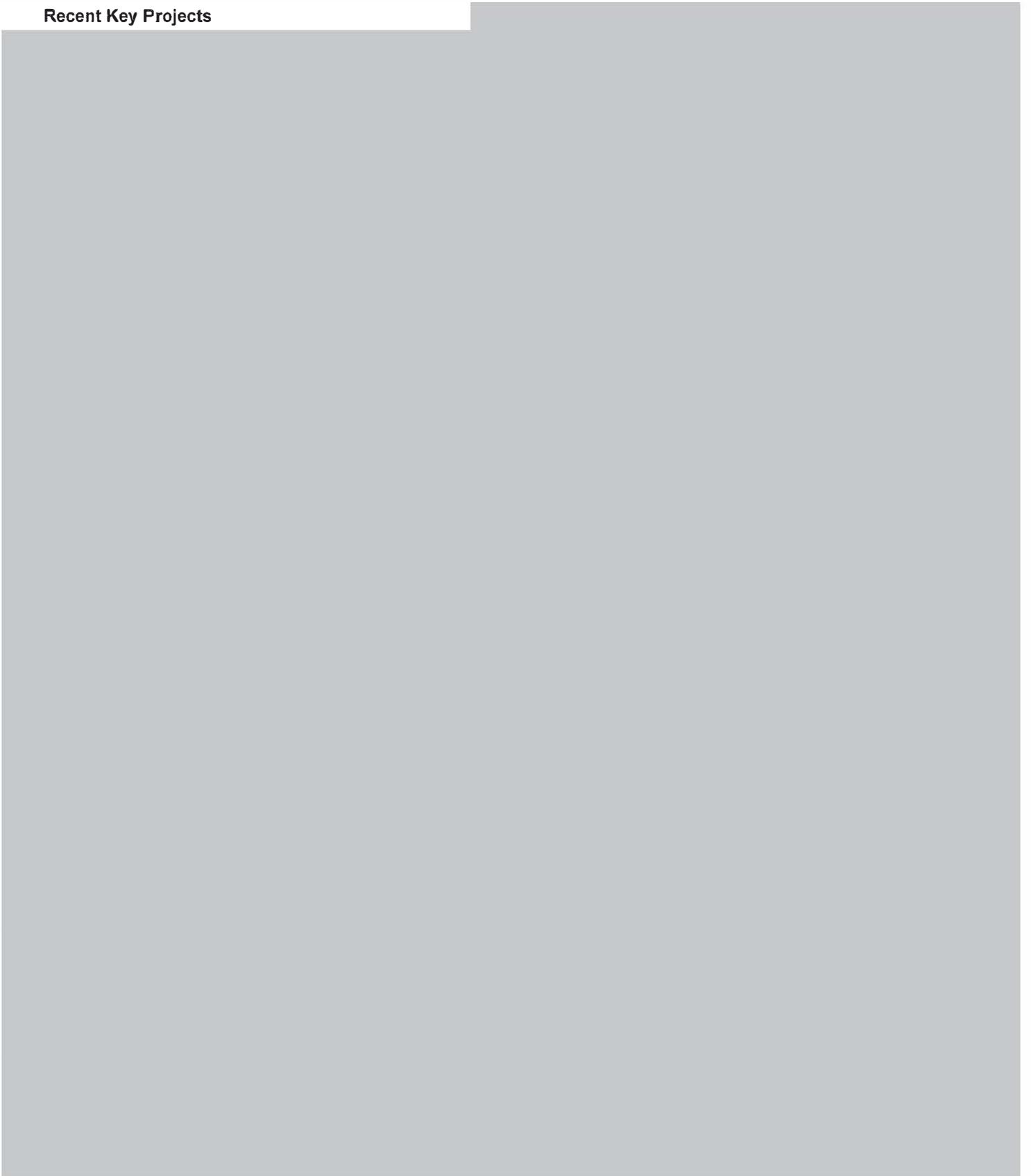
- M.S. Geology, California State University, 1986
- B.S. Geology, California State University, 1982

### Countries Worked

- United States
- United Kingdom
- Belgium
- Bermuda
- Barbados
- Brazil
- Italy
- Germany
- Mexico
- Netherlands
- Portugal
- Sweden



## Recent Key Projects



# Yinka Afon, P.E.

Greenhouse Gas, Air Quality, and Noise



Mr. Afon is ERM Regional Technical Discipline Lead for acoustics based in . Yinka has over 9 years of consulting experience in natural and physical resources management, impact assessment and planning, ambient noise measurements, noise and vibration modeling and control, air quality and greenhouse gas evaluations, air conformity analysis, natural hazards, public safety, and regulatory compliance (IFC EHS Guidelines and Performance Standards, NEPA compliance).

Mr. Afon has experience preparing EAs, EISs, and ESIA's for multiple linear infrastructure (pipelines and transmission lines) and oil and gas projects. Aside from the experience in the United States, Yinka has international ESIA experience in countries such as Suriname, Dominican Republic, Guatemala, Argentina, Chile, Bahamas, Greenland, Guinea, and Nigeria. Yinka was one of the Environmental Leads for the preparation of a FERC application for the development of 14-mile natural gas pipeline across Iowa, Minnesota, and Nebraska.

## Professional Affiliations & Registrations

- Registered Professional Engineer #33760, MD, 2009.
- Member of the American Institute of Chemical Engrs
- Member of the Air & Waste Management Association

## Fields of Competence

- Impact assessment and planning
- Noise and vibration
- Air quality, greenhouse gases, and meteorology
- Water quality
- Natural hazards
- Regulatory compliance

## Key Industry Sectors

- Pipelines and transmission lines
- Oil and Gas
- Power Generation
- Mining and metals

## Education

- M.S.E., Environmental Process Engineering, Johns Hopkins University, Baltimore, 2004
- B.S., Chemical Engineering, Ladoke Akintola University of Technology, Nigeria, 2001

## Languages

- English (native speaker) and Yoruba

## Publications

- Afon Y. and Ervin D., *An Assessment of Air Emissions from Liquefied Natural Gas Ships Using Different Power Systems and Different Fuels*. Journal of Air & Waste Management Association No.3, Vol 58, 404 - 411 (2008).

**Key Projects**

