



Submitted to:
The City of Key West

Qualifications for
General Engineering Services
(Solid Waste, Coastal, and Environmental Engineering Services)
August 1, 2012 RFP 12-005

Submitted by:
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In cooperation with

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1 Company Profile

Shaw Environmental & Infrastructure, Inc. is eager to support the City of Key West under its General Engineering Services contract for the disciplines of Solid Waste Engineering, Coastal Engineering, and Environmental Engineering. Shaw brings a unique set of benefits:

- ✓ History of successful service to Florida cities under engineering contracts
- ✓ Local offices in south Florida
- ✓ ✓ Proven responsiveness with good communications
- ✓ Cost effective, high quality services with great depth of resources
- ✓ Excellent safety record and industry-low Workers Compensation rating to save you risk and money

SHAW NOTE

The Shaw Group Inc.[®], our parent company, was founded in 1987. We have more than 27,000 employees and 150 offices worldwide. We are publically traded on the New York Stock Exchange under SHAW. A *Fortune 500* firm, The Shaw Group is a financially stable company, with 2011 revenues of \$5.9 billion and a healthy backlog.

Shaw Environmental & Infrastructure, Inc. (Shaw) was formed in 2002 by combining the talents of some established environmental firms, including: The IT Group and Stone & Webster (environmental icons) and EMCON (leaders in solid waste). Since that time, our service offering has been broadened by including, among others, CMS, Envirogen, Badger, Coastal Engineering and Environmental Consultants, GBB, and most recently Coastal Planning & Engineering (CPE). Shaw's formation history brings us a richness of experience and depth of talent that few other firms could possibly hope to duplicate. Today, Shaw offers world-class professional environmental, solid waste, and coastal and marine engineering and design services.

Exhibit 1-1 shows our most recent *Engineering-News Record* rankings. A review of these rankings reveals why we believe the City could choose no better consultant than Shaw to become their proactive engineering arm for environmental, solid waste, and coastal services through this contract.

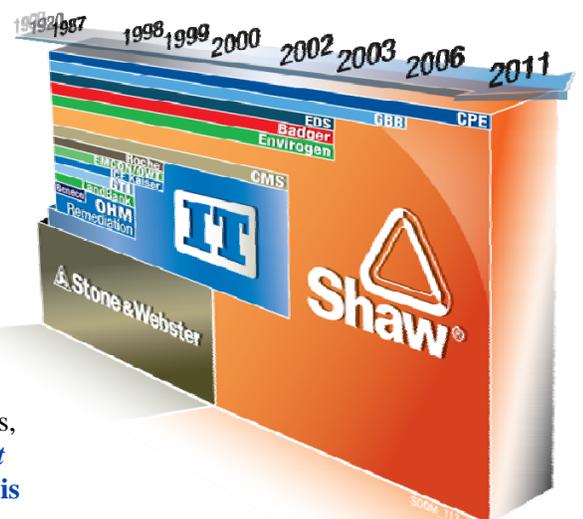
While we are a large firm with a global presence, Shaw has a community perspective. Shaw encourages its offices to be true contributors to their communities, participating in community activities and bringing engineering solutions through strong customer services. Our quality services, innovative solutions, and commitment have made us an industry leader. **Over 85 percent of our business comes from repeat clients—proof of our emphasis on client satisfaction.**



Exhibit 1-1. Shaw's Most Recent Engineering News Record Rankings

A highly respected firm, Shaw consistently ranks high among America's top firms. In our most recent ENR rankings, Shaw placed **No. 5 in Assessment and Compliance** among the Top 500 Design Firms in the nation; **No. 2 in Solid Waste and No. 3 in Marine and Port Facilities** among the Top 400 Contractors; and among the Top 200 Environmental Firms, **No. 2 in the area of Construction/Remediation; No. 9 in CM/PM and Environmental Management.**

QUALIFICATIONS FOR GENERAL ENGINEER SERVICES – THE CITY OF KEY WEST



Shaw Timeline of Growth. Shaw's lineage is a compilation of some of the world's most respected environmental engineering firms.

1.1 Shaw in Florida

We are highly active in Florida and have six primary offices with almost 300 professionals strategically situated across the state to serve their communities. (See **Exhibit 1-2.**) **Our office in Miami Lakes (14350 Commerce Way, Miami Lakes, FL 33016) will be the responsible office for this contract.** We will draw personnel from our Boca Raton office, our subconsultant's office in Sugarloaf Key, and elsewhere as needed.

Our clients come from both the public and private sectors and include:

- Florida Department of Environmental Protection (FDEP)
- Florida Fish and Wildlife Conservation Commission (FWC)
- US Army Corps of Engineers (USACE)
- US Military Installations including Naval Air Station Key West
- US Coast Guard (USCG)
- Most Water Management Districts, including South Florida Water Management District (SFWMD)
- Florida Department of Transportation (FDOT), including FDOT 6
- Counties, including Miami-Dade, Broward, Manatee, Hillsborough, Pinellas, Sarasota, Orange, Seminole, Lake, Volusia, Brevard, Osceola, and many others
- Municipalities, including Miami, Palm Bay, Miami Gardens, Miami Beach, Boca Raton, Lakeland Fort Lauderdale, Clearwater, Tampa, Palm Bay, Winter Park, and Orlando among others
- Many private clients, including 7-Eleven, AT&T, Darden Restaurants, Wal-Mart, CSX Transportation, Dr. Pepper

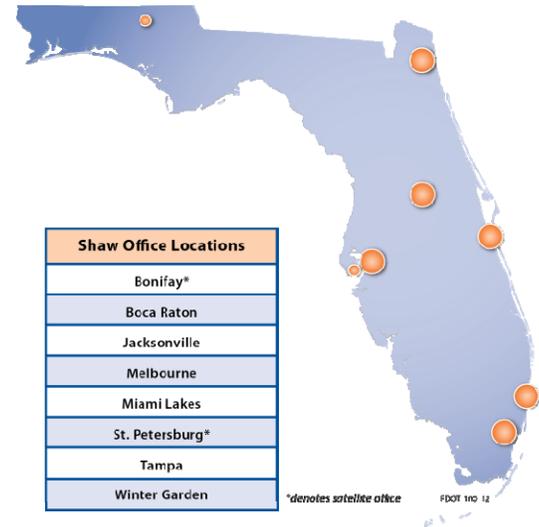
We hold every license necessary to perform these services in Florida, including:

- Certificate of Authorization to Transact Business in Florida
- Certificate of Authorization, Professional Engineering Services
- Certificate of Authorization, Professional Geology Services
- Certified General Contractor
- Asbestos Business
- Hazardous Waste Transporter Certificate of Approval
- Hazardous Materials Certificate of Registration
- Certified Pollutant Storage System Contractor

We have on staff 87 Florida registered Professional Engineers in various disciplines and an equally impressive number of Professional Geologists, Certified Industrial Hygienists, Certified Hazardous Materials Managers, Licensed Asbestos Consultants, LEED APs, GIS Professionals, and more.

Exhibit 1-2. Shaw Florida Offices

Our Miami Lakes office will be responsible for this contract. The team is committed to excellent service for the City.



Shaw in the South Florida Area

Our Miami Lakes office has been providing services to area clients for decades. We have a full complement of staff living in the area. **Much of this staff has experience in serving the City of Key West and other clients in the Keys;** all are committed to the successful collaboration we hope to bring the City in the General Engineering Services contract.



Exhibit 1-3. Shaw Services.

We also hold the following FDOT Professional Pre-Qualifications:

- Project Development and Environmental (PD&E) Studies (Group 2)
- Highway Design – Roadway (Minor Highway Design; Major Highway Design; Controlled Access Highway Design) (Group 3: 3.1, 3.2, 3.3)
- Highway Design – Bridges (Miscellaneous Structures; Minor Bridge Design) (Group 4: 4.1.1, 4.1.2)
- Traffic Engineering and Operations Studies (Traffic Engineering Studies) (Group 6: 6.1)
- Traffic Operations Design (Signing, Pavement Marking and Channelization; Signalization) (Group 7: 7.1, 7.3)
- Planning (Policy Planning; Systems Planning; Subarea/Corridor Planning; Land Planning/Engineering) (Group 13: 13.4, 13.5, 13.6)

Our reputation among our growing list of clients is excellent. We have successfully completed many hundreds of engineering projects throughout the state. With an inherited legacy of more than 100 years of experience, our personnel are able to become proactive partners to our clients to minimize the management time and worry that often accompanies project tasks.

The services we bring to our Florida clients and communities focus on environmental and infrastructure challenges they face, many of which are unique to the area. We provide a full complement of services to bring preventive methods and innovative solutions to protect and clean the environment and build communities—helping our clients reach their objectives with environmentally responsible results. *For the City of Key West General Engineering contract, we have emphasized our environmental, solid waste, and coastal engineering services with the special accompaniment of Local Agency Program (LAP), grant, project development and environment (PD&E), sustainability, and other services should they be needed.*

Exhibit 1-3 provides a summary of the services available.

1.2 Safety Is Job 1!

Shaw's corporate culture emphasizes safety as our highest priority and places the responsibility for safe work practices on every person in the organization. This culture is evident throughout the Shaw Health and Safety Program and in the policies and procedures that support it.

Safe performance directly leads to on-time, under-budget project completion. Our program consists of *prevention* (incident/ accident), *culture and goal setting* (Target Zero Program), *training* (Health and Safety Training Program), *planning* (Project-Specific Health and Safety Plans/Site Safety Awareness), *personnel and management focus* (Health and Safety Management Team), and *reporting/best practice development* (Accident Reporting Investigation, and Review Procedure). We are extremely proud of the results our safety

Air/Noise Quality
 Architecture/Engineering Design
 Asbestos and Lead Abatement
 Beach Nourishment and Renourishment
 Borrow Area Investigations
 Brownfields Redevelopment
 Carbon Management Strategies
 Chemical Registration and Defense
 Coastal Engineering
 Coastal Process Modeling
 Combined Heat and Power Consulting
 Computer Aided Design and Drafting
 Community Relations
 Conceptual, Process and Detailed Design
 Construction and Construction Management
 Containment Systems
 Contamination Assessments
 Decontamination/Decommissioning
 Demand Side Management
 Design/Build
 Due Diligence
 Ecological Risk Assessment
 Emergency Planning and Response
 Emergency Response
 Emissions Control
 Energy Audits, Planning
 Energy and Demand Reduction Programs
 Energy Efficiency Evaluations
 Engineering and Design
 Environmental and Other Permitting
 Environmental Compliance/Permitting
 Environmental Engineering
 Environmental Health and Safety
 Environmental Information Management
 Environmental Management
 Environmental Master Planning & Civil Design
 Environmental Site Assessments and Studies
 Excavation/Removal
 Expert Witness
 Fixation/Stabilization
 Geographic Information Services
 Greenhouse Gas Emissions Inventories
 Groundwater Impact Assessments
 Habitat Management and Conservation
 Habitat Mapping
 Hazardous Materials Storage/Handling/Disposal
 Housing Management
 Hydrologic Modeling
 Industrial Hygiene
 Landfill Design/Monitoring
 LEED Upgrades/Design
 NPDES Compliance
 Operations and Maintenance
 Petroleum Handling
 Pollution Control and Process Engineering
 Pollution Prevention/Waste Minimization
 RCRA, CERCLA and Superfund Projects
 Project Management
 Property Management
 Recovery and Treatment Systems
 Solid Waste Engineering
 Strategic Environmental Management
 Regulatory Analysis, Strategy and Support
 Remedial Design/Remedial Action
 Risk Assessment
 Risk Communication/Management
 Solid Waste Management
 Spill Prevention
 Stormwater Management Plans
 Sustainability Services
 Systems Wastewater Management
 T&E Species Surveys and Studies
 Wastewater Discharge Assessments
 Water Quality Monitoring
 Wetlands Delineation, Monitoring, Mitigation
 Wildlife Management

program has achieved in keeping our employees safe. Shaw has one of the lowest accident, injury, and incident rates in the industry. Our Safety-First attitude is demonstrated by our **industry low Experience Modification Rate (EMR) of 0.44**. This directly translates into lower risk to our clients and the contractors with whom we work on our projects.

1.3 Service Areas Covered in this Qualifications Submittal

Shaw offers the unique advantage of a wide variety of services performed for many industries, with no boundaries for its talented personnel. This means that every client can have access to various service disciplines through one organizational team structure.

1.3.1 Environmental Engineering Services

The formation of Shaw Environmental & Infrastructure was around the talents of The IT Group and Stone & Webster, both with strong reputations in the environmental field. Today, the legacy continues as Shaw expands its service offering, largely with the same experts who had originally earned the firms their stellar reputations for excellence in environmental engineering services. Cities throughout Florida credit Shaw as one of its most creative engineering consultants and attribute some of their most exciting project successes to our efforts. Likewise, FDOT districts across the state have come to rely on Shaw for responsive remedial designs and LAP services.

Shaw has delivered projects that have become the cornerstones for growth and environmental health in the state. For instance, our engineers have performed asset assessments for SFWMD to support a decision to acquire as much as 187,000 acres of agricultural land owned by various agri-business concerns in the Everglades Agricultural Area. SFWMD asked Shaw to quickly assemble staff to evaluate land and facilities and to draw up Capital Investment Plans for railroads, landing strips, manufacturing plants, machinery, croplands, and infrastructure.

Shaw designed hurricane hardening for the S-5A pumping station, the largest in south Florida. The structure will be upgraded to withstand a 200-year mean recurrence interval storm.

Our engineers were asked to perform independent technical review of design-related submittals for detailed compliance with industry and District standards and guidelines for the Okeechobee Field Station, L-8 Reservoir Embankment, S-46 Feasibility Study, North Shore Trash Rakes, S-21 Cathode Protection, Corrosion Protection Systems, Hillsboro Canal Bank Stabilization, Golden Gate 6 & 7, Indian River Lagoon, C-44 Reservoir, and C-44 Communications Tower.

Our environmental design engineers have taken on such important projects as the Miami Intermodal Center, Central Station, East Concourse, which included the management of environmental assessment and remediation of soil and groundwater within the former Avis rental car property, and the SR 826/836 Interchange



Target Zero

Our mission is to be the industry leader in environmental health and safety performance. We will accomplish this through continuous improvement to prevent or reduce the potential risk of harm to personnel, property, and the environment.



Shaw conducted environmental assessment and permit support for the NW 5th Street bridge replacement in Miami. As shown here, we designed the dewatering operation and provided onsite management in compliance with SFWMD permit.

Construction project, which included environmental assessment for soil and groundwater, source removal activities, and environmental compliance and oversight.

We also accomplish hundreds of projects each year that are not high profile, but also contribute to the well being of communities around the state. For instance, working with a City Steering Committee, Shaw developed an energy strategy for the City of Miami Gardens, FL. This work will benefit the City and its residents for many years to come. We have responded to emergency needs when clients experienced a release of hazardous material, thus protecting the community water resources. We have performed site investigations and energy audits; design of energy systems; and construction of photovoltaic systems for 15 separate buildings at NAS Key West. We have facilitated roadway construction when contaminants were encountered by designing remedial systems that accomplished the solution while avoiding impacts without interfering with the construction.

1.3.2 Solid Waste Engineering Services

Since the acquisition of EMCON in the early 2000s, solid waste services have remained a core competency for Shaw. Today we are one of the largest providers of integrated solid waste services in the United States. Our understanding of market trends, knowledge of regulations, national network of offices, and years of experience at hundreds of recycling facilities, transfer stations, landfills, landfill gas operations/facilities and analysis of solid waste systems makes us a leading choice for municipalities and public sector clients seeking effective solutions.

Within the area of solid waste, Shaw provides full service planning, environmental assessment/permitting, design, and construction related services, including:

- Solid Waste Plans and Plan Updates
- Waste Generation and Disposal System Analyses
- Economic and Feasibility Analyses
- Public Education and Outreach
- Procurement and Bidding Services
- Host Agreement Negotiations/Evaluations
- Expert Witness Testimony/Public Hearings
- Facility Design and Construction Management (Landfills, Transfer Stations, Material Recovery Facilities, Composting, Drop-Offs)
- Environmental Assessment and Evaluation
- Local Siting/Zoning Approval and State Permitting
- Hydrogeologic Investigations
- Analytical Groundwater Modeling

Shaw understands the vital role that local governments have in planning for and managing the solid waste needs of residents and businesses. Our understanding of local government has positioned us to work well with local officials on numerous projects around the country of varying sizes and scopes. We are confident that our



experience assisting local governments on a variety of solid waste projects and issues uniquely qualifies us to handle the tasks and objectives set forth by the City of Key West.

1.3.3 Coastal Engineering Services

Over the past decade, Shaw has developed its capabilities in the arena of coastal planning and engineering. Professionals devoted to these services include coastal engineers, biologists, geologists, modelers, oceanographers, surveyors, and GIS specialists. This core competency is directed to protecting our shorelines, restoring health to failing beaches, designing structures that support commerce and leisure pastimes. We offer solutions to support coastal conservation and construction projects around the world. Our experience includes planning, detailed design, construction management, and long-term monitoring plans for coastal engineering, hurricane protection, marine, and port facilities projects. Our comprehensive engineering services to the coastal industry include:

- Shoreline protection design and beach nourishment
- Levee design
- Dredge material disposal design
- Comprehensive coastal management plan development
- Wave run-up and surge modeling
- Coastal structure design
- Inlet and navigation studies
- Acoustic Doppler current and wave profiler
- Coastal geology
- Survey and mapping; numeric modeling
- Environmental monitoring and resource mapping
- Habitat restoration
- Permitting
- Artificial reefs



City of Key West Smathers Beach Project

Shaw (at the time, CPE) assisted the City of Key West with design and permitting the 4,000 foot long coastal restoration project at Smathers Beach. We also developed a multi-phased plan to mitigate for an impacted seagrass bed, involving restoration and enhancement of a wetlands area, previously a WWII Blimp Pad, located in the Salt Ponds of Key West. We also developed a comprehensive post-construction monitoring plan of the seagrass community.

1.4 Engineering Capabilities

As a local business that has been operating in south Florida area for over 20 years, Shaw has served local communities and government entities in accomplishing its engineering needs.

1.4.1 LAP Services

The Shaw team has deep rooted experience in assisting FDOT in the implementation of the LAP program. Our personnel bring over 10 years of experience supporting various FDOT Districts and local agencies with the process. Our work at the state program management level and interactions with regional Federal Highway Administration (FHWA) staff have allowed us to better understand federal program expectations.

Additionally our program implementation experience gained through providing process support to several other FDOT Districts allows us to better understand the frustrations experienced at the project specific level where DOT and local agency expectations can differ greatly. Shaw personnel have been heavily involved with American Recovery and Reinvestment Act process, working with Department staff in several districts to assess contamination impacts, prepare NEPA clearances, and assist with project plans development.

Project Example: FDOT 6 LAP Services. Shaw is working with the District 6 LAP Process Task Team to develop protocol for addressing the LAP process from a District perspective. We also have experience in the development of transportation projects through LAP agencies and have developed LAP training programs and compliance guidelines and participated in project-specific FHWA compliance audits.

Project Example: Monroe County. Shaw was part of the project team responsible for developing a way-finding approach that recognizes the uniqueness of the 80-mile corridor through the Florida Keys.

Services included:

- Preparation of a Wayfinding Master Plan and Concept Report for US 1 (80 miles)
- Preparation of Conceptual Signage Plans
- LAP assistance and support to the County
- National Environmental Policy Act (NEPA) compliance and coordination with FDOT 6
- Public Involvement



1.4.2 Planning and Permitting

From the design and analysis of remedial alternatives to the generation, collection, classification, and analysis of appropriate data for siting decisions, Shaw’s multidisciplinary resources enable us to provide a full range of environmental, land-use, coastal, and solid waste planning services and help our clients prepare for the future. When assisting our clients with siting and permitting issues, Shaw works to ensure that business decisions are kept in the forefront during the process. Shaw staff use their local and regional knowledge

Site Investigations for Landfill

For a new landfill or landfill expansion, many federal, state, and local agency regulations require the detailed definition of the physical characteristics of the site, with special emphasis on geology, soils, hydrology, groundwater, and critical environmental concerns including wetlands, endangered species, climatology and the nearby land use, among other factors.

of the underlying purpose of particular regulations to develop alternative ways to accomplish regulatory objectives while minimizing operational burdens.

Shaw develops comprehensive plans for county municipal planning agencies and has assisted in the implementation of these plans. Plans typically include inventories of existing conditions, programs and facilities; options for meeting present and future requirements; evaluation of options; and recommendations for implementation.

Shaw's master planning services are offered by professionals who are experts in the field and able to suggest construction and operational features that will maximize revenue and efficiency. Master planning for landfills for example, typically includes planning the footprint, airspace, soil balance, liner systems, roads, storm drainage, leachate management, and ancillary facilities for landfills in a preliminary design and supporting initial or updated permit documents. Urban planning and transportation planning found out our service offering. As part of our master planning services, we provide procurement services and alternative evaluations.

Project Example: Shaw performed a visual impact assessment and analysis for a planned bridge when communities expressed concerns over the bridge's aesthetic impact and associated light and shadow impacts.

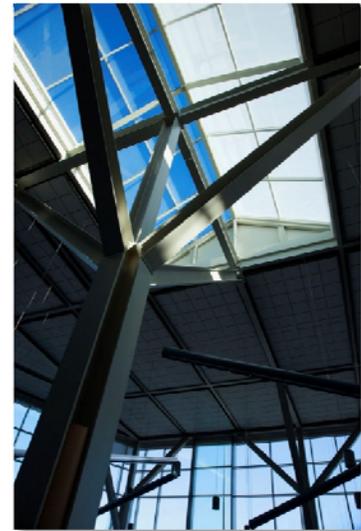
Site investigation data provides the basic foundation for the permitting package, design concept, and operations. Shaw has conducted hundreds of subsurface investigations in connection with new development plans. Our studies have been cited by officials as prime examples of the type of hydrogeologic investigations recommended. We take care in developing the investigation scope to assess the most important factors, chart the key milestones, and understand the required data needed for assessments.

Shaw often approaches site investigations in a phased manner, including consultation with regulators to ensure that the planned investigation will meet both the client's needs and permit and technical requirements.

Shaw's standard practice is to conduct project kickoff meetings with our clients and their state and local health officials early on during development projects. This ensures client and agency concurrence with project goals and the approaches taken to meet these goals, particularly regulatory compliance goals. Early review of innovative or alternative designs is particularly important for the client. Continued contact with the regulatory agencies throughout the project helps avoid costly missteps. Our plans are developed to be practical and forward-thinking and to stand the test of time. Typically, we work with stakeholder groups during plan development to build consensus on a preferred strategy. As a result of this consensus building, our plans get implemented. Our plans have also received awards from the American Planning Association and the Consulting Engineer's Council, demonstrating their quality and value.

Engineering and Planning

Shaw has a long history of working with federally funded programs, including services performed as part of large-scale, quick-start federal initiatives. Shaw has provided engineering and planning services for complex government funded programs, including the management of over \$4.3 billion in construction projects for the Federal Transit Administration.



Our LEED certified planners and designers help clients bring sustainable solutions to new and renovated facilities. Here natural sunlight allowed the client to reduce power costs.

Sustainable Solutions and Planning

Our depth of experience allows us to integrate traditional planning and engineering services with a thorough economic review, providing our clients with comprehensive, cost-effective, and sustainable solutions.

Project Example: Pinellas County Coastal Management Program

Shaw is providing a coastal planning document for the County's Coastal Management Program that details the various aspects of the program including its history, program elements, funding needs and resources for the next 6 years and long-term planning through FY 2021. The document includes the geographically independent and unique coastal features including Clearwater Beach Island, Clearwater Pass, Sand Key, and Dunedin Pass.

Permitting. Shaw is a leader in permitting and compliance auditing services and maintains a National Practice for Auditing and Compliance Services. This Practice includes over 400 compliance and permitting specialists nationwide. Nearly all of our work includes some level of interaction with state or federal regulatory agencies. This interaction has allowed us to develop very open, effective relationships with representatives of these agencies. In addition to working with the regulators on project matters, Shaw actively participates in the regulatory development process.

The keystone of any environmental management program is a thorough understanding of the environmental laws and regulations and the ability to assess their impact on plans and ongoing activities.

Many of our staff members are former regulators themselves and they provide special benefit as we assist our clients in meeting regulatory requirements and minimizing risk and liability from their operations.

Shaw has an experienced staff of engineers, scientists, regulatory experts and cost personnel who have extensive knowledge of environmental requirements. We track new and developing environmental laws and regulations and can assist our clients in early alerts for new legislation and regulations, development of expert testimony at hearings on new environmental legislation and regulations

Other services include:

- Air quality permitting and compliance management
- EH&S compliance auditing services including design, implementation, assessment, and support
- Hazardous waste permitting, storage, and management
- Hazardous material storage, inventory, reporting, and management (SARA 311, 312 & 313 reporting)
- Pollution prevention planning
- Spill Prevention, Control and Countermeasure (SPCC) plan development, certification, and management
- Storm water permitting, plan development, inspections, and reporting
- Training services (one-on-one, classroom, web based, train the trainer)
- Wastewater permitting, sampling, and reporting

Shaw Reports are developed with the ultimate use in mind. Here, the client intended a publically distributed Sustainability Master Plan, available to the general public. As part of our quality process, the plan was reviewed for readability by the non-technical audience.



Coastal Planning and Design for Town of Longboat Key

Shaw has been the coastal engineering consultant for the Town of Longboat Key since 1995. We have designed and managed many projects for the Town, including the following:

- ✓ Canal Maintenance Dredging & Dredge Spoil Management
- ✓ North Shore Road Seawall Extension Project - designed, permitted, and provided construction observation for a return wall extension to protect the road and restore public beach access
- ✓ Linley Street Boat Ramp Repair Project
- ✓ Development of the Town's Comprehensive Beach Management Plan and update to the Town's Comprehensive Beach Management Plan

We design, create, and deliver programs and materials that are consistent and provide a systematic approach for our clients [e.g., standardized SPCC plans, storm water pollution prevention plans (SWPPPs, Tier I/II reports, etc.).

Shaw has significant experience in multi-media environmental permitting with a variety of industries, commercial businesses, and governmental agencies. We have prepared numerous National Pollutant Discharge Elimination System (NPDES) permit applications for industrial wastewater point source discharge, as well as construction and industrial storm water permit applications (general and individual). Based on our extensive state and federal permitting knowledge and experience, we also assist clients during draft permit reviews and negotiations with state and federal agency representatives to ensure accurate and appropriate permit coverage.

Shaw successfully negotiates with regulatory agencies to resolve site-specific permit situations, or to obtain approval for alternate designs and construction methods. This allows our clients to reduce development and operation costs, complete projects in a timely fashion, and assure regulatory compliance.

1.4.3 Design

Shaw's design expertise spans the full spectrum of engineering services. We have design engineers in every discipline who develop solutions for varying industries, purposes, and needs. Their experience includes small design projects for such things as remedial solutions to contamination issues, traffic diversion designs during remedial or construction activities, or temporary roadways for site construction activities. Other larger projects would include marinas, piers, roadways, railroads, bridges, wind turbine and solar farms, or perhaps design of recycling centers, solid waste transfer stations or landfills, or the like. For this contract, we have included on our team design engineers specializing in engineering and design for a mix of solutions.

Shaw considers a number of factors in reaching the best design solutions including:

- Design complexity: is this a unique, cutting edge design or a common design?
- Constructability: can the project be built and function as designed? We conduct constructability reviews at 30%, 60%, and 90% design stages to ensure design is both constructible and cost effective.
- Risk Analysis: risk must always be a consideration to protect the public and property assets.
- Cost of Construction: budget availability will sometimes drive the type of design undertaken.
- Life-Cycle Cost and Design Serviceability/Life: key elements in making final design, construction, and operating decisions.

Often our projects require specialty designs or considerations such as dock foundations, pavement design, soil improvements, etc. Because

Design Resources

Besides the experienced engineers assigned to our team, Shaw's design resources include four full-service design centers providing vast pools of engineers, geologists, scientists, and chemists. These resources may be added to the integrated project team as needed to complement our local resources with a deep bench of qualified experts.

Design Example for Port Facility

For the Alabama State Port Authority Pinto Terminal Slab Handling Facility, Shaw prepared the design documents and the cost estimate of \$82,808,654. We developed the estimate in April 2008. The project was majorly completed in January 2010 (on schedule). The facility serviced the first vessel in February 2010 and was completed for a project price of \$78,448,596. Shaw also served as the cost estimator for the Alabama State Port Authority Choctaw Point Container Terminal Dock Facility (now called Mobile Container Terminal). Shaw prepared the design documents and the construction estimate of \$39,950,000. Shaw developed the estimate in January 2005. The project was completed in October 2007 on schedule. The completed project price was \$40,750,000.

of this, construction cost estimates are often as challenging as the designs themselves.

Our design processes call for full involvement of the client at critical stages as illustrated in **Exhibit 1-4**. This process takes into account the full cycle of task assignment, to conceptual design, through final design, through bid phase, through startup and final closeout. Our engineering standards require cross-discipline coordination and signoffs, assuring the client of high quality engineering products.

Similarly, we incorporate the client’s design standards as applicable. As project solutions are devised, we will ensure that both quality assurance reviews and peer reviews are done in order to capture interdisciplinary concerns and apply them to the final product.

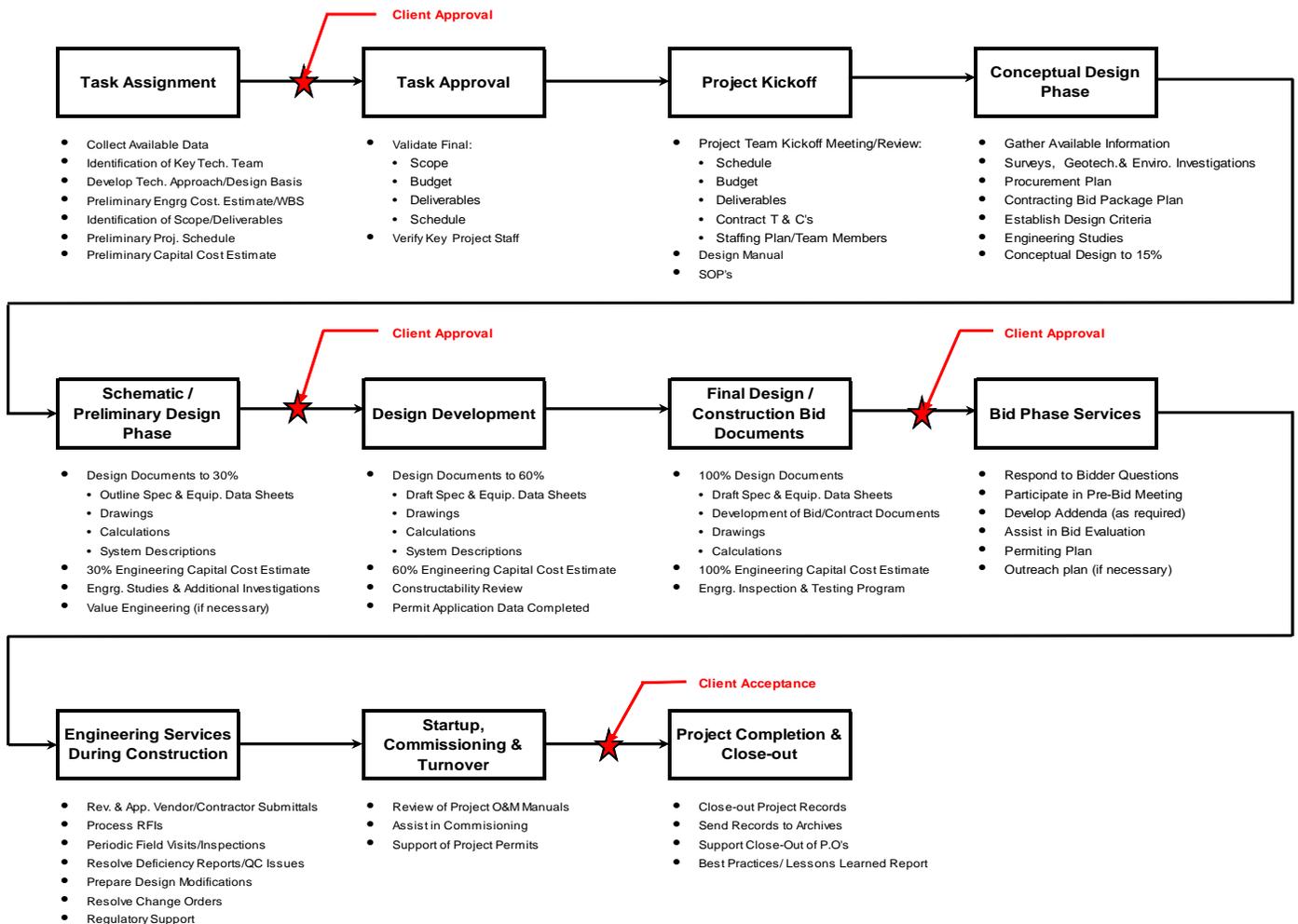
Beginning with a review of available data about the project site and an analysis of possible deficiencies/gaps in data, applicable local, state, and national codes, Shaw develops preliminary designs using sound engineering practices that implement proven industry standards and take advantage of current technology. The breadth of our engineering knowledge and experience gives us the ability to analyze the most difficult problems and provide the optimum solutions.



Fulfilling a Range of Design Needs

Design services under this contract could be as involved as a new city marina or as specific as a remedial design to remove hazardous substances from the groundwater. Above, Shaw remedial design engineers developed a compact, unobtrusive remedial system that was affective in removing contaminants and operated without impacting the business or causing alarm among the public.

Exhibit 1-4. Shaw Design Process



Project Example: Stormwater Management Design. Shaw was asked to provide engineering services for the evaluation of the existing stormwater conditions and design for improvements that could be completed to improve the conveyance of stormwater runoff from the site. The existing property is a low lying area along Moccasin Creek which drains into Safety Harbor just southwest of the City of Oldsmar. The subject property, and in particular a 13-acre asphalt parking lot, is frequently flooded during routine rainfall events. Following its site evaluation, Shaw provided a stormwater evaluation report, designed stormwater management improvements for the first phase of stormwater improvements consisting of drainage ditches, prepared construction plans, and obtained permits. The client was extremely pleased with the implemented design, *“Those swales in the front are simply outstanding. They work extremely well . . . love the design!”*

Project Example: Upham Beach Stabilization Project.. Shaw designed and permitted a stacked geotube T-head groin system to achieve increase beach nourishment interval. Project included assessment of the sediment budget to avoid downdrift impacts. Provided the County with construction engineering services.

1.4.4 Bid and Proposal Preparation/Procurement

Shaw has developed bid documents and specifications for many similar projects and some many more times complex. We can perform full project Engineering, Procurement, Construction, and Commissioning (EPCC) and execute various combinations of engineering, procurement, construction, and construction management roles.

Our projects have included participation with various partners, equipment suppliers, consortium relationships, and subcontractors. Our procurement personnel work closely with design engineers and their specifications to ensure that they provide resources both of equipment and materials and of services that not only meet the specifications but are delivered on time and to budget.

We bring world-class expertise from participation in developing detailed construction drawings for similar projects across the globe. We are capable of developing detailed construction drawings for projects of various size and complexity. Our approach is to require cross-discipline coordination and signoffs, assuring the City of high quality engineering products. As project solutions are devised, we will ensure that both quality assurance reviews and peer reviews are done in order to capture interdisciplinary concerns and apply them to the final product.

We maintain a database of thousands of qualified subcontractors around the country. To be accepted into our system, they must undergo a review that includes licensing, quality, and safety record.

1.4.5 Assessments, Sampling, Analysis, Monitoring

Many engineering projects require a complete understanding of the conditions before solution design can begin. We regularly perform



The property experienced frequent flooding. Shaw's stormwater improvement design has improved the conditions on site.

Fast-Track Procurement

During emergency levee and pump station repairs following Hurricane Katrina, we sub-contracted to five local firms to deliver 250 portable pumps to the site within the first 2 days. The pumps used 50,000 gallons of fuel per day, so Shaw established a fuel depot and procured fuel. We also provided worker camps for a 600-person workforce, which required procurement of multiple housing facilities staged on barges, catering barges, and a plethora of communications tools including satellite phones. Operations also included purchase of generators and transformers to provide power to damaged pump stations. To make temporary repairs to levee breaches, we procured 1,000 4-cy sandbags. We built a mile of roadways using rip rap and limestone and a fleet of heavy construction equipment. Sheet piling was also procured to repair large breaches, installed by cranes with vibratory hammers.

Following Hurricane Wilma, Shaw managed the installation of temporary housing in the 18 south Florida counties affected by the hurricane. The initial subcontract for the installation of temporary housing was issued within 24 hours of the notice to proceed and housing was being installed the next day. Procurement actions completed the first week of operations included six subcontracts to haul and install trailers, two subcontracts for electrical services, one for sewer upgrades at local county owned park, two subcontracts for the design of temporary group sites, and various procurements for project services.

site assessments, involving soil and groundwater sampling and analysis of analytical measurements.

Proper sampling techniques and protocol are key to a successful environmental program. Just as the information generated from a Phase I Assessment follows an ASTM Standard so it can be relied upon for finding recognized environmental conditions, proper sampling field procedures and documentation must also be followed to ensure that the sampling data in the Phase II assessment can be relied upon to be representative of the actual site conditions. Shaw has vast experience in sampling and sampling protocol to ensure that the collected data and the resultant report are reliable.

Shaw field investigation methods comply with the FDEP Standard Operating Procedures for Field Activities (DEP-SOP-001/01) for field decontamination, soil, and water sampling protocols, sample preservation, field parameter measurement, documentation, field calibration procedures and quality control/quality assurance practices.

Our in-house field sampling personnel include professionally trained chemists, biologists, geologists, engineers, and sampling technicians with specialized skills in sampling program design, and field sampling protocols. They work in concert with engineering, remediation, and laboratory personnel to ensure the integrity of sample collection and the usefulness of the resulting data.

Our personnel have the technical expertise and equipment to sample a variety of media including soil, surface water, sediment, groundwater, air, tissue, and waste material. Chip, wipe, and other specialized sampling techniques are also employed where appropriate, and our personnel experienced with asbestos, PCBs, and lead-based paint sampling. Our sampling personnel have extensive training and experience in procedures for scoping, collection, identification, preservation, packaging, handling, chain-of-custody, shipping, and storage of samples in accordance with FDEP SOPs, ensuring that all samples can be readily identified and that they will retain the site's sample characteristics.

Shaw also has experience in the installation of temporary and permanent monitoring wells by several methods including hollow-stem augers, rotary mud, and roto-sonic as well as through installation of pre-packaged monitoring wells using direct push. We may use the direct push method to collect discreet interval soil samples and install temporary wells (a stainless steel 6 to 21 inch screen with attached Teflon[®] tubing) in order to obtain inexpensive groundwater samples for screening purposes. In addition, Shaw has utilized direct-push technology to collect groundwater samples from varying depths in one borehole. These techniques allow us to collect a large number of delineation samples in a short amount of time.

Shaw personnel have the experience and knowledge to ensure compliance with the FDEP and industry protocols and to perform these tasks efficiently. The City can rely on our know-how to design a well-organized sample collection plan to maximize the usefulness of the data generated while maintaining the project budget. When



Soil sampling on the banks of a Florida highway.

Services to South Dade Landfill

Shaw currently performs gas collection and control (GCCS) operations, monitoring, maintenance, and repairs at this active facility in accordance with NSPS regulations. Our responsibilities include monthly GCCS monitoring and O&M, quarterly NSPS surface emissions monitoring and reporting, semi-annual Title V/NSPS monitoring reports, quarterly and semi-annual Title V deviation reports, semi-annual NESHAP SSM reporting, annual GHG reporting, annual air emission inventories, annual Title V reporting, and 24/7 emergency response. Shaw also performs monthly and quarterly explosive gas perimeter probe monitoring and reporting in accordance with the FDEP rules for municipal solid waste landfills. The GCCS comprises: 69 gas wells; 15 monitoring probes; a 4000-scfm flare; and a condensate/leachate control system. As a part of Shaw's continuous responsibilities to the Miami-Dade Solid Waste Department, we provide all the O&M and emergency responses for the system. Services in this landfill includes well and valve extensions, wellheads and headers repairs, condensate lift station, flare stack and blowers repairs, migration probes construction and final cover integrity inspection, and carbon monoxide monitoring in the closed cell.

possible, Shaw will design and implement composite sampling to cover large areas, while minimizing the number of required samples.

We use our in-house Trimble ProXRS GPS/Beacon Receiver with a Trimble Survey Controller (TSC-1) hand held data collector for mapping each sample location to identify the location in the future and to produce accurate site figures displaying the sampling results.

Project example: Contamination Assessment of City of Key West Facility. In a project for the City of Key West, Shaw (then EMCON) conducted a petroleum contamination assessment of an administration facility for the City of Key West. Personnel on our current proposed team managed this project. The work began with a preliminary site assessment to determine the nature and extent of the contamination. Preliminary assessment data was used to determine locations for the proper installation of monitoring wells. Based on the data obtained from the preliminary testing, Shaw observed that the extent of the groundwater plume appeared to go beyond the property boundaries and below businesses along an adjacent street. Following the preliminary assessment, Shaw designed a more detail assessment plan and installed seven shallow monitoring wells and one deeper well to define the vertical extent of groundwater contamination. Hydrogeologic data was collected to aid in characterizing the site, including a diurnal test used to show the effect of tidal changes on the direction and rate of groundwater flow. The preliminary assessment report was submitted to FDEP. On the basis of logistical and cost concerns, Shaw recommended the use of hydrologic modeling to predict the extent of the problem, rather than drilling and testing. Additional monitoring wells and groundwater sampling allowed for the complete definition of the groundwater contaminant plumes at the site. The results were submitted to FDEP.

1.4.6 Construction Administration

For decades, Shaw has developed and refined methods and procedures to efficiently control the time, cost, and quality of construction projects. Because our heritage is rich in construction, becoming a leading construction management company was a natural evolution. We provide leading-edge program management and construction management services to clients across industries and around the world. Shaw's capabilities have contributed to the success of thousands of construction projects and large capital improvement programs.

Annually, Shaw performs millions of dollars worth of construction and construction management services, giving us an advanced understanding for these activities. With our long history in environmental construction, we are particularly adept in managing the work of construction contractors. The goal of construction oversight is to ensure compliance with not only the specifications and design drawings, but the intent of the design. Other goals include cost substantiation and schedule compliance.

Elements of Shaw's construction oversight program include:

- Constructability reviews during design
- Construction permitting



Shaw personnel are trained and experienced in the Phase I and Phase II processes. Here, our technician collects surface water samples in a Phase II assessment to evaluate possible impacts to surface water quality.

The Right Equipment

Shaw maintains all of the necessary sampling and field equipment such as hand augers, sampling pumps, sample tubing, pH meters, turbidity meters, conductivity meters, thermometers, soil sample jars, GPS equipment, and flame ionization detectors in our offices to meet the procedural requirements to satisfy the FDEP Standard Operating Procedures and the ASTM Standards.

Broward County Waste and Recycling Engineering Services

From 2007 to 2010, Shaw provided landfill gas flare system evaluation, structural design, electrical design, and plumbing design, bid specification preparation and bid review for the Broward County Waste and Recycling Services – Solid Waste Operations Division.

- Quality assurance on all work executed
- Onsite Safety Officers and/or inspections
- Detailed review of shop drawings/vendor submittals
- Effective subcontractor management and coordination through on-site representation
- Performance-based incentive/disincentive programs related to cost and schedule results
- Thorough documentation of change orders
- Supervision of system start-up and operation
- Thorough final inspection and preparation of report

From remedial design implementation to facility or structure construction, Shaw offers on-site/resident engineers to provide construction management during the construction phase along with technical support from the professionals in our office staff. As the designer of record, Shaw performs routine inspections at the project site to ensure that the project is built in accordance with the design.

Shaw's construction inspectors ensure safety of life, property, and the client's right to full return for their investment in projects. The integrity of Shaw's inspectors are as important as the skills, knowledge, experience, and judgment they employ to ensure that the component parts of the project are constructed in conformance with the contract documents. We ensure that we maintain enough separation to allow unbiased assessment of project construction and progress.

Shaw believes strongly that proper inspection results in the opportunity for all work to be done correctly the first time. Shaw issues appropriate Certificates of Partial, Substantial, and Final Construction Completion as outlined in the construction documents and only after every facet of the phase of work is complete to the satisfaction of Shaw (Engineer of Record) and/or the client. Partial Certificates are issued when the benefit to take over part of the completed work benefits the client. Substantial Certification of Completion are issued when the client has full use of a constructed feature, and Final Certification of Completion will be issued in a timely manner after the Contractor provides notice of Final Completion, final inspections can be performed, and all punchlist and open items are closed to the satisfaction of Shaw (Engineer of Record) and the client.

Construction administration services can be of almost any scale. Many recent CM projects are quite recognizable by the general public. For instance, Shaw designed and managed the construction of the Inner Harbor Navigation Canal Surge Barrier, part of the U.S. Army Corps of Engineers' system to provide 100-year-level storm protection for the greater New Orleans area.

Shaw's team has worked with the New Jersey Turnpike Authority for the past 20 years, completing more than 30 construction management assignments that encompass all aspects of heavy highway and bridge construction. Shaw's comprehensive construction management services help clients complete projects on-time, within-budget, and in accordance with goals and expectations.



Owner's Representative for Design/Build of Multimodal Terminal

Shaw was a consultant and owner's representative for the Puerto Caucedo Multimodal Terminal located in the Dominican Republic. The 50-hectare, 1 million 20-foot equivalent unit capacity terminal is 14 meters deep with a 600-meter quay length. Shaw provided initial planning/design design review and construction management services for a new grassroots container terminal.



Our quality assurance/quality control and health and safety practices enhance Shaw's ability to deliver well-implemented projects. Our depth of construction management experience allows us to anticipate pitfalls and recognize and leverage opportunities for comprehensive project solutions. By working together to develop shared values and targeted goals, we represent our clients as vigorous and knowledgeable project proponents.

Accustomed to working for and with municipalities and the construction constraints busy cities often present, Shaw's managers have remarkable success in overcoming obstacles and bringing their projects in on time. In the photo to the right, we needed to manage the construction of a pump station for the Boston Central Artery, complete with three mixed-flow pumps with total capacity of 450 cfs, backup power generator, and ventilation and humidity control, all in the middle of a constantly busy complex of roadways, rail ways, businesses and commerce. The client was so satisfied that Shaw was awarded many more interesting and challenging projects.

Project Example: Technical Assistance Port of Miami, Miami, FL. Shaw provided technical assistance to the Port of Miami related to USACE navigational channel deepening projects. Services include analysis of completed contractor dredging work for reimbursement from USACE, analysis of remaining work under existing authorization, review of environmental/technical documents for authorization for additional deepening and widening, preparation of technical support reports and appendices.

Our staff provided construction observation services for this complicated dredging project, which the dredging company's bonding agent was completing after the dredging contractor left the project unfinished. Services included providing daily construction contract administration services, assisting the Port in the daily administration of the dredging contract; coordinating with the Port's construction inspection personnel; serving as the point of contact between the dredging contractor and the Port; monitoring construction progress; preparing regular status reports for the Port, USACE, and regulatory agencies; reviewing contractor payment requests and documentation and recommending progress payment amounts; assisting the Port in the evaluation of contractor change order requests; and assisting the Port with responses to the regulatory agencies permit issues.

1.4.7 LEED and Sustainability

Shaw is able to bring sustainable solutions where others see no such opportunity. As your consultant, Shaw will always advise where opportunities exist for energy efficiencies and alternatives that offer green solutions to the City.

We have helped cities, counties, states, and commercial clients respond to the practical need to embrace sustainability as an operating principle as they are required to perform to a higher standard, not only financially, but also socially and environmentally.



Engineering and Sustainability Find Compatibility with Shaw

One example was our work with the City of Aurora, Illinois for restoration of the Fox River and sustainable redevelopment of the downtown riverfront corridor. Shaw worked with the City to develop an integrated implementation plan for the redevelopment area that includes strategies to identify and remediate former industrial sites, manage stormwater and improve water quality in the Fox River, and promote the use of green design principles.

Key to the plan is Shaw's water quality and stormwater management project being implemented over a 400+ acre area adjacent to the Fox River. Shaw helped the City of Aurora secure Illinois EPA funding to integrate stormwater BMPs and green infrastructure into the City's stormwater management plans and capital improvement program. Shaw's green infrastructure project complements the City's efforts by using stormwater BMPs and green infrastructure to reduce the amount of stormwater handled through traditional systems; return stormwater to the hydrologic cycle more quickly and effectively; and improve the quality of stormwater before it returns to the hydrologic cycle.

We have assisted Florida clients to be good neighbors and responsible stewards of their resources while meeting their objectives.

Our multidisciplinary teams of engineers, architects, planners and professionals accredited in Leadership in Energy and Environmental Design (LEED®) offer sustainable design and development services in green buildings, green neighborhoods, green infrastructure, and sustainable redevelopment. Our skilled engineers, consultants, and scientists are implementing solutions such as identifying energy efficiencies, creating waste minimization programs, restoring wetlands and developing strategies for emissions trading.

Most definitions of sustainable development or sustainability focus on balancing economic, environmental and community interests and meeting current needs without compromising the ability of future generations to meet their needs. A key to implementing these principles is translating them into a systematic, enterprise-wide commitment to achieving an organization's clearly defined and measurable objectives. To help ensure success, Shaw works closely with its clients to develop strategies that are consistent with and tied directly to the organization's business, mission, and values and that use a practical definition of sustainable development to guide our work:

- Sustainable development is integrated solutions that solve real problems
- Sustainable development solutions define even some of the biggest obstacles as resources
- Sustainable development optimizes those resources and deploys them to create lasting economic, environmental and community value

We have a full suite of sustainability and environmental management services that can help the clients achieve their high-performance building objectives. These services include Shaw's green design services.

2 Organization and Team Qualifications

Shaw’s organizational structure is designed to facilitate the responsiveness, communication, and quality management that best serves our clients in a partnership-like manner. Our organization focuses on addressing client and project needs through a team with established capabilities, proven track records, and the availability of necessary resources, directed by strong project management. This structure is shown in **Exhibit 2-1, Shaw’s Proposed Team**.

Our team provides proven and experienced professionals organized in a manner that provides coastal, environmental, and solid waste experts devoted to their service fields, all reporting to our Program Manager, Yudex Hasbun. Our Program Manager provides the City of Key West with one primary point of contact and accountability.

Shaw is able to self-perform all of the scope items for which we are applying. We have chosen to include on our team a subconsultant capable of augmenting our staff and providing rapid response to City needs. **Terramar Environmental Services, Inc.** is a perfect choice as subconsultant. Terramar has its offices at 1241 Crane Boulevard, Sugarloaf Key, Florida 33042. Terramar is an environmental consulting firm that has been operating full time since 2004. The firm specializes in marine and terrestrial environmental assessments and environmental resource permitting in the Florida Keys. The firm is owned by Philip A. Frank, Ph.D. and Rowena P. Garcia. Dr. Frank has over 25 years of experience conducting environmental regulatory work throughout Florida and the Florida Keys, working as a private consulting biologist and also as a regulatory biologist with the U.S. Fish and Wildlife Service and Florida Fish and Wildlife Conservation Commission. Ms. Garcia has over 17 years of regulatory experience in the Florida Keys, working for the Department of Environmental Protection, Department of Community Affairs, the FWC, and the Nature Conservancy. Terramar has recently completed several projects within the City of Key West, including a biological inventory use in permitting repairs to Mallory Square Pier, permitting the replacement of the Marlin Pier in Garrison Bight, permitting coral relocation for the White Street Pier, and completing a benthic resource assessment for repairs to the Outer Mole Pier.

Our team is completed by a full complement of health and safety specialists, support engineers, geologists, biologists, marine biologists, scientists, indoor-air quality specialists, geographic information system (GIS)/computer aided design (CADD) specialists, modelers, energy efficiency experts, technicians, construction personnel, and more who can support the team as needed. Behind them stand almost 250 Florida professionals who will help ensure that no request of the City goes unanswered.

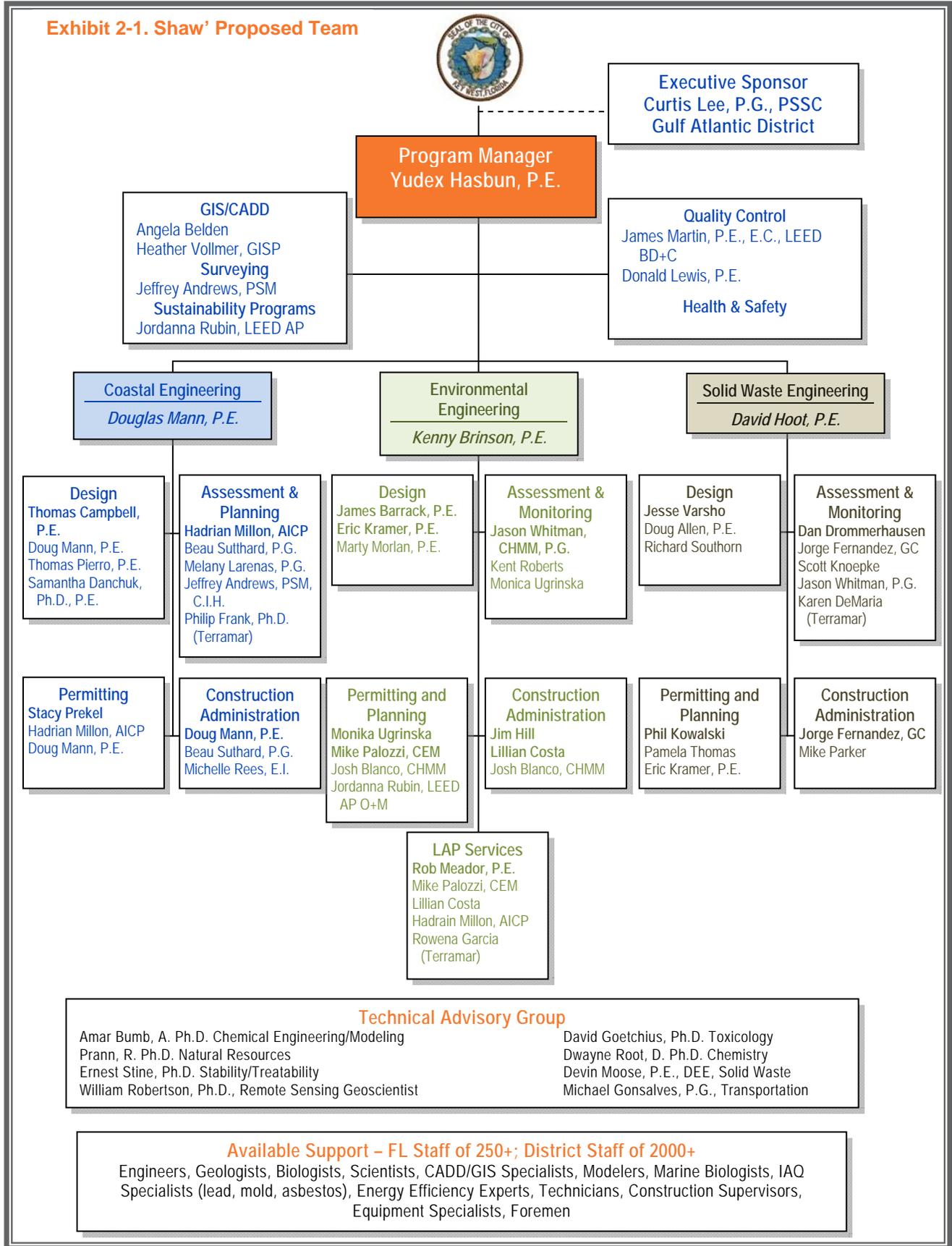
As you might expect with a company of our depth, Shaw is able to provide what we call “A World of Solutions” by assembling the best qualified and experienced team members from the talent resources of our firm.



Dr. Philip Frank and Rowena Garcia, co-owners of Terramar Environmental Services, Inc. have frequently provided services for the City of Key West.

Our team will keep the City’s best interests at the forefront and will collaborate with you at each step in the process. The individuals selected for our team bring a tremendous depth and diversity of experience. They have one thing in common: a drive to ensure that the goals of the City are met efficiently and effectively. In selecting Shaw to perform this work, the City will benefit directly, immediately, and in the future.

Exhibit 2-1. Shaw' Proposed Team



2.1 Key Personnel

Our organization is characterized by redundancy of resources and a wide variety of expertise. For each discipline, we have an assigned Engineering Team Lead and for each sub-discipline within, we have assigned at least one lead. In addition to the immense talent represented in our key personnel, they are backed by a diverse team. In addition, Shaw offers additional resources in the state and elsewhere in the country if the City's needs should require them. The full team has access to a group of renown technical experts who act as advisors as needed. These are primarily Ph.D. level specialists with decades of experience. Our Technical Advisory Group brings great value to our team and the City.

2.1.1 Management Team

2.1.1.1 Executive Sponsor, Curt Lee, P.G., PSSC

Mr. Lee is Shaw's Gulf Atlantic District Manager. As such, he brings our corporate commitment to the program and access to the full resources of his district and to additional company resources as necessary. Mr. Lee has over 27 years of environmental services experience, the last 15 of which have been in progressive levels of leadership. All district teams are accountable to him, and he will ensure that the City receives the highest level of excellence in service to this contract.

2.1.1.2 Program Manager, Yudex A. Hasbun, P.E.

Mr. Hasbun will serve as the primary point of contact for the City's contract. He is a Florida Registered Professional Engineer and has over 22 years of experience in engineering services. He has managed a variety of projects involving multiple disciplines for such clients as FDOT Districts 4 and 6, Miami-Dade Expressway Authority (MDX), SFWMD, and private clients. He has overseen projects of varying complexity, involving the activity of multiple disciplines. responsibilities included the development of work plans and cost estimates; management of the administrative contract functions including accounting, procurement, resources, etc.; assignment, management, schedule, and direction of contract staff to ensure responsive service to the clients. Additional responsibilities include project execution, maintaining close communication with the clients and project personnel; project cost control, preparation and review status reports and invoices, applying safety and quality controls; direct contract management functions, including cost and schedule tracking and reporting; review of final invoices for accuracy prior to submittal; control program activities to ensure technical quality, H&S, QA, and regulatory requirements are met; prepare contract status reports and attend all regular and specially scheduled meetings; participate in monthly contract evaluation with senior management; provide minimum weekly update reports and monthly status reports and ensure and confirm client satisfaction on all contract activities; sign/seal/approve all technical plans and reports.

Shaw's Organizational Structure

- ✓ *Includes experienced Project Managers in environmental, solid waste, and coastal engineering disciplines*
- ✓ *Comprises experienced/ dedicated workforce, some with prior City of Key West experience*
- ✓ *Provides the resources to meet project objectives and the flexibility to respond to emergencies and rapidly evolving priorities*
- ✓ *Administers the contractual requirements efficiently and correctly to minimize the City's management time*
- ✓ *Maintains a planned, scheduled, cost, and safety-conscious approach to every project*

2.1.1.3 Quality Control, Donald Lewis, P.E. and James Martin, P.E., EC, LEED BD+G

At Shaw, QA/QC functions are independent of the reporting structure of the program, providing them authority and direct access to the Program Manager. **Donald Lewis** is a Florida registered Professional Engineer with over 20 years of experience. He has been responsible for the quality control review on a number of Shaw's engineering contract assignments in the past 3 years. He understands the needs of local government agencies, having worked for Sarasota County where he was responsible for engineering review for private development projects. He has a unique understanding of local codes, requirements, and environmental regulations. **James Martin** is Shaw's Gulf/Southeast Regional National Practice Program Leader specializing in remediation technologies for contamination cleanup efforts. An electrical engineer and LEED certified professional, he has over 20 years experience in conducting and managing environmental projects including design and permitting, software programming and modeling, construction and technical oversight, operation and maintenance, and financial and field services management. His expertise in remediation technologies makes him an excellent QC Manager and affords his team great insights and advice in the area.

No surprises. Shaw brings the City of Key West the consistently high quality services it needs, at a cost it can count on, in the timeframe promised. Our organizational structure offers an unparalleled management team, comprehensive and innovative services, backed by proven management systems and procedures. With Shaw, you know what you will get, and you get it done right the first time, with no surprises.

2.1.2 Environmental Engineering Key Team

2.1.2.1 Environmental Engineering Lead, Kenny Brinson, P.E.

Kenny Brinson, a Florida-Registered Professional Engineer, has over 20 years of experience in the environmental field, including UST removal and installation, site assessment, site remediation, and site development. Site assessment and remediation projects include petroleum and chlorinated contamination sites for state, federal, and private clients. Site remediation experience includes remediation technology evaluation, system design, permitting and construction oversight, system startup and optimization, and operation and maintenance oversight. He has developed innovated design concepts to reduce system installation and operation costs, reduce maintenance costs, and improve system performance.

2.1.2.2 Environmental Design Leads, Eric Kramer, P.E. and Jim Barrack, P.E.

Eric Kramer is a Florida-Registered Professional Engineer with over 20 years of experience in engineering and project management, including environmental assessment, remedial design, and remedial construction. He is an expert in innovative remediation technology application and has provided assessment activities, engineering design, remediation system design and installation for numerous petroleum-contamination and hazardous waste sites for private, commercial and public works projects. Some of the remediation technologies utilized included bioremediation (augmentation and enhancement); in-situ chemical oxidation using permanganate, peroxide, and persulfate; soil vapor extraction and air sparging and source removal using large diameter augers (LDA).

He has performed many system installations and remedial designs, honing his expertise in environmental construction techniques.

He has performed as Contract or Project Manager for environmental contracts with FDOT and has managed numerous project sites in Miami-Dade, Broward, Palm Beach, Orange, Bay, Martin and Escambia counties.

James Barrack holds his Professional Engineer registration in six states, including Florida. He has an MS in Civil Engineering and 30 years of experience in engineering design. Currently, as a lead civil engineer he is responsible for civil engineering and design for numerous types of projects including preparation of highway plans and profiles, bridge and tunnel alignment plans, commuter station plans, railroad track alignments and profiles, bus and rail maintenance facility, site civil/utility layouts and designs; technical specifications, construction cost estimates, and project scheduling. He supervises and prepares civil plans, specifications and construction cost estimates and assists the client in contractor selection.

2.1.2.3 Environmental Assessment and Monitoring Lead, Jason Whitman, P.G., CHMM

Mr. Whitman holds an MS in Geology and has performed as Project Manager/Senior Hydrogeologist for both private client and government-funded environmental and engineering related projects. He has experience in managing projects related to the assessment, design, and remediation of automotive and aircraft petroleum hydrocarbon contaminants, dense non-aqueous phase liquids, as well as a wide range of industrial wastes such as pesticides, polychlorinated biphenyls, chlorinated solvents, brine contamination, lead, arsenic, and chromium in both soil and groundwater regimes. He has exceptional knowledge of regional groundwater systems and their associated regulatory overlay. He has utilized his technical expertise to delineate contaminant plumes, evaluate contaminant pathway migration patterns, and design and installation of groundwater remediation systems. He is Project Manager for our SFWMD General Engineering Contract, in which he is responsible for management of a national technical review team tasked with performing third-party engineering reviews of design packages for the District.

During his graduate studies, he worked with Dr. Jorge Restrepo to develop a MODFLOW computer model designed to replicate the process of evapotranspiration for the SFWMD.

2.1.2.4 Permitting and Planning Leads, Mike Palozzi, CEM and Josh Blanco, CHMM

Mike Palozzi will serve as lead in Permitting and Planning and will be part of the LAP Services Team. He holds a Masters in Environmental Engineering and is a Certified Environmental Manager. He has over 30 years of environmental experience in the management and implementation project development and environmental (PD&E) studies. A former Florida Department of Transportation (FDOT) environmental administrator, Mr. Palozzi

brings a valuable perspective on LAP programs. His recent experience and relationships with FDOT District 6's Environmental Management office can prove to be an asset for the City.

Josh Blanco has over 13 years of experience specializing in the management and oversight of environmental cleanup and construction projects. He has performed and managed permitting for environmental cleanup and construction projects and environmental compliance audits for state local and private clients. He has recent and relevant experience with the N Roosevelt projects currently on-going within the City of Key West. Mr. Blanco is a Certified Hazardous Materials Manager (CHMM) and a Qualified Stormwater Management Inspector.

2.1.2.5 Construction Administration Leads, Jim Hill and Lillian Costa

Jim. Hill is an experienced environmental construction manager with over 20 years hands-on experience in the performance of soil excavations, backfill, piping, pavement restoration and remedial equipment installation. As a Journeyman carpenter with experience in electrical and plumbing maintenance, he brings an experienced eye to the construction management process. He will lead our team and provide construction management and administration support.

Lillian Costa has over 25 years of experience in the environmental engineering and construction areas. She has over 16 years of direct FDOT experience serving as the District 6 designated environmental construction manager for Right of Way, Design, Maintenance and Construction projects. She will provide construction management, oversight and contractor selection evaluation support to the City. In addition, she will perform as part of the LAP Services team.

2.1.2.6 LAP Services Lead, Rob Meador, P.E.

Mr. Meador has over 26 years of experience in transportation and will lead our team for any necessary assistance the City may require in compliance with the FDOT's LAP program, grants, or any assistance with the PD&E process. His previous experience as Pinellas County's Division Manager for Planning and Programming as well as being the County's point person for developing and coordinating agreements and grants with FDOT, CSX, MPOs and local governments provides the City with resource with valuable insights. Previously, he served as the Principal Transportation Planner for a metropolitan planning organization in Virginia. He was directly responsible for developing the 2025 Long Range Transportation Plan, overseeing committee reviews, presentations to Boards, Commissions, and the public.

Since joining Shaw, Mr. Meador has led our LAP Services throughout Florida.

2.1.3 Coastal Engineering Key Team

2.1.3.1 Coastal Engineering Lead and Construction Administration Lead, Douglas Mann, P.E.

Douglas Mann, a Florida-Registered Professional Engineer, is a Senior Coastal Engineer for Shaw with more than 25 years

Shaw Is Committed to the City

Shaw is committed to providing a responsive management and organization structure that:

- ✓ Provides the manpower and resources to meet project schedules
- ✓ Is able to perform any requested service for this contract
- ✓ Administers the contractual requirements efficiently and correctly to minimize your management time
- ✓ Maintains a cost-conscious approach to every project

experience. He has worked on a wide variety of beach nourishment, coastal process, and coastal structure engineering projects along the Atlantic and Gulf of Mexico coasts.

Mr. Mann has successfully obtained permits for multiple coastal construction projects over the years. Since 1998, Mr. Mann has permitted over 40 Coastal Control Line Permits (Chapter 161, F.S. and 62B-33, F.A.C.) for the development of multi-million dollar beachfront structures. Through the design and permitting of numerous projects, Mr. Mann has developed an in-depth knowledge of Florida coastal permitting (Chapter 161 F.S. and Section 62B-41, F.A.C.), dredge and fill permitting, and U.S. Army Corps of Engineers permitting regulations and procedures. Examples of projects he has managed or worked as principal engineer in Florida include: Pinellas County (Sand Key) Restoration Project, Florida; Town of Longboat Key Beach Nourishment Project, Florida; Manatee County Shore Protection Project, Florida; Town of Longboat Key- Mid Key Project, Sarasota County, Florida; Curry Hammock State Park Beach Enhancement Project, and City of Gulfport and Fred Howard Park Beach Nourishment, Pinellas County, Florida.

Mr. Mann is also the firm's specialist on coastal structures and has recently managed the Central Palm Beach County Comprehensive Erosion Control Project and the construction of a segmented breakwater field and the permitting of two adjustable permeable groins in Longboat Key, Florida.

2.1.3.2 Coastal Design Lead, Thomas Campbell, P.E.

Mr. Campbell is a Florida-Registered Professional Engineer in seven states, including Florida. He has more than 36 years' experience in providing environmental and physical monitoring, coastal engineering analysis, design, geotechnical surveys and numerical modeling in support of coastal projects.

Mr. Campbell was the founder of CPE, a recent Shaw addition. He heads the Scientific Advisory Committee for the American Shore and Beach Preservation Association, is a Director of the Florida Shore and Beach Preservation Association and is a frequent speaker and highly published in the arena of coastal engineering. He recently received American Shore and Beach Preservation Association's Morrrough P. O'Brien Award for his contributions to the coastal engineering profession.

2.1.3.3 Coastal Assessment and Planning Lead, Hadrian Millon, AICP

Mr. Millon has extensive experience in the planning, programming, design, and construction of complex public sector projects specializing in urban design and transportation planning. Prior to joining Shaw, Mr. Millon spent 8 years of experience with a state department of transportation where he managed planning, design, and review of landscape and environmental restoration projects.

He was the lead landscape architect for Boston's Central Artery/Tunnel project, the largest urban transportation and

infrastructure project in North America. He has extensive experience in planning and design for livable communities, context sensitive solutions, smart growth planning with transit and transportation planning and design; corridor planning; bicycle, pedestrian and streetscape design; and community involvement and public process.

Mr. Millions' experience makes him a perfect contributor to both the Coastal Assessment and Planning team and the Environmental LAP Services team.

2.1.3.4 Coastal Permitting Lead, Stacy Prekel

Stacy Prekel holds an MS degree in Coastal Zone Management and has over 12 years of experience in biological and environmental science, the last 8 years of which have focused on coastal and marine biology. Ms. Prekel has conducted biological monitoring for both public and private-sector clients and has extensive experience in marine biological habitat assessment, design and implementation of monitoring programs for marine benthic and fish populations, characterization of artificial reef habitats, coral restoration and transplantation, and seagrass surveys for distribution and abundance.

Ms. Prekel has experience in the permitting process, particularly with JCP permitting. She has also lead and contributed to the production of NEPA documents such as Environmental Impact Statements and Environmental Assessments, as well as generation of supporting documents including Threatened & Endangered Species Biological Assessments in support of Section 7 Consultation and Essential Fish Habitat Assessments.

2.1.4 Solid Waste Engineering Team

2.1.4.1 Solid Waste Engineering Lead, David Hoot, P.E.

Mr. Hoot is a Florida-Registered Professional Engineer and has an extensive background in engineering and business management, project planning and development, client-consultant liaison, and construction-related services. He leads Shaw solid waste services in Florida and is responsible for project management, technical support, and design of various solid/hazardous waste facilities. He has previous experience with the City of Key West, having worked on the operational evaluation and closure analysis of the Stock Island Landfill and WTE Facility.

Mr. Hoot has over 36 years of experience in project management and civil/environmental engineering design and plan preparation involving site development and pre-development services; environmental impact studies and assessments; utilities and infrastructure improvements; solid waste facility planning, permitting, design and CQA; water and wastewater transmission and treatment systems; environmental permitting and stormwater management; and roadway and transportation-related design.

Mr. Hoot has functioned as the client advisor and program manager for the effective and timely delivery of technical planning and engineering services for various solid waste and renewable energy/WTE facilities in support of Waste Management Inc.'s Florida operations. In this capacity he oversaw or managed projects

including siting, due diligence, environmental assessments, regulatory permitting/compliance, engineering analysis and design, and construction management and construction quality assurance for municipal waste and construction/demolition debris landfills, transfer stations, and recycling facilities. He has also provided support to various public/private sector solid waste acquisition/siting programs, including technical proposals, public presentations, public hearings, and expert testimony.

2.1.4.2 Solid Waste Design Lead, Jesse Varsho

Mr. Varsho is senior project manager for Shaw's solid waste services and landfill design, and has his BS in Geological Engineering and Geology. His project experience has included Class I and III landfill expansion and cell design, landfill closure and post-closure design and reporting, and environmental activities at solid waste facilities. Mr. Varsho is also responsible for assisting with the siting, zoning, geophysical design and permitting of solid waste management facilities, including municipal landfills, transfer stations and material recovery facilities. He also develops waste stream analysis and capacity estimates, project cost estimates for closure/post-closure care, construction and remediation. Mr. Varsho has 12 years of professional experience.

2.1.4.3 Solid Waste Assessment and Monitoring Lead, Dan Drommerhausen

Mr. Drommerhausen is a senior project manager and hydrogeologist for solid waste services, and has performed various environmental assessments and groundwater modeling in south Florida. He will be the lead professional and technical manager of solid waste assessments, contamination assessments, site investigations including RCRA/CERCLA, remedial investigations and feasibility studies, remedial design at any of the City's solid/hazardous waste sites. He also specializes in the collection, analysis and management of field data, physical/chemical hydrogeology, groundwater modeling, and project QA/QC. Mr. Drommerhausen has over 20 years of professional experience.

2.1.4.4 Solid Waste Permitting and Planning Lead, Phil Kowalski

Mr. Kowalski is a senior project manager for solid waste services. His project experience has included planning for metropolitan governments, rural communities, and regional agencies across the United States. Mr. Kowalski is also responsible for conducting regulatory, statistical, and economic analyses as part of a multi-discipline project team. He prepares permit applications, solid waste needs assessments, and economic feasibility studies. He also develops project cost estimates and develops business and marketing plans for all types of solid waste facilities. Mr. Kowalski has 24 years of professional experience.

2.1.4.5 Solid Waste Construction Administration Lead, Jorge Fernandez, GC and Mike Parker

Jorge Fernandez is a project manager for solid waste construction services and landfill gas system installations, operations, and

maintenance, and is a Certified General Contractor in Florida. His project experience has included construction and environmental related services for various development and construction projects for Miami-Dade's Solid Waste Management Department, Aviation Department, Transit Authority, and the FDEP and USACE. Mr. Fernandez will oversee construction activities that may include turnkey landfill development projects, landfill gas system construction, operations and maintenance, cell construction and CQA, groundwater and leachate control, and emergency response. He has over 15 years of professional experience. **Mike Parker** is a senior designer, project manager and field services manager with over 22 years of engineering and construction experience involving field investigations/inspections, design/detailing, and construction of solid and hazardous waste landfill systems. He also has experience performing as a Resident Engineer and CQA Lead Observer for various solid waste and environmental projects, including cell construction and closure involving subgrade and base liner, final cover, earthwork and leachate control system installation. He is construction supervisor for small to large landfill gas system flares/flaring station installation at public and private landfills in Florida, southeast US, and Puerto Rico. Mr. Parker will provide construction oversight, administration, estimating, and interface with engineers during construction activities for Key West projects.

3 Demonstrations of Expertise

In **Exhibit 3-1** we have summarized some programs and projects as demonstration of the expertise of our team. You will note that the left column shows the client and/or Program being described, followed by a listing of personnel assigned to your contract who were active on the described work.

You will note that we not only meet schedule requirements, but often bring innovations that actually better the schedule and conclude our services in a more expeditious manner than anticipated by our client.

Exhibit 3-1. Demonstrations of Shaw's Expertise

Client/Program Team Personnel Involved	Service Examples
Lockheed Martin MSA, national <i>Marty Morlan, P.E.</i>	Shaw was selected as a preferred contractor for environmental assessments, design, construction, and construction services. Often these assignments are made simultaneously for services at various locations. Shaw's teams respond expeditiously and complete the work on schedule. Example: Shaw provided civil engineering services for LM's Oldsmar, FL 80-acre property. Three tasks were performed to date including: overall stormwater evaluation report of 40 acres; preparation of stormwater design plans to eliminate flooding on the property; and evaluation/recommendation report and cost estimate for rehabilitating a 6.5 acre cracked asphalt parking lot.
Florida Department of Environmental Protection, Hazardous Waste Contract <i>Don Lewis, P.E.</i>	Shaw was selected to provide support to the DEP Bureau of Waste Cleanup. Tasks include assessment, initial remedial measures/interim source removals, feasibility study, engineering design, construction oversight, operation and maintenance, and reporting, often performed at multiple sites at the same time. Example: At Trophy Cleaners in Clearwater, due to a drycleaning solvent release, Shaw conducted supplemental assessment activities, prepared an Interim Remedial Action Plan involving a soil vacuum extraction system (SVE). Following completion of the site assessment, Shaw performed a Remedial Alternative Evaluation recommending in-situ chemical oxidation with potassium permanganate, air sparging, and permanent SVE. Shaw met with FDEP and developed and implemented a remedial strategy that involved in situ enhanced bioremediation (ISEB). The ISEB operated until July 2006 and the SVE operated until the system was deactivated in July 2008.
Florida Department of Environmental Protection, Petroleum Cleanup <i>Don Lewis, P.E.</i> <i>Eric Kramer, P.E.</i>	Shaw is serving a third term of this contract to provide petroleum contamination site cleanup services. Tasks include tank closures, site assessment, remedial action plans, remedial action, monitoring, and reporting. We often receive concurrent assignments at locations throughout the state. Example: At Grimes Grocery at 2444 SR 33 Clermont, FL Shaw conducted removal of five USTs with source removal, site assessment to characterize the horizontal and vertical extent of the petroleum impact per Florida Administrative Code Chapter 62-770, developed a pilot test plan for air sparging and vapor recovery, develop the Remedial Action Plan, implemented the remedial action construction utilizing Shaw personnel, conducted operation and maintenance of the treatment system and is currently performing post-remediation monitoring for the project.
City of Orlando, Orlando, FL – Emerging Technology Evaluation and Procurement <i>Phil Kowalski</i> <i>Christina Seibert</i> <i>Devin Moose</i>	Shaw has been retained by the City of Orlando to provide consulting services for the possible development of a waste conversion facility to reduce landfill disposal quantities and produce a renewable source of energy. Shaw's services have included a preliminary assessment of conversion technologies, an analysis of waste composition and waste quantities, and a review of existing energy infrastructure. The City had identified one potential project site, adjacent to the Orange County Landfill and the Stanton Energy Center; as such, Shaw's evaluation also included an evaluation of the suitability of the existing landfill gas collection pipeline to handle produced syngas from a conversion facility and convey it to the energy facility. Shaw has also assisted the City to develop a Request for Proposals to solicit proposals from technology vendors. NOTE: The consideration and development of emerging technologies in Key West may be of significant interest to the City due to its growth, tourist fluctuations, and various physical and environmental restrictions. Shaw's consulting services could assist the City in its evaluation

Exhibit 3-1. Demonstrations of Shaw's Expertise

Client/Program Team Personnel Involved	Service Examples
	<i>and procurement of a technology or renewable energy source that could lead to greater waste diversion, a renewable energy source, and waste component efficiencies.</i>
FDOT 6 Miami Intermodal Center/ Central Station/ East Concourse <i>Lillian Costa Monika Ugrinska Kenny Brinson Jim Hill</i>	Managing the environmental activities for the construction of the Central Station which include environmental assessment and remediation of soil and groundwater in former Avis rental car, UST closure and removal activities, assessment for drainage and water main installation, and environmental compliance. <i>Project of major importance to FDOT 6 as it transitions the site to Miami Dade County and completes this multi-billion dollar transportation improvement. Worked in tandem with FDOT prime demolition contactors onsite.</i>
FDOT 6SR 826/836 Interchange Construction Project <i>Lillian Costa Monika Ugrinska Jim Hill</i>	Performed environmental assessments for soil and groundwater, source removal activities, environmental compliance, and oversight. <i>ARRA Project of major importance to FDOT 6 as it continues the expansion of the airport connection to the western reaches of Miami Dade County and increases the flow through of this vital intersection for increased commerce</i>
City of Tampa - Engineering, Architectural, Surveying or Mapping Services <i>Donald Lewis, P.E.</i>	Shaw has held this contract for several contract periods and serves the City with various, on-call environmental engineering needs. <i>Sample Projects: Howard F. Curran Advanced Waste Water Treatment Plant Diesel Spill Assessment and Remediation; Right of Way Assessment Work for the Expansion of 40th Street; North Clark Avenue Maintenance Yard - Low Score Site Initiative Assessment</i>
Florida Department of Transportation, District 6 - LAP Desk Reference Guide <i>Marty Morlan, P.E. Rob Meador, P.E. Mike Palozzi, CEM</i>	This task consisted of the development of a LAP guide to address and clearly explain both state and local process requirements for the development and implementation of LAP projects. <i>NOTE: Original submittal of draft document was provided to the project manager 1 month ahead of schedule.</i>
South Florida Water Management District Engineering Services Contract <i>Jason Whitman, P.G. Jordanna Rubin, LEED AP James Barrack, P.E.</i>	Shaw was awarded three discipline contracts as well as Full Service Engineering Contract to provide as-needed engineering/design services in south Florida. <i>Example: Everglades Restoration & Capital Projects Engineering Project Technical Reviews - Shaw staff is tasked with reviewing the assigned Everglades Restoration & Capital Projects (ERCP) Engineering Projects (Project) design-related submittals for detailed technical compliance with industry and District standards and guidelines. Shaw's staff on the Project's DRT consists of senior level engineers in each major applicable discipline (Civil, Mechanical, Electrical, Geotechnical, Hydrology and Hydraulics, Construction, and Instrumentation and Controls) as well as staff from supporting disciplines as needed for each particular project. The intent of the Technical Reviews is to verify that the design of the project meets the required standards and acceptable practices. The Technical Review also captures and minimizes design issues that could lead to additional costs or delays during construction, operational and maintenance challenges, and other inconsistencies. Typical Projects assigned to Shaw for review include: Building Designs, Physical Modeling Studies, Major Earthwork Design, Reservoirs, Structure Replacement, Feasibility Studies, Tower Designs, Corrosion, and Canal Bank Stabilization Projects.</i>
City of Sarasota, FL <i>Douglas W. Mann, P.E.</i>	CPE (now Shaw) was retained by the City of Sarasota to design and permit the restoration of the shoreline of Centennial Park. CPE utilized "living shoreline" techniques to clean and restore the Sarasota Bay shoreline. The project involved rehabilitation of existing coastal structures, re-vegetation of the shoreline, conversion of an abandoned storm water culvert to a public observation platform. <i>NOTE: This successful restoration project has performed as expected for over 15 years.</i>

Exhibit 3-1. Demonstrations of Shaw's Expertise

Client/Program Team Personnel Involved	Service Examples
Broward County/Broward County Environmental Protection Department <i>Stacy Prekel</i>	<p>Begun as CPE; continues as Shaw. Segment III of the Broward County Shore Protection Project is located between Port Everglades and the Broward/Miami-Dade County line. The primary design objectives of this project were to: restore eroded sections of the authorized Federal project design beach berm; provide at least 6 years of advance beach nourishment; and improve fill performance through beach fill taper modifications at the northern end of the City of Hollywood and the southern end of City of Hallandale Beach.</p> <p><i>CPE's findings of a comprehensive physical and environmental mapping program that started in 2001 were used as the basis for development and 2004 approval of the EIS for the Segment III project. Working with our Joint Venture partner, We prepared and integrated the required design, modeling, and geotechnical documentation into the EIS document. Included in the 2004 approved decision document was an Essential Fish Habitat assessment, Cumulative Effects Analysis, as integral compliance and evaluation tools needed to evaluate the various project components under NEPA. We developed the biological monitoring plan for this project and have conducted 5 years of post-construction and post mitigation monitoring. Shaw is currently working with the County to determine if additional mitigation is required.</i></p>
CSX Transportation Preferred Program <i>Marty Morlan, P.E.</i>	<p>Shaw has been a part of the CSXT Preferred Provider Program for more than 10 years and has performed hundreds of projects involving industrial hygiene, compliance and environmental/due diligence, bringing to bear diverse resources to execute concurrent assignments.</p> <p><i>Example: CSXT Tampa Stormwater Conveyance Upgrades, Rockport Terminal, Tampa, FL, Shaw provided project design plans for stormwater diversion and collection improvements. Ditches were designed to re-route stormwater from shedding off site onto neighboring property. Designed a new ditch to convey stormwater discharging into the East Bay within the on-site stormwater collection system. Provided construction management services during the installation of the stormwater improvements, as well as, quality assurance inspections and testing. Shaw was able to focus our expertise on this project as well as others and deliver a design within a short period of time.</i></p>
Stock Island Landfill and Waste-To-Energy Facility Key West, Florida - Operational review and financial analysis of solid waste assets. <i>David Hoot, P.E. (Personal Exp.)</i>	<p>Shaw's Solid Waste Engineering Lead served as Project Manager and Technical Advisor for the Feasibility Study and Operational Analysis of the Stock Island LF and Waste to Energy Facility in Key West, FL, in 2002-03. Provided review of facility conditions and operations, MSW and recycling quantities and volume projection/analysis, operational permits, and cost analysis of potential improvements. Performed a closure analysis and value analysis of potential decommissioning, and review of assets and long term maintenance financial review. Provided client coordination and QA/QC of Feasibility Study and final Site Closure Report and recommendations. Technical duties included: preparing projections of waste quantities for both LF and WTE; assessing required improvements to current solid waste facilities (landfill, transfer stations, WTE facility) and costs of upgrading or decommissioning of facilities; preparing life-cycle capital and operating projections for each strategic alternative, including impact on overall system economics and tipping fees; conducting a market analysis of long haul transfer to other facilities and future tipping fees to provide benchmark cost comparison data; and conducting meetings of a Client and Stakeholders.</p> <p><i>NOTE: Mr. Hoot, the Solid Waste Lead for this RFQ, has previous knowledge of the Key West system and facilities, and understands the operations from collection to transfer to disposal - diversion options and alternatives need to be integrated to make Key West's Solid Waste System function efficiently and effectively.</i></p>
Orange County Utilities, Orange County, FL – Solid Waste System Evaluation & Study <i>David Hoot, P.E. Phil Kowalski Devin Moose Doug Allen Pam Thomas</i>	<p>Shaw is currently performing a comprehensive review and evaluation of the Orange County Solid Waste System (Collection, Transfer, Disposal and Operations), that include seven key areas of interest: Background Document Review; Market Analysis; Operations Review; Flow Analysis; Financial Review; Legal and Political Review; and the identification and analysis of System Structural Components and Alternatives. The OCU Study also includes Shaw leading or participating in numerous meetings with Orange County Managers and staff; the Orange County Mayor and Board of County Commissioners; City Mayors and Managers and their staff; and various Stakeholders and private entities. Shaw will prepare three interim Technical Memorandums and a Final Report summarizing our observations, findings and/or recommendations.</p>

Exhibit 3-1. Demonstrations of Shaw’s Expertise

Client/Program Team Personnel Involved	Service Examples
	<p>NOTE: The services provided by Shaw on this project emphasizes the firm and its solid waste staff’s knowledge and understanding of all components of a county’s or municipality’s solid waste system, and how they work, how they are organized, how they are funded/financed, and how important the system is to the community. The study and system analysis will also evaluate opportunities to increase system efficiencies and potential economic savings, which may be of interest to Key West.</p>
<p>Pinellas County Samantha Danchuk, Ph.D., P.E.</p>	<p>CPE (now Shaw) developed a comprehensive planning document for the County. This document included a history of the coastal management program and its elements, a review of federal authorizations, a snapshot of existing conditions for each coastal element/area, needs and milestones for the next 6 years, and a review of other communities’ coastal management programs.</p> <p>CPE provided recommendations for the management of the Pinellas County Program.</p>

We are proud of the high caliber and extensive experience of the individuals we have been able to assign to the team organization. **Exhibit 3-2** provides a summary of the education, licensure, experience of the key personnel and their primary support team. Behind each team stands other professionals who can assist should the City have a large number of assignments it needs addressed. In addition, the full team has access to our Technical Advisory Group, peopled by highly degreed and experienced experts who can assist in the identified scope items and in other areas that might be of benefit to the City.

Exhibit 3-2. Qualification Matrix of Shaw Team

Staff Member	Role	Specialization	Education	Years Experience	Engineering/ Design	Permitting	Bid Specs & Proposals	Contractor Evaluations	Construction Administration	Surveying	Assessments	Planning	LAP Services	Sustainability Programs
Curtis Lee, P.G., PSSC	Executive Sponsor	Geology	BS	27	■	■	■	■	■	■	■	■		
Yudex Hasbun, P.E.	Program Manager	Civil Engineering	BS	22	■	■	■	■	■	■	■	■		
■ Douglas Mann, P.E.	Coastal Engineering Lead	Civil/Coastal Engineering	MS	25	■	■	■	■	■			■		
■ Kenny Brinson, P.E.	Environmental Engineering Lead	Environmental Engineering	BS	20	■	■	■	■	■	■	■	■		
■ David Hoot, P.E.	Solid Waste Engineering Lead	Civil & Environmental Engineering/ Water Resources	BS	36	■	■	■	■	■	■	■	■		
James Barrack, P.E.	Design Lead	Civil Engineering	MS	30	■		■	■	■			■		
Josh Blanco, CHMM, CPESC	Permitting & Planning Construction Administration	Biology	BS	9	■	■	■	■	■	■	■	■		
Lillian Costa	Construction Administration	Environmental Engineering	MS	26	■	■	■	■	■		■	■	■	
Rowena Garcia (Terramar)	LAP Services	Marine Biology	MS	15			■	■	■		■	■	■	
Jim Hill	Construction Administration Lead	Construction Management	AA	37			■	■	■	■				
Eric Kramer, P.E.	Design Lead SW Permitting & Planning	Environmental Engineering	BS	22	■	■	■	■	■	■	■	■	■	■
Robert Meador, P.E.	LAP Services Lead	Civil Engineering	BS	26	■	■	■	■	■		■		■	
Marty Morlan, P.E.	Design Lead	Civil Engineering	BS	25	■	■	■	■	■	■			■	

Staff Member	Role	Specialization	Education	Years Experience	Engineering/ Design	Permitting	Bid Specs & Proposals	Contractor Evaluations	Construction Administration	Surveying	Assessments	Planning	LAP Services	Sustainability Programs
Michael Palozzi, CEM	LAP Services Permitting Lead	Environmental Engineering	MS	30	■	■	■	■	■	■	■	■	■	
Kent Roberts	Assessment & Monitoring	Geology	BS	23	■	■	■	■	■	■	■	■		
Monika Ugrinska	Permitting & Planning Lead Assessment & Monitoring	Environmental Economics	MS	9		■	■	■	■					■
Jason Whitman, P.G., CHMM	Assessment & Monitoring Lead	Geology	MS	15		■	■	■	■	■	■			
Jeffrey Andrews, PSM	Assessment & Planning Surveying	Coastal Zone Management & Marine Science	MS	30		■	■		■	■	■	■		
Thomas Campbell, P.E.	Design Lead	Engineering – Civil, Structural, Ocean	MS	39	■		■	■				■		
Samantha Danchuk, P.E.	Design	Engineering – Civil, Environmental	Ph.D.	7	■	■	■	■	■			■		
Philip Frank (Terramar)	Assessment & Planning	Wildlife Ecology, Conservation	Ph.D.	25		■	■	■	■		■	■	■	
Melany Larenas, P.G.	Assessment & Planning	Geology	MS	12		■	■					■		
Hadrian Millon, AICP	Permitting: Assessment & Planning E – LAP Services	Landscape Architecture/Planning	MS	23	■	■	■	■			■	■	■	
Thomas Pierro, P.E.	Design	Ocean Engineering	MS	10	■	■	■	■	■	■	■	■		
Stacy Prekel	Permitting	Coastal Zone Management	MS	12		■	■				■	■		
Michelle Rees, I.I.	Assessment & Planning	Ocean Engineering	MS	4	■	■	■	■	■			■		
Beau Suthard, P.G.	Assessment & Planning	Geological Oceanography	MS	12		■	■			■	■	■		
Douglas Allen, P.E.	Design	Civil Engineering	MS	16	■	■	■	■	■		■	■	■	■
Dan Drommerhausen	Assessment & Monitoring Lead	Hydrogeology	MS	18	■	■	■	■			■			
Jorge Fernandez	Construction Administration Lead Assessment/Monitoring	Civil Engineering	BS	20	■	■	■	■	■	■	■			
Scott Knoepke, CHMM	Assessment/Monitoring	Environmental Management	MS	12	■	■	■	■	■		■	■		■
Phillip Kowalski	Permitting & Planning Lead	Physics	BA	24		■	■	■				■		
Michael Parker	Construction Administration Lead	Mechanical Design and Drafting	AA	25	■	■	■	■	■	■	■			
Richard Southorn	Design	Civil Engineering/SW Design	BS	12	■	■	■	■						
Pamela Thomas	Permitting & Planning	Civil & Geotechnical Engineering	MS	20	■	■	■	■	■		■	■		■
Karen DeMaria (Terramar)	Assessment & Monitoring	Marine Science, Biology	BS	25		■	■	■	■		■	■		
Jesse Varsho	Design Lead	Geological Engineering	BS	11	■	■	■	■	■	■	■	■		■
Angela Belden	GIS/CADD	GIS/Civil 3D/AutoCAD Certified	AS	25	■	■	■			■	■	■		■
Heather Vollmer, GISP	Coastal Planning/Engineering	GIS/Environmental Studies	MS	9	■	■				■				
Jordanna Rubin, LEED AP O+M	Sustainability Programs	Environmental Energy Policy	MS	13	■	■	■	■	■		■			■
Donald Lewis, P.E.	Quality Control	Environmental Engineering	BS	20	■	■	■	■	■	■	■	■		
Jim Martin, P.E., LEED BD+C	Quality Control	Electrical Engineering	BS	20	■	■	■	■	■	■	■	■		■

- Denotes Leadership Team ■ Denotes Environmental Engineering Team ■ Denotes Coastal Engineering Team
- Denotes Solid Waste Engineering Team ■ Denotes Team Support

4 Project Examples

Shaw offers the following projects as examples of our performance in similar projects. Our clients stand ready to discuss the exemplary services they received from Shaw.

4.1 Environmental Engineering

Lawrence Pump Station Upgrades, Miami, Florida

Name of Client	City of Miami Public Works Department
Client Contact	Elyrosa Estevez, P.E. 444 SW 2 nd Avenue, 8th Floor Miami, FL 33130 305-416-1295
Key personnel involved in design phase services	Jason Whitman, P.G., CHMM Kenny Brinson, P.E.
Design services fee, estimate of construction cost	\$50,000 <\$150,000
Name of contractor awarded project contract award amount	F.H. Paschen, S.N. Nielsen Unknown
Contractor's representative, contractor's address and telephone number.	Herb Miller 290 NW 165th Street, P200 Miami, FL 33169 305-940-0264 Office 954-543-2635 Cell

The City of Miami selected Shaw to assist them with upgrades to a Storm Water Pump Station required under a Consent Order with Miami-Dade County. Shaw was responsible for the following:

Pre-Work Planning and Health and Safety Plan Development.

Shaw was responsible for preparing the project work plan, submitting all notices to state and local agencies, and preparation of the Health and Safety Plan for the project.

Design and Permitting for Installation of a 2,000-Gallon Above Ground Storage Tank. Shaw provided in-house engineering design services for the installation of a 2,000-gallon diesel AST system including all necessary engineering design plans for permitting and installation. Shaw also obtained all necessary permits from the applicable state and local regulatory agencies to allow for installation and operation.

Development of Specifications and Contract Bid Documents.

Shaw prepared the technical specifications and necessary backup documentation in support of the City of Miami soliciting contractor bids for both removal of the existing 2000-gallon diesel UST system and installation of a new 2000-gallon AST system.

Construction Oversight Services. Shaw performed Construction Oversight Services for both the installation of the new 2000-gallon diesel AST system and the removal of the existing 2000-gallon diesel UST system. Shaw's oversight of the City's contractors ensured that both the installation and removal adhered to the

KEY POINTS

- ✓ *Engineering Design*
- ✓ *State & Local Permitting*
- ✓ *Environmental Assessment*
- ✓ *Development of Bid Specifications*
- ✓ *Construction Oversight*



applicable standards associated with the approved AST design, applicable codes and requirements, including but not limited to FDEP aboveground storage tank regulations, Building Department, Fire Department, and County Permit requirements.

Tank Closure Assessment and Site Assessment. Shaw collected environmental soil and groundwater samples in accordance with the applicable FDEP Standard Operating Procedures and all applicable health and safety laws during the removal of the UST system. The samples were submitted to a properly licensed, NELAC and Florida Department of Health accredited, laboratory for analysis in support of the tank closure assessment requirements. Based on the results of the data and observations during removal, Shaw prepared a detailed Tank Closure Assessment Report (TCAR) to document the closure of the existing 2,000 gallon diesel UST system. The results of the TCAR sampling did not trigger a Site Assessment in accordance with Chapter 62-770.600 of the Florida Administrative Code.

Spill Prevention Control and Countermeasure Plan Preparation. Shaw prepared a Spill Prevention, Control, and Countermeasure Plan in accordance with 40 CFR 112. The Plan was signed and sealed by a Shaw Professional Engineer registered in the State of Florida.



SR 5 N Roosevelt Boulevard, Key West, Florida

Name of Client	Florida Department of Transportation, District 6
Client Contact	Mauricio Gomez District Contamination Impact Coordinator 1000 NW 111 Avenue Miami, Florida 33172 (305) 470-5228
Key personnel involved in design phase services	Jason Whitman, PG, CHMM Yudex Hasbun, P.E. Kenny Brinson, PE Josh Blanco Lillian Costa
Design/Assessment services fee, estimate of construction cost	<\$150,000
Name of contractor awarded project contract award amount	WRS Infrastructure & Environment, Inc. Phase I- \$ 1,200,000 Phase II- \$ 800,000
Contractor's representative, contractor's address and telephone number.	Mike Miller WRS Project Mgr 10486 NW 31 Terrace 1st Floor, Miami, Florida 33172 305-796-5808

KEY POINTS

- ✓ *Environmental Assessment*
- ✓ *State and local permitting*
- ✓ *Sampling and analysis*
- ✓ *Selection and oversight of specialty contractors*
- ✓ *Development of Specifications*
- ✓ *Construction Oversight*
- ✓ *Coordination with City of Key West*

FDOT District 6 is designing reconstruction and improvement of the existing four-lane roadway along North Roosevelt Boulevard from Eisenhower Drive to US-1 under Financial Management No. 250548-3 in Key West, Monroe County. The improvements include the widening of existing lanes, construction new drainage system, lighting, signage, and landscaping. Shaw was responsible for the following:

Pre-Work Planning and Health and Safety Plan Development.

Shaw was responsible for preparing the project work plan, and preparation of the Health and Safety Plan for the project.

Environmental Assessment. Shaw was tasked to submit a Contamination Screening Evaluation Report (CSER) update for potentially contaminated sites in the vicinity of the referenced project. For the CSER, Shaw reviewed existing environmental documentation prepared by others; FDEP Storage Tank database; FEDP GIS database; FDEP Oculus database; FDOT GIS database; Monroe Health Department files; US EPA Enviro-Facts database; and the 60% construction design. In addition, Shaw conducted a site reconnaissance visit to determine potential contamination issues along the project corridor. A total of 19 potentially contaminated sites were identified as High Risk or Medium Risk as part of this CSER update.

After CSER update was reviewed, the Department tasked Shaw to perform an Impact to Construction Assessment at the 19 potentially contaminated sites.



The field activities were conducted on July 13 through July 17, 2009 and consisted of the following:

- Advancement a total of 69 soil borings
- Collection of soil samples from all 69 soil borings to 1 foot into the water table for screening by an organic vapor analyzer
- Collection of nine soil samples for analysis of contaminants of concern
- Installation of four temporary monitoring wells
- Collection of four groundwater samples for analysis of contaminants of concern
- Prepared and Impact to Construction Report
- Prepared Environmental Notes for inclusion to the construction plans

The ICA was conducted with minimum disruption to business with close coordination with the City of Key West which assisted with advance notification to the business owner. All assessment related work was completed safely, on time, within budget and in accordance with construction plan drainage features.

Development of Specifications. Shaw assisted FDOT 6 with the development of specifications and notes to be included in the construction plans. These specifications and plan notes are used to indicate the environmental conditions that may be encountered at the site during construction, as well as determine the scope of work that is to be performed by the general contractor and the contamination assessment and remediation contractor in areas of documented contamination. The specifications and plan notes also indicate the procedures that are to be followed when working in contaminated areas and notification procedures when unexpected contamination is found.

Construction Oversight Services. Shaw provided construction oversight for FDOT 6 during all phases of construction. Shaw ensured the contractor adhered to FDOT procedures and specifications, as well as providing contractor oversight, reviewed the progress of the work during construction, reviewed contractor submittals, prepared and issued site instructions, provided cost controls and construction contract administration. Shaw maintained the adherence to the project schedule, and tracked the progress of the work on behalf of FDOT.

Local Agency Program Desk Reference Guide

Name of Client	Florida Department of Transportation District 6
Client Contact	Steven Craig James, Env. Administrator Adam Leigh Cann Building 1000 N.W. 111 Avenue, Miami, Florida 33172 305-470-5221
Key personnel Involved	Michael Palozzi, CEM Robert Meador, PE
Professional services fee	\$150,000

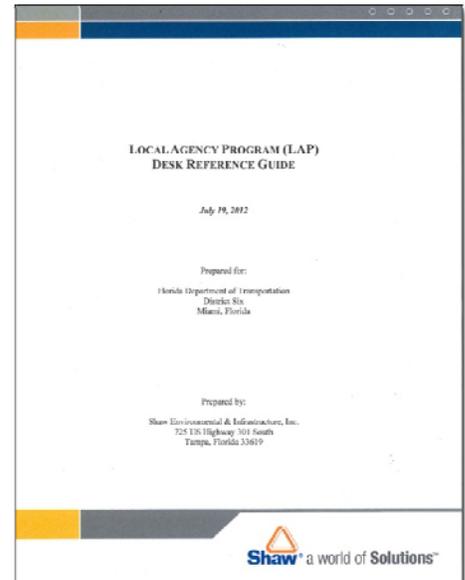
As result of our long term involvement and experience with the LAP, Shaw was asked by the FDOT 6 to develop a LAP Desk Reference Guide. This intent of the Guide is to provide a clear explanation of how to develop, manage, and implement a Federally-funded transportation project through LAP in a simple step-by-step format. The Guide was developed for use by both FDOT staff and Local Agencies.

The project consisted of three parts: a text document, tables of specific process steps, and process maps (flowcharts) detailing the overall LAP process as well as several key components of the program, such as agency certification, agreement processing, design and construction phases, and invoicing, etc.

Development of the Guide included task team meetings with several department and division managers and other key staff within FDOT 6. Task team meetings were used to draw out key aspects and concerns of the LAP and to develop a document that would help address those concerns by laying out clearly defined processes for each of the key aspects of the Program.

KEY POINTS

- ✓ *Coordination with key offices of FDOT District 6*
- ✓ *Established District 6 LAP processes*
- ✓ *Developed of Process Maps for key aspects of LAP Program*



4.2 Solid Waste Engineering

Morse Road Eco-Station Design and Construction

Name of Client	Solid Waste Authority of Central Ohio (SWACO)
Client Contact	Albert J. Iosue, P.E. Assistant Director of Planning & Projects 4239 London-Groveport Road Grove City, Ohio 43123 614-871-5100
Key personnel Involved in design phase services	Devin Moose, P.E. Douglas Allen
Design services fee, estimate of construction cost	\$1,100,000 design services fee
Name of contractor awarded project contract award amount	Thomas & Marker \$15,900,000
Contractor's representative, contractor's address and telephone number.	Mr. Kirk Marker 2011 Riverside Drive Columbus, Ohio 43221 614-754-8349

Shaw was retained to evaluate two 35+ year old existing transfer stations and render an opinion as to whether the existing transfer facilities could be rehabilitated or retrofitted to enable more efficient, flexible and expanded waste transfer throughput capabilities.

Findings of the evaluations concluded the most effective means by which to modernize facility operations and materially improve site geometrics and efficiency would require complete demolition and of existing facility infrastructure and replacement with new facilities.

On behalf of SWACO and the City of Columbus Refuse Division, Shaw provided and procured engineering services for the phased redevelopment of the Morse Road Eco-Station. The existing 7 acre parcel is currently being redeveloped to include a 29,700 square foot municipal solid waste transfer station, an 18,400 square foot vehicle maintenance facility, and a 38,800 square foot indoor vehicle storage facility. Services provided include:

- Conceptual site planning and programming
- Preparation of detailed design drawing set
- LEED pre-enrollment activities to best assure project conformance with LEED requirements
- Preparation of construction specifications and bid package documents
- Preparation of construction cost estimates, including cost implications of ARRA compliance
- Serve as technical contact with Ohio EPA to assure compliance with environmental permitting requirements

To minimize the disruption of service provided by the City of Columbus hauling fleet, Shaw developed the site design and redevelopment phasing plan to enable existing waste transfer and vehicle maintenance activities to continue while construction of new site infrastructure is completed.

The site redevelopment is ongoing, with construction of the new transfer station building to be complete by fall 2013.

KEY POINTS

- ✓ Structural and operational evaluation of existing infrastructure
- ✓ Design services to modernize operational capabilities
- ✓ Project planning to phase construction with minimal impact to operations
- ✓ Construction management for estimated \$17 million in improvements



North and South Dade Landfill Services

Name of Client	Miami-Dade County Public Works and Waste Management Department
Client Contact	Lee Casey Miami-Dade County Public Works and Waste Management Department 2525 NW 62nd Street 5th Floor Miami, Florida 33147 305-594-1670
Key personnel Involved in services	Jorge Fernandez
Contract services fee	\$10,000,000

KEY POINTS

- ✓ Landfill gas and emissions monitoring
- ✓ Compliance support
- ✓ Operation and Maintenance services for landfill gas control and collection systems, and leachate treatment systems

South Dade Landfill Gas Collection System

Shaw provides landfill gas monitoring services for the underground gas collection system, flare monitoring, green house gas data collection, surface emission and migration probes monitoring services at the South Dade County landfill. Our services include preparing reports for the green house gas, migration and surface scanning and consulting and support activities in accordance with Florida DEP and USEPA rules for municipal solid waste landfills. The gas collection system is comprised of:

- 60+ Gas Wells
- 15 Monitoring Probes
- A 4000 scfm Flare
- A Condensate/Leachate Control System

As part of our continuous responsibilities to Miami-Dade Solid Waste Department, we provide all the Operation and Maintenance services and emergency response of the system described above. Services in this landfill include well and valve extensions, wellheads and headers repairs, condensate lift station, flare stack and blowers repairs, migration probes construction and final cover integrity inspection and carbon monoxide monitoring in the closed cell. Shaw collects and provides all necessary support and operational data for the annual and semiannual compliance reports.

South Dade Landfill(s) Leachate Treatment Systems

Shaw currently operates and maintains the leachate treatment facilities at both the Old South Dade Landfill and South Dade Landfill, which involve Sequential Batch Reactor (SBR) Plants for 1.2 million gallons per day of ammonia contaminated groundwater and 0.32 million gallons per day of leachate, respectively from the closed and active landfills. These SBR systems include: a series of groundwater extraction and injection wells; associated piping, pumps and pump stations; groundwater monitoring gauges and wells; influent and effluent controls, meters and sampling ports; stormwater control structures/drains; effluent discharge control and monitoring; and all other structures and equipment associated with the system/plant operation.

Shaw collects and provides all necessary support and operational data for the annual and semiannual compliance reports.



North Dade Landfill Gas Collection System

Shaw provides the landfill gas monitoring services for the underground gas collection system in the open cell and above ground gas collection system in the closed cell, flare monitoring, green house gas data collection, surface emission and migration probes monitoring services at the North Dade County landfill. These services include the reports for the green house gas, migration and surface scanning and consulting and support activities in accordance with Florida DEP and USEPA rules for municipal solid waste landfills. The gas collection system is comprised of:

- 136 Gas Wells
- 12 Monitoring Probes
- A 1000 scfm Flare
- A Condensate/Leachate Control System
- 100,000 Gallons/Day Leachate Pretreatment Plant

As part of our continuous responsibilities to Miami-Dade Solid Waste Department, we provide all the Operation and Maintenance services and emergency response of the system described above. Services in this landfill includes well extensions, wellheads and headers repairs, condensate lift station, flare stack and blowers repairs, migration probes construction and carbon monoxide monitoring.

North Dade Landfill Leachate Pretreatment System

Shaw has been contracted to operate and maintain the leachate pretreatment plant at the North Dade Landfill since 2007, which incorporates two stripping towers, a 30,000 gallon equalization tank, and a diversity of pumps, blowers, meters and controls to process about 100,000 gallons of leachate per day.

Shaw collects and provides all necessary support and operational data for the annual and semiannual compliance reports.

Glenview Transfer Station Retrofit Design and Construction

Name of Client	Solid Waste Agency of Northern Cook County (SWANCC)
Client Contact	Steven Schilling Assistant Executive Director 2700 Patriot Boulevard, Suite 110 Glenview, Illinois 60026 847-724-9205
Key personnel involved in design phase services	Devin Moose, P.E. Douglas Allen
Design services fee, estimate of construction cost	\$160,000
Name of contractor awarded project contract award amount	Camosy Incorporated \$1,300,000
Contractor's representative, contractor's address and telephone number.	Mr. Josh Johnson PO Box 1070 Waukegan, Illinois 60079 847-395-6800

Shaw assisted SWANCC, a municipal joint action agency representing 23 municipalities and over 750,000 people, in the evaluation and implementation of design and operating changes to its existing transfer station. The transfer station historically operated with three waste balers. Baled waste was then hauled to a distant regional landfill for disposal.

Shaw conducted an analysis of the Agency's transfer station to determine the technical and economic feasibility of building modifications to gain operating efficiencies and reduce operating costs. Based on our analysis, the Agency decided to remove the facility's balers and transition to a top-loading transfer operation.

Shaw prepared detailed construction drawings and specifications and provided construction oversight activities on behalf of the facility owner. Construction of the modifications was completed over a 5-month period in early 2008. The construction activities were phased to enable the continued operation of the 1,000+ ton per day transfer facility throughout the construction process.



KEY POINTS

- ✓ *Design and operating evaluation*
- ✓ *Cost efficiencies identified*
- ✓ *Design package development*
- ✓ *Construction management to maintain ongoing site operations*

4.3 Coastal Engineering

Curry Hammock State Park Beach Enhancement Project

Name of Client	Florida Department of Environmental Protection
Client Contact	Marshall Flake, Coastal Project Coordinator 3540 Thomasville Road Tallahassee, FL 32309 850-488-3539
Key personnel involved in design phase services	Douglas Mann, P.E., D.CE
Design services fee, estimate of construction cost	\$98,600 (fees)
Name of contractor awarded project contract award amount	D.N. Higgins Inc
Contractor's representative, contractor's address and telephone number.	D.N. Higgins Inc 4485 Enterprise Avenue, Naples, FL 34104 239-774-3130

KEY POINTS

- ✓ Beach Nourishment
- ✓ Shoreline Reclamation
- ✓ Engineering Design
- ✓ Project Management
- ✓ Permitting and Regulatory Coordination
- ✓ Owner's Representative
- ✓ Project Oversight



The FDEP Bureau of Natural and Coastal Resources recently completed a beach enhancement project for approximately 1050 linear feet of shoreline in Curry Hammock State Park. Curry Hammock State Park was purchased by the Board of Trustees of the Internal Improvement Trust Fund of the State of Florida from and leased to FDEP in 1991. The land that currently makes up Curry Hammock State Park was a previously developed beach front plot of land. The previous developer had leveled the land and placed a rock revetment at the shoreline.

The goal of the project was to create a public and turtle friendly sandy beach. The existing beach was a combination of compacted marl and clay and was unsuitable for turtle nesting habitat and was not attractive to beach users. A derelict rock revetment along the shoreline also restricted use of the beach by turtles and park goers. The project consisted of the removal of the existing marl, removal of portions of a derelict rock revetment, and the placement of beach compatible sand from the Ortona Sand Mine. The portions of the rock revetment that ran shore-perpendicular were left in place. After the existing beach and derelict rock revetment were removed, beach compatible sand was placed in the excavated template with a minimum depth of 30 inches to allow sea turtle nesting. An approximately 1000 foot long dune was also constructed and will be independently vegetated by Curry Hammock State Park. Shaw designed and permitted the project and provided construction engineering services and overall project management. The project was constructed by D.N. Higgins Inc. The goal of building a turtle nesting friendly beach was accomplished along with providing the park visitors with a rare wide sandy beach located in the middle Florida Keys.



Curry Hammock State Park Beach Enhancement Project

- Preconstruction
- Existing Beach Excavation
- Post Construction

Founders Park Marina Rehabilitation Project Islamorada, Florida

Name of Client	Village of Islands
Client Contact	Myles Milander 87000 Overseas Highway Islamorada, FL 305-664-0015
Key personnel Involved in design phase services	Douglas Mann, P.E.
Design services fee, estimate of construction cost	\$420,142 (fees) \$4.1 million (construction)
Name of contractor awarded project contract award amount	Shoreline Foundation, Inc. \$4.1 million (construction)
Contractor's representative, contractor's address and telephone number.	Shoreline Foundation, Inc. 2781 Southwest 56th Avenue West Park, FL 33023 954-985-0981

- KEY POINTS**
- ✓ Marina Design
 - ✓ Structural Engineering
 - ✓ Construction Administration
 - ✓ Construction Specifications
 - ✓ Marina Rehabilitation



Shaw (then Coastal Planning & Engineering, Inc.) provided a master plan, structural engineering, construction engineering services, and overall project management to the \$4.1 million marina rehabilitation. The marina was originally developed by private interests in the 1960's and expanded in the 1970's. Since that time little capital improvement was invested in the marina. The marina transferred into public ownership in the late 1990's when the Village acquired the lands now known as Founders Park (MM87). With the limited capital improvement, the marina had been experiencing structural and utility failures, and crowded slip arrangements. The 90 slip marina now contains new structural and utility systems, new larger fuel tanks, longer and wider slips for a wide range of boats, a 300-foot marginal dock for day use and yacht tenders, a new 8-inch diameter water main for the marina and the park, and fire plumbing along the docks. Innovative construction materials were utilized in order to both minimize life cycle costs as well as enable Village staff to efficiently perform maintenance repairs. The project was constructed by Shoreline Foundation, Inc.



QUALIFICATIONS FOR GENERAL ENGINEER SERVICES - THE CITY OF KEY WEST

Longboat Key Comprehensive Beach Management Plan (2010-2011)

Name of Client	Town of Longboat Key
Client Contact	Juan Florensa 600 General Harris, Longboat Key, FL 34228 941-316-1958
Key personnel involved in design phase services	Douglas Mann, P.E., D.CE Samantha Danchuk, PhD
Design services fee, estimate of construction cost	\$3.8 million construction (2012 Nourishment Project)
Name of contractor awarded project contract award amount	Jay Cashman, Inc. \$3.8 million construction (2012 Nourishment Project)
Contractor's representative, contractor's address and telephone number.	Jay Cashman, Inc. 3130 SE Slater Street Stuart, FL 34997 772-286-5094

KEY POINTS

- ✓ *Regulatory Coordination and Project Permitting*
- ✓ *Beach Nourishment Construction*
- ✓ *Long-Term Shoreline Management*
- ✓ *Construction Observation*
- ✓ *Plans and Specifications Development*



Since 1992, Shaw (then Coastal Planning & Engineering, Inc.) has been working with the the Town of Longboat Key to manage the Town’s shoreline. In 1995, Shaw was retained to evaluated the performance of the initial 1993 beach restoration project and developed the Longboat Key Comprehensive Beach Management Plan. In 1996/1997, the Town implemented the first nourishment under the plan nourishing 4 miles of critically eroded shoreline with 833,000 cy of coarse sand. Since the Plan was adopted, Shaw has continued to serve the Town on implementation and refinement of its beach management plan.

In 2001, FEMA funding was secured to address hurricane Gordon losses placed over 100,000 cubic yards of sand on the mid-Key hot spot, advancing the shoreline by an average of 114 feet.

A Town-wide renourishment project was completed in 2006 and included 1.8 million cubic yards of offshore sand selectively dredged from two offshore borrow sites. An artificial reef was built to offset anticipated hardbottom impacts from historic and the 2006 beach nourishment project.

During the most recent project in 2011, Shaw completed the North End Beach Renourishment Project which placed approximately 133,000 cubic yards of sand along the beach between monuments R-44 and R-47.

Shaw engineers and project managers are presently coordinating with Manatee County in the development of an Inlet Management Plan for Longboat Pass. This coordination represents a cost savings to both Longboat Key and Manatee County.

Shaw designed two permeable adjustable groins to maintain the desired 130 feet of shoreline width in an area that was typically eroded back to the seawall. Shaw successfully obtained a Joint

Coastal Permit from the FDEP and the USACE and supervised the construction of the project until its completion in April 2010.

In coordination with FDEP and the National Marine Fisheries Service, Shaw developed an innovative and comprehensive hardbottom and mitigation monitoring program in order to mitigate for anticipated impacts to nearshore hardbottom habitats from the 2005/06 Beach Renourishment Project. Shaw conducted pre-construction surveys of the study area, documenting and characterizing 14 acres of nearshore hardbottom habitats. The Town of Longboat Key constructed 1.5 acres of artificial reef as required mitigation for anticipated impacts. Shaw marine biologists conducted four years of bi-annual monitoring surveys for the project on the artificial reefs and nearshore hardbottom habitats.

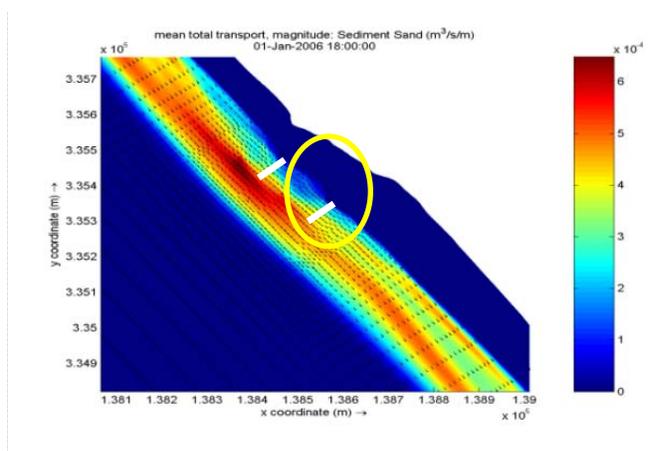
In conjunction with the long-term maintenance of Longboat Key's beaches, Shaw engineers developed the Comprehensive Beach Management Plan and provided all services related to design and state and federal permitting of the beach protection projects. Shaw staff prepared plans and specifications, and conducted geotechnical and cultural resources investigations to locate beach quality sand.

Additionally, Shaw engineers and scientists have conducted volumetric shoreline change comparisons to assess shoreline erosion/accretion trends, established a GIS database for the Town, and assisted the Town in securing state and FEMA funding.

Project managers have developed presentation documents and handouts for the public and for Commission meetings and have presented regularly at Commission meetings.

Surveying activities performed for the Town of Longboat Key by Shaw have included: establishment of Erosion Control Lines, re-established survey monuments, conducted pre- and post-construction beach and hydrographic surveying and monitoring.

Shaw marine biologists have produced all of the required environmental studies and monitoring for the Town.



5 Key Personnel Qualifications

Resumes

Jeffrey Andrews, CIH, PSM

Education

*MS, Ocean Science Nova Southeastern University
BS, Marine Science, University of North Carolina, Wilmington*

Registrations/Certifications

*Professional Surveyor and Mapper (1995), PSM No. LS5805
Certified Inshore Hydrographer, CIH #104*

Qualifications Overview

Mr. Andrews has been performing marine sand searches and offshore geotechnical geophysical and hydrographic surveys in south Florida since 1980. He has conducted more than 35 marine sand searches and mapped more than 100 million cubic yards of beach compatible sand on the continental shelf. Mr. Andrews has unique experience and knowledge about existing west coast of Florida sand resources and about techniques of sand resource prospecting and mapping. He is project manager on a project with Florida Department of Environmental Protection in which all existing information about sand resources along the west coast is being compiled into a GIS database interfaced with an Internet Mapping System.

He has prepared sand search and geotechnical investigation plans and reports, including technical writing supervision of data analysis. He directs offshore sand search geotechnical investigations and geophysical, including bathymetric, seismic, side scan sonar and magnetometer surveys, jet probes and vibracores, and sand grain compatibility analysis.

Mr. Andrews has 25 years of experience conducting bathymetric and topographic surveys, and provided navigation/positioning for numerous offshore projects. He has directed bathymetric and land surveys in Texas, Florida, New York, Virginia, Alaska, Louisiana, Puerto Rico, Brazil and the Bahamas. Such projects involve preparation of hydrographic and topographic survey reports, including technical writing and supervision of data analysis.

Applicable Experience

Examples of Offshore Geotechnical and Geophysical Investigation Experience:

- Dauphin Island, Alabama, Offshore Geotechnical Investigation
- Manatee County, Florida, Port Dolphin Pipeline, Offshore Geotechnical Investigation
- Caillou Lake, LA, Offshore Geotechnical Investigation
- Point Au Fer Island, Louisiana, Offshore Geotechnical Investigation
- Longboat Key, Florida, Florida. Offshore Geotechnical Investigation
- Broward County Florida, Florida Offshore Geotechnical Investigation
- Pinellas County Florida, Florida Offshore Geotechnical Investigation

Examples of Hydrographic and Topographic Survey Experience:

- Longboat Key, FL, Beach and Offshore Survey
- Dauphin Island, AL, Beach and Offshore Survey
- Caillou Lake, LA, Beach and Offshore Survey
- Holly Beach, LA. Borrow Area Bathymetric Survey
- Manatee County Port Dolphin Pipeline, FL, Offshore Survey
- Broward County, Borrow Area
- Panama City Beach, Beach and Offshore Survey
- Broward County, Beach and Offshore Survey

James Barrack, P.E.

Education

MS, Civil Engineering, University of Maryland at College Park, College Park, Maryland

BS, Civil Engineering, University of Maryland at College Park, College Park, Maryland

AA, Engineering, Essex Community College, Essex, Maryland

Registrations/Certifications

Professional Engineer, Civil, 1985, 66093, Active, Florida, 02/2013

Professional Engineer, Civil, 1997, 23608, Active, Georgia, 12/2012

Professional Engineer, Civil, 1988, 34931, Active, Massachusetts, 06/2014

Professional Engineer, Civil, 2000, 018-0007730, Active, Vermont, 07/2014

Professional Engineer, Civil, 1984, 13789, Active, Maryland, 01/2014

Professional Engineer, 2010, 27449, Active, Connecticut, 01/2013

Qualifications Overview

Mr. Barrack has 30 years of experience in engineering and design. He is a registered professional engineer in six states. Currently, as a lead civil engineer he is responsible for civil engineering and design for numerous types of infrastructure projects. He supervises and prepares civil plans, specifications and construction cost estimates for highway projects, railroad tracks and rail facilities, maintenance facilities, housing projects, and utility site and utility corridors.

As a Senior Civil Engineer, he is responsible for the preparation of highway plans and profiles, bridge and tunnel alignment plans, commuter station plans, railroad track alignments and profiles, bus and rail maintenance facility, site civil/utility layouts and designs; technical specifications, construction cost estimates, and project scheduling. He is responsible for design and cost reviews of Federal/State agency projects, QA/QC reviews, risk assessments, related to highway plans and profiles, bridge and tunnel alignment plans, commuter station plans, railroad track alignments and profiles, bus and rail maintenance facility, site civil/utility layouts and designs; technical specifications, construction cost estimates, and project scheduling.

As a Senior Traffic Engineer, he is responsible for the preparation of traffic impact studies, traffic safety studies, hurricane evacuation studies, access studies, parking studies, traffic signal plans, traffic control or maintenance of traffic plans, and construction cost estimates.

Applicable Experience

Lead Civil Engineer, Lake Okeechobee Field Station (Bldg B365) South Florida Water Management District, Broward and Palm Beach Co, FL. The Lake Okeechobee Field Station is a new 10,000 square foot office/maintenance facility. Shaw performed QA/QC reviews of the 30%, and 60% design plans and the design documentation reports. All review comments were entered into the Dr Checks system. All review comments require designer concurrence and a Shaw backcheck to assure critical issues are addressed. Our reviews include multi-discipline engineers providing advice in areas such as design flaws, conflicts, constructability and permitting issues, cost and schedule issues, long lead procurement items, and control of risk.

Lead Civil Engineer, Hillsboro Bank Stabilization Project, South Florida Water Management District, Broward and Palm Beach Co, FL. The Hillsboro Canal Bank Stabilization project is 10.6 miles long and requires dredging, repair, and restoration of the canal banks. This project will restore the conveyance to its design capacity. Shaw performed QA/QC reviews of the 30%, and 60% design plans and the documentation reports. All review comments were entered into the Dr Checks system.

Civil Engineer - Risk Assessment, Project Management Oversight (PMO) for Miami-Dade Transit (MDT), Federal Transit Agency, Miami, FL. Civil Engineer for PMO services to the FTA for the expansion of the transit system which involves elevated fixed guideway extensions, new stations and park-and-ride lots, and an Intermodal Center. The MDT program for expansion of the transit system involves: 1) a proposed North Corridor Metrorail Extension project consisting of a 9.5-mile elevated fixed guideway extension of the existing Metrorail system, including seven new stations and seven park-and-ride lots; 2) a Busway Phase II project consisting of an 11.5-mile extension of the Phase I Busway exclusive bus-lane corridor, including 14 bus stops and 4 park-and-ride facilities; 3) a proposed East-West Corridor project consisting of an elevated fixed guideway extension of the existing Metrorail system, including six new stations and strategically located park-and-ride lots; 4) a proposed Miami Intermodal Center (MIC) /Earlington Heights Corridor project consisting of a 2.4-mile elevated heavy-rail extension of the existing Metrorail system, including one new station at the MIC; and 5) a program for rehabilitation/replacement and/or procurement of vehicles for the Metrorail/Metromover system. Mr. Barrack is responsible for the QA/QC reviews, risk assessment, and engineering design review

of the civil engineering elements of the North Corridor project.

City of East Baton Rouge, South Harrell's Ferry Road, 125878, East Baton Rouge, LA. Two-lane rural roadway widened to a six-lane divided facility (9000 linear feet) with new box culvert construction. Mr. Barrack was the Lead civil engineer in charge of roadway and TCP designs. He provided lead engineering and supervised the CADD designers on the widening of an existing two-lane arterial roadway to a six-lane divided facility. Project included geometric design of 9,000 linear feet of roadway with associated storm drainage, utility relocations, signage, signals, earthwork, and calculations. He prepared the traffic control/sequence of construction plans. The project construction began in 2009.

Massachusetts Highway Dept – Route 122 over Millers River, Orange, MA. Mr. Barrack was responsible for the preparation of the final contract plans, specifications, and cost estimates for the Route 122 roadwork (two-lane roadway), and developed the maintenance of traffic and construction sequence plans for the bridge replacement. The bridge TCP required six individual phases in order to maintain two lanes of moving traffic. New utilities included water and telecom.

Massachusetts Highway Dept – Reconstruction of Route 2A Bridge over I-95, Mass Highway, Lexington, MA. Mr. Barrack was the lead civil engineer and prepared the contract plans, specifications and cost estimates for the Route 2A approach roadwork, profiles, and drainage, and developed the maintenance of traffic and construction sequence plans for the bridge replacement. The new Route 2A bridge will be constructed 3 feet higher than the existing bridge. The TCP required seven individual phases in order to maintain two lanes of moving traffic on Route 2A. A detour plan showing total closure of I-95 (night) was required to allow multiple cranes to swing into place the new bridge beams. A nearby wetland (isolated vegetated wetland) required avoidance, and a modified rockfill slope was implemented on the Rte 2A embankment to reduce impacts.

NASA - Stennis Space Center MS Hurricane Evacuation Study. As senior traffic engineer, Mr. Barrack prepared a hurricane evacuation route traffic analysis for Hancock and Harrison County, Mississippi. The traffic analysis reported the zone populations, link volumes, level of service, volume to capacity ratios, and travel speeds on more than 30 roadway links. Several measures were analyzed

including the impact of contra-flow lanes, use of shoulder lanes, and future lane widenings. The issue of early-, mid-, and late-advance official warnings for the arrival of the hurricane was also included. A major evacuation route travels northward through the NASA Stennis Space Center, that does not allow for public travel since it is a gated (secure) facility. The facility will permit public travel through its property during an evacuation event. The results of the study were shared with Mississippi DOT, Louisiana DOT, and NASA officials.

NRG Energy Montville Power Biomass Project-River Road Middletown, CT. As senior traffic engineer, Mr. Barrack prepared the traffic impact study to determine the impacts of the permanent vehicle trips and the construction-related trips on the surrounding road network for the proposed expansion of the NRG Middletown Power Generating Station. This traffic study prepared the trip generation, distribution, assignment, and LOS analysis for the plant expansion for five intersections. The study also included ConnDOT collision diagrams and accident summaries. The study area included Silver Street and River Road. There were several minor road repairs and sign/pavement marking improvements recommended. No capacity related mitigation was required.

Angela Belden

Education

AS, Business Management, NH Technical Institute, Concord, NH

Registrations/Certifications

Autocad 2011 Certified Professional, 2010

Certified Autodesk Training, 2010

Certified Microsoft Access Training, 2007

Certified Adobe Photoshop CS2 Training, 2007

ESRI Enterprise Dbase Development and Management, 2007

Certified Autodesk Civil 3-D Training, 2006

USGS Metadata for Geospatial & Biological Data Training, 2002

ESRI GIS Training, 2000

Certified Eaglepoint Survey Software Training, 2000

Certified Microsoft Training, 1993

Business Studies, New Hampshire College, Manchester, New Hampshire

Engineering Studies, Broward Community College, Coconut Creek, Florida

Engineering Studies, Palm Beach Community College, Lake Worth, Florida

Qualifications Overview

Ms. Belden has more than 20 years of experience working with various GIS, CAD and engineering programs. She possesses a broad range of experience with geospatial technologies ranging from database design, integration, data validation and integrity, specializing in complex marine GIS file translations between widespread digital formats. She also directs all CAD documentation development and software applications. Her project management experience began in 2000 with environmental resource mapping in Broward County, and has extended to more than 17 benthic habitat mapping projects from Texas to North Carolina. Ms. Belden specializes in customized GIS products that clients require for public distribution.

Ms. Belden routinely utilizes the following software packages:

- ESRI ArcGIS Enterprise Server
- ESRI ArcEditor 9.4
- ESRI ArcView 9.4
- ESRI ArcObjects
- SQL Server
- 2011 Autodesk Civil 3-D
- Autodesk Land Development software
- Autodesk Raster Design imaging software

- Eaglepoint Surveying/Engineering software
- Microstation J Design
- Trimble Terramodel 9.8
- Surfer 9
- Adobe Photoshop CS2
- Microsoft Access

Applicable Experience

Director of GIS & CAD Operations for 17.5-Mile Long Beach Nourishment Project, Panama City Beach, FL. Using both Bentley MicroStation and AutoCAD software, developed conceptual figures; state and federal permit sketches for application; project construction drawings and documentation. Assisted in development of borrow areas for project fill. Performed cut and fill and volume calculations. Directed the development of ArcGIS Enterprise database to assist in the preparation of the Biological Assessment for USFWS and NMFS and preparation of an Essential Fish Habitat Assessment for NMFS. Performed QA/QC of technical drawings and submittals to ensure compliance with required agency/division standards.

Director of GIS & CAD Operations, Lido Key Beach Renourishment Projects, Sarasota, FL. Using both Bentley MicroStation and AutoCAD software, directed and assisted in the development of conceptual figures; state and federal permit sketches for application; project construction drawings and documentation. Assisted in development of borrow areas for project fill. Performed cut and fill and volume calculations. Assisted in the development of Shorebird Monitoring Plan, and performed QA/QC of technical drawings and submittals to ensure compliance with required agency/division standards.

Director of GIS & CAD Operations, Anna Maria Island Beach Nourishment & Storm Drainage Repair, Manatee County, FL. Directed and assisted the development of conceptual figures; state and federal permit sketches for application; project construction drawings and documentation. Assisted in development of borrow areas for project fill. Performed cut and fill and volume calculations. Created construction plans for 8-acre artificial reef. Developed design and construction plans for the placement of a geotextile groin at island's southern jetty. Directed the development of an ArcGIS Enterprise database of nearshore hardbottom resources and mitigative artificial reefs to assist in data analysis and required biological monitoring. Performed QA/QC of technical drawings and submittals to ensure compliance with required agency/division standards.

Director of GIS & CAD Operations, Remote Sensing of Marquesas, National Marine Sanctuary, FL.

Responsible for QA/QC of developed GIS geodatabase using interpretation of benthic habitats from IKONOS satellite imagery. This project involved habitat interpretation and classification of habitats using a NOAA benthic habitat classification system by interpretation and enhancement of IKONOS satellite imagery; in situ video and still photography hyperlinks for interpretation validation and confirmation.

- Historical Geotechnical Sand Search GIS, Collier County, FL
- Geotechnical Sand Search GIS, Captiva Island, Lee County, FL
- Geotechnical Sand Search GIS, Longboat Island, Sarasota County, FL

GIS Project Experience

- Geotechnical Sand Search, Galveston, Texas
- South Siesta Key Beach Restoration Project
- Point Au Fer, LA– Feasibility Study
- USACE Nearshore Hardbottom Mapping & Characterization
- Collier County Hardbottom Edge Survey
- Longboat Key, Florida, Seagrass Monitoring
- Caillou Lake Land Bridge, LA – Feasibility Study
- Dauphin Island, AL – Shore Protection Project
- Reach 7, Town of Palm Beach, Artificial Reef Mapping
- Barataria Basin/Shell Island Louisiana Restoration Project GIS Database
- Broward County Mitigation Monitoring
- Broward County Sea Turtle Monitoring
- Broward County Environmental Resource Mapping
- Sand Key, Pinellas County Artificial Reef Investigation GIS
- South Palm Beach, Florida, Historic Hardbottom Assessment
- Delray Beach, Florida, Fifth Beach Renourishment
- Manatee County Environmental Monitoring
- Longboat Key, Florida, Artificial Reef & Seagrass Monitoring
- Anna Maria Island, Florida Feasibility Study
- St. Lucie County Nearshore Environmental Studies
- Collier County Pre- and Post-Construction Biological Monitoring
- Emerald Isle/Bogue Inlet, NC Habitat Mapping
- North Topsail Beach, NC Nearshore & Offshore Habitat Mapping
- Nantucket Island Shore Protection Project
- Anna Maria Island, Florida, Feasibility Study
- St. Lucie County, Florida, Nearshore Environmental Studies
- Longboat Key, Florida, Artificial Reef Monitoring
- Collier County Biological Monitoring

Joshua Blanco, CHMM, CPESC-IT

Education

BS, Biology, Florida Atlantic University, Boca Raton, FL

Additional Training/Continuing Education

OSHA 8-hour Annual Refresher

OSHA 40-hour HAZWOPER

NIOSH 582 Asbestos Sampling and Evaluation Course

Registrations/Certifications

Certified Hazardous Materials Manager (CHMM), 2006, 14027, Active, Nationwide

Certified Professional in Erosion and Sediment Control In Training (CPESC-IT) Active

AHERA Asbestos Inspector Active

FDEP Qualified Stormwater Management Inspector

FDOT BT-05-0078 Maintenance of Traffic Certification

FDOT Project Development & Environment Manual Process Training

Open Water Diver, 1988, 88243916, Active, Nationwide

Qualifications Overview

Mr. Blanco has performed and managed permitting for environmental cleanup and construction projects and environmental compliance audits for state local and private clients; Phase I, Phase II, NEPA environmental due diligence assessments and environmental impact studies for state local and private clients; soil and groundwater investigations; design, operation and maintenance of groundwater remediation systems; storage tank inspection and compliance programs; oversight of hazardous, non-hazardous, and solid waste management operations; and oversight of storage tank removal operations.

Currently Mr. Blanco's roles are as a project manager for an FDOT contamination and remediation contract. He leads projects involving Phase I and Phase II environmental assessments and indoor air quality assessments. Mr. Blanco also serves as the office safety representative responsible for developing and reviewing health and safety plans, and serves as one of the office emergency response program coordinators.

Applicable Experience

Project Manager/Environmental Consultant, FDOT 6, Contamination Assessment and Remediation Contract. Mr. Blanco supported FDOT's business with an emphasis on the identification, handling, assessment and remediation of hazardous and non-hazardous materials on State roadways or any situation that presents an immediate threat to the environment or citizens. Mr. Blanco's responsibilities included Level I site evaluations, impact to construction

assessments, bridge asbestos inspections, remediation, compliance, and construction oversight. Projects have included:

- Multiple impact to construction assessments in Miami-Dade and Monroe Counties for construction projects including SR 5 North Roosevelt Project, SR 826-836 Interchange project, SW 57th Ave., S. Dixie Highway project, US-1 Segment 3 project, NW 27th Ave. project
- Multiple soil removal and disposal projects including SR 826-836 Interchange project, MIC Hertz project, MIC Avis project, S. Dixie Highway project
- Multiple UST removal and disposal projects including SR 826-836 Interchange project, MIC Hertz project, MIC Avis project
- S. Dixie Highway construction project. Excavate and dispose contaminated soils along FDOT corridor and install four drainage structures in the contaminated areas

Project Manager, Dragados USA, I-595-

Improvement Project Broward County, FL. This contract is an environmental consulting services contract including environmental permit compliance, environmental monitoring, dewatering discharge treatment, environmental site assessment, and remediation in support of roadway construction activities.

Project Manager/ Environmental Consultant, 7-Eleven, Inc., Alliance Program, National Contract, Various Locations. Mr. Blanco supports this contract through emergency spill response, performing, Phase I assessments, Phase II subsurface investigations, conducting site remediation and cleanup activities, and performing environmental compliance audits.

Environmental Consultant, Miami International Airport, Miami, FL. Multiple subsurface investigations and other consulting services at Miami International Airport.

Professional Affiliations

Academy of Certified Hazardous Materials Managers, Senior Level

Publications/Presentations

Greg Butler and Joshua Blanco, Management of Tritium Exit Signs, Academy of Certified Hazardous Material Managers Convention, Atlanta, GA, 2010

J. Kenneth Brinson, P.E.

Education

Completed Post-Graduate Coursework in Environmental Engineering

BS, Engineering, University of Central Florida, Orlando, Florida

Additional Training/Continuing Education

8-Hour Hazardous Waste Operations and Emergency Response Annual Refresher, Annual

40-Hour Hazardous Waste Operations and Emergency Response, Metcalf & Eddy, 1994

Registrations/Certifications

Professional Engineer, Florida, 1999, No. 54772, Active, (exp 02/2013)

Qualifications Overview

Mr. Brinson has over 19 years of environmental consulting experience including petroleum and chlorinated hydrocarbon contamination assessment and remediation, regulatory permitting and compliance, remediation system installation oversight, and system operation and maintenance oversight. Site remediation system design experience includes: soil vapor extraction; air sparge/soil vapor extraction (AS/SVE); air sparge with passive venting; multi-phase extraction (MPE); vacuum-enhanced groundwater recovery; electrical resistance heating (ERH); groundwater pump and treat with discharge to infiltration gallery, sanitary sewer, and NPDES; free product recovery; in-situ chemical oxidation (ISCO) using potassium permanganate (KMnO₄) and hydrogen peroxide; and, bioremediation using ORC, HRC, and sodium lactate.

Applicable Experience

Senior Engineer for Florida Department of Transportation, District 6, Various Locations, FL.

Currently supports the Contract Manager to engineering support for assessment and remediation activities for various sites including petroleum, chlorinated solvents, and metals.

Senior Engineer for FDEP Petroleum Remediation Sites, Various Locations, FL.

Responsible for groundwater and soil remediation system designs, system installation oversight, and system operation and maintenance oversight. Duties include field training of technicians and engineers to conduct pilot tests and to operate and maintain remedial systems. Engineer of Record for South Dade Landfill methane gas recovery project.

Task Manager and Engineer of Record for FDEP Drycleaning Solvent Cleanup Program Contract, Various Locations, FL.

Project Manager for remediation projects for private industry clients. Responsible for project management, client relations, groundwater and soil remediation system designs, system installation oversight, and system operation and maintenance oversight. Projects include drycleaning facilities and retail fuel facilities. Site remediation technologies include SVE, AS/SVE; groundwater pump and treat; HRC, and ISCO using KMnO₄ and sodium lactate injection. Responsible for the final report preparation and/or review on remedial action evaluations, remedial action plans, and remedial system status reports. Duties include field training of technicians and engineers to conduct pilot tests and to operate and maintain remedial systems.

Related Experience

- Senior Engineer, Delta Environmental Consultants, Inc., Norcross, GA.* Responsible for project management, groundwater and soil remediation system designs, oversight of system installations, and regulatory correspondence and compliance for active remediation and bioremediation sites. Projects include retail fuel facilities and bulk fuel terminals. Duties include preparation of bid specifications, reviewing contractor and vendor bids, and equipment and contractor selection on system installation projects. Responsible for the evaluation of pilot test data and final report preparation on corrective action designs and final report review on system operation and maintenance and site monitoring projects.
- Project Engineer, HANDEX of Georgia, Norcross, GA.* Responsible for developing the project scope and system design for site remediation projects, oversight of system installations and management of system operation and maintenance. Projects include retail fuel facilities, bulk fuel terminals and industrial facilities. System designs include air sparging/soil vapor extraction systems, dual-phase extraction systems, free product recovery systems and one phytoremediation pilot study project. Other duties include management of staff engineers and field technicians, reviewing field data for completeness, field training of technicians and engineers to operate and maintain remedial systems, and establishing system troubleshooting and maintenance procedures. Conducted Risk-Based Correction Action (RBCA) modeling for site closures.

- *Project Engineer, HANDEX of Florida, Mt. Dora, FL.* Responsible for hydrogeological characterization, pilot testing, groundwater modeling, remedial system design and report preparation for soil and groundwater remediation projects at petroleum storage facilities. System designs included groundwater pump and treat with air stripping and/or carbon treatment and re-infiltration, soil vapor extraction and air sparging/soil vapor extraction systems with off-gas treatment, and vacuum-enhanced groundwater extraction systems. Responsible for cost estimating, equipment evaluation and preparation of “as-built” drawings for system installations. Accountable for monitoring and maintenance scheduling, data evaluation, monitoring report preparation, system troubleshooting and design modifications for system O&M projects. Duties included proposal preparation, cost tracking, client relations and regulatory correspondence. Performed Phase I and Phase II assessments for real estate divestments/transfers.
- *Environmental Specialist, Metcalf & Eddy, Orlando, FL.* Supervised monitoring well installations and conducted groundwater sampling, top-of-casing surveying, and slug testing for site assessments at petroleum storage facilities. Responsible for data evaluation and report preparation for contamination assessments. Performed vapor extraction pilot tests and aquifer pumping tests and reduced field data for remedial system designs. Conducted field operation and maintenance of groundwater remediation systems and prepared system monitoring reports.
- *Environmental Specialist, Gary Dounson & Associates, Inc., Gainesville, FL.* Coordinated tank closure activities with site owners, subcontractors, and regulatory agencies. Conducted tank closure sampling activities and prepared tank closure reports. Performed field activities for site assessments and prepared Contamination Assessment Reports. Field supervisor for remedial system installations. Prepared Comprehensive Quality Assurance Plan (CompQAP) for state regulatory approval.
- *Engineer, AAI Corporation, Maitland, FL.* Responsible for developing fault isolation and test procedures for UYK-44 anti-submarine warfare sonar system maintenance trainer, panel design and software configuration management.

Thomas J. Campbell, P.E.

Education

ME, Ocean-Coastal Engineering, FAU

BE, Civil and Structural Engineering, Cooper Union

Registrations/Certifications

Professional Engineer: Florida, Alabama, Louisiana, Texas, New York, North Carolina, Virginia

Qualifications Overview

Mr. Campbell has directed environmental and physical monitoring, coastal engineering analysis, design, geotechnical surveys and numerical modeling for beach restoration projects for 36 years and has unmatched practical experience in beach design on the east and gulf coasts of the U.S. Under his direction, more than 70 beach restoration projects have been constructed nationwide.

Mr. Campbell is a registered Professional Engineer in seven states, heads the Scientific Advisory Committee for the American Shore and Beach Preservation Assoc. (ASBPA), is a Director of the Florida Shore and Beach Preservation Association and is on the editorial board of the FSBPA publication, *Shore and Beach*.

Mr. Campbell is also a contributing author to the book *Beach Nourishment and Protection*. In 1985, he was the Chairman of the Engineering Committee of the Florida Governor's "Restore our Coast" Task Force. In 1995, Mr. Campbell served on the National Research Council's Marine Board Committee on Beach nourishment. In 2003, Mr. Campbell was the Chairman of the Design Panel of a State and Federal (LCA) program that resulted in the program: "Implementing a Louisiana Barrier Island and Barrier Shoreline Restoration Program."

He received the Jim Purpura Award from the FSBPA in 1982 for outstanding contribution to coastal engineering in the State of Florida. This year, Mr. Campbell received ASBPA's Morrrough P. O'Brien Award for his contributions to the coastal engineering profession.

Applicable Experience

Comprehensive Long-Range Coastal Management.

Mr. Campbell has managed the preparation and/or review of more than 20 coastal and inlet management plans as well as sand bypass feasibility studies. He has supervised engineering analysis and developed program designs based on analysis of historical data, coastal processes, geotechnical and hydrographic information, environmental concerns, and permitting limitations, as well as cost/benefits analysis, funding options, and the potential for regional cost savings.

Regional Sand Search and Hydrographic

Investigations. Mr. Campbell has directed sand search investigations in a total of 23 geographic locations including 17 locations in Florida and others in New Jersey, New York, Louisiana, Texas, Georgia, and Virginia. Under his direction his team has identified billions of cubic yards of sand resources on the Continental Shelf in State and Federal waters, including finding sand in areas where no sand was believed to exist. Of that volume, hundreds of millions of cubic yards of beach quality sand have been either placed on beaches or reserved for use in future beach nourishment projects.

Beach Nourishment and Coastal Structures Design and Permitting.

As Principal in Charge and Chief Engineer, Mr. Campbell has directed the design and construction of more than 70 beach nourishment projects and 30 projects involving coastal structures. These projects include numerical modeling and statistical analysis of coastal processes, engineering design, modeling of projected levels of protection provided by various beach designs, beach and hydrographic surveys, storm damage assessments, economic evaluations, permitting, funding and cost estimating.

Environmental Monitoring and Assessments Related to Beach Nourishment Projects.

Mr. Campbell has been Principal in Charge for beach nourishment projects which included detailed qualitative and quantitative environmental and coastal assessment; monitoring of the project area before and after construction; biological inventories and mapping of hardbottom habitats; water quality sampling; sedimentation rate analysis and infauna analysis. Representative projects that include environmental monitoring are: Collier County Beach Renourishment Project, Anna Maria Island Beach Nourishment Project, Boca Raton Beach Restoration Project, and Delray Beach Beach Renourishment Project.

Funding Strategies. Mr. Campbell is exceptionally well versed in funding options and the requirements for eligibility and opportunities for combining federal, state, local, and private financial support. He assisted the Department of Environmental Protection, through the "Restore Our Coast" Task Force to develop funding mechanisms for coastal erosion projects throughout Florida. Since that time, Mr. Campbell has obtained Florida funding for eight beach nourishment projects and received the 1997 "Distinguished Service Award" from the FSBPA for leadership of the legislative committee which promoted Florida's dedicated funding source for beaches.

Daniel J. Drommerhausen

Education

MS, Hydrogeology (groundwater modeling), University of Georgia, Athens, Georgia - *Masters Thesis: The Use of Electromagnetic Conductivity and Installation of Monitor Wells to Evaluate Nitrate Plumes at Dairy Farms.*

BA, Geology, Augustana College, Rock Island, Illinois

Additional Training/Continuing Education

Environmental Drilling and Field Investigations Course, NGWA, Tampa, Florida

U.S. EPA Contractor Standard Operating Procedures and Overview Workshop, U.S. EPA, Athens, Georgia

Expedited Site Assessment Tools, The Environmental Institute, Atlanta, Georgia

Monitored Natural Attenuation for Groundwater Seminar, U.S. EPA, Atlanta, Georgia

Registrations/Certifications

Professional Geologist: Georgia, PG001477; Illinois, 196.001038; Indiana, IN2078

Site Health and Safety Coordinator, 1995

Qualifications Overview

As a Senior Project Manager and hydrogeologist, Mr. Drommerhausen has 18 years of experience in the performance and technical management of Solid Waste Assessments, Contamination Assessments, Site Investigations, RCRA/CERCLA Site Investigations, Remedial Investigations/Feasibility Studies, Initial Remedial Actions, and Remedial Design/Remedial Action Implementation at petroleum and hazardous materials/waste sites. Specialization includes analytical and field data evaluation/management, slug testing and hydraulic conductivity analyses, physical/chemical hydrogeology, project QA/QC, remedial design, and groundwater modeling.

Applicable Experience

Lee County Landfill. Hydrogeologist responsible for the development of a groundwater impact assessment model to meet revised design requirements at the facility.

Lee County Landfill Expansion. Hydrogeologist responsible for the development of cross sections, isopach and potentiometric surface maps, and groundwater impact assessment model and technical assessment of packer and slug test data for the site.

Lake County C/D Landfill. Hydrogeologist responsible for the review of the hydrogeologic investigation.

Congress Development Company Landfill. Hydrogeologist responsible for assessment monitoring activities and groundwater reporting.

CC Landfill. Hydrogeologist responsible for the technical assessment of the hydrogeologic investigation, groundwater impact assessment, and groundwater monitoring report.

Northwest Cook County Balefill. Hydrogeologist responsible for review of cross sections, isopach and potentiometric surface maps, and packer and slug test data.

Streator Area Landfill Expansion. Hydrogeologist responsible for the development of cross sections, isopach and potentiometric surface maps, and groundwater impact assessment model and technical assessment of packer and slug test data for the site.

Livingston County Landfill. Hydrogeologist responsible for the hydrogeologic report and review of the groundwater impact assessment.

Livingston Landfill Expansion. Hydrogeologist responsible for the development of cross sections, isopach and potentiometric surface maps, and groundwater impact assessment model and technical assessment of packer and slug test data for the site.

Kankakee Regional Landfill. Hydrogeologist responsible for the development of cross sections, isopach and potentiometric surface maps, and groundwater impact assessment model and technical assessment of packer and slug test data for the site. Provided expert testimony during the landfill siting process.

Winnebago Landfill Expansion. Hydrogeologist responsible for the development of cross sections, isopach and potentiometric surface maps, and groundwater impact assessment model and technical assessment of packer and slug test data for the site. Provided expert testimony during the landfill siting process.

City of Rochelle. Hydrogeologist responsible for the technical assessment of the hydrogeologic investigation and groundwater impact assessment for the expansion of the Rochelle Municipal Landfill No. 2. Also provided expert testimony during the landfill siting process.

Fox Moraine Landfill. Hydrogeologist responsible for the development of cross sections, isopach and potentiometric surface maps, and groundwater impact assessment model and technical assessment of packer and slug test data for the site. Provided expert testimony during the landfill siting process.

Uniform Tubes Facility, Miami, FL. Performed the installation of monitor wells and coordinated monitor well sampling activities at the Uniform Tubes Facility.

Coca-Cola Plant, Leesburg, FL. Conducted a soil investigation.

Clinton Landfill. Hydrogeologist responsible for the technical assessment of the hydrogeologic investigation and groundwater impact assessment for the expansion of the Clinton Landfill.

Indian Creek Landfill No. 2 Expansions. Hydrogeologist responsible for the development of cross sections, isopach and potentiometric surface maps, and groundwater impact assessment model and technical assessment of packer and slug test data for the site. Provided expert testimony during landfill siting process.

Planet Recovery Systems. Assisted in the preparation of modifications to the design and operating plan at the existing solid waste transfer station.

Will County Land Use Department – Waste Services Division. Responsible for reviewing various IEPA permit applications that propose initial confidence limits, AGQS and MAPC values and changes to groundwater and leachate monitoring plans. Review these applications for compliance with regulations and statistical methods.

Clinch County Landfill, GA. Project Manager and Hydrogeologist responsible for coordinating site assessment activities. Evaluated the extent of contamination at the site through the use of groundwater modeling software (MODFLOW, MODPATH, and MT3D). Wrote and produced the Assessment of Corrective Measures Report for the site. Coordinated and executed meetings with the County, informing them of site conditions and possible solutions for the problems at the site. Worked with the state regulatory agency on developing a Corrective Action Plan for the landfill.

Dawson County Landfill, GA. Project Manager and Hydrogeologist responsible for coordinating site assessment activities. Evaluated the extent of contamination at the site through the use of groundwater modeling software (MODFLOW, MODPATH, and MT3D). Wrote and produced the Assessment of Corrective Measures Report for the site. Coordinated and executed meetings with the County, informing them of site conditions and possible solutions for the problems at the site. Worked with the state regulatory agency on developing a Corrective Action Plan for the landfill.

Elbert County Landfill, GA. Project Manager and Hydrogeologist responsible for coordinating site assessment activities. Evaluated the extent of contamination at the site through the use of groundwater modeling

software (MODFLOW, MODPATH, and MT3D). Wrote and produced the Assessment of Corrective Measures Report for the site. Coordinated meetings with the County, informing them of site conditions and possible solutions for the problems at the site. Worked with the State Regulatory Agency on developing a Corrective Action Plan for the landfill.

Haralson County Landfill, GA. Project Manager and Hydrogeologist responsible for coordinating site assessment activities. Evaluated the extent of contamination at the site. Wrote and produced the Assessment of Corrective Measures Report for the site. Coordinated and executed meetings with the County and the public, informing them of site conditions and possible solutions for the problems at the site. Worked with the state regulatory agency on developing a Corrective Action Plan for the landfill.

Jackson County Landfill, GA. Project Manager and Hydrogeologist responsible for coordinating site assessment activities. Evaluated the extent of contamination at the site through the use of groundwater modeling software (MODFLOW, MODPATH, and MT3D). Wrote and produced the Assessment of Corrective Measures Report for the site. Coordinated meetings with the County, informing them of site conditions and possible solutions for the problems at the site. Worked with the state regulatory agency on developing a Corrective Action Plan for the landfill.

Jefferson County Landfill, GA. Project Manager and Hydrogeologist responsible for coordinating site assessment activities. Evaluated the extent of contamination at the site through the use of groundwater modeling software (MODFLOW, MODPATH, and MT3D). Wrote and produced the Assessment of Corrective Measures Report for the site. Coordinated meetings with the County, informing them of site conditions and possible solutions for the problems at the site. Worked with the state regulatory agency on developing a Corrective Action Plan for the landfill.

Lumpkin County Landfill, GA. Project Manager and Hydrogeologist responsible for coordinating site assessment activities. Evaluated the extent of contamination at the site through the use of groundwater modeling software (MODFLOW, MODPATH, and MT3D). Wrote and produced the Assessment of Corrective Measures Report for the site. Coordinated meetings with the County, informing them of site conditions and possible solutions for the problems at the site. Worked with the state regulatory agency on developing a Corrective Action Plan for the landfill.

Jorge L. Fernandez, E.I.

Education

BS, Civil Engineering, Florida International University, Miami, Florida

AA, Civil Engineering, Miami Dade Community College, Miami, Florida

Registrations/Certifications

Engineer in Training, 2002, #1100008110, Florida

General Contractor, 2005, CGC1509152, Inactive, Florida

Certified Elevator Inspector, 2005, CEI295, Florida

Qualifications Overview

Mr. Fernandez has a civil engineering background with experience in industrial and residential construction and environmental management. His education focused on structural design and analysis, with additional coursework related to heavy construction and environmental engineering. Mr. Fernandez has over 20 years experience handling complete turnkey industrial/commercial land development projects, landfill leachate/groundwater treatment plant construction, operation and maintenance (O&M) projects, landfill gas extraction construction, various contaminated groundwater control and earthwork projects, environmental emergency response projects, as well as multiple residential development and remodeling projects. He is skilled in database development and software systems integration, as well as competent in various software programs and applications related to the engineering and construction industries. Competent skills in Primavera Planner, AutoCAD, Microsoft Office Suite, MathCAD, Filemaker Pro, ETABS, SAP 2000, HTML and XML.

Applicable Experience

Project Manager for various environmental and infrastructure management projects for local, state and federal government agencies, such as the Miami-Dade Public Works and Waste Management Department, Miami-Dade Aviation Department (MDAD), Miami-Dade Transit Authority (MDX), FDEP, and the U.S. Army Corps of Engineers. Also, involved with oversight of commercial clients with infrastructure projects such as CSX Transportation's railroad-based projects. Duties include business development, contract development and negotiation, project estimating and scheduling, invoicing and payment management, claims management, labor and materials procurement, regulatory agency coordination and all other environmental/infrastructure management issues pertaining to said projects.

Six years of solid waste project management experience includes construction management of the North and South Dade Landfill's gas extraction well and pipeline expansions and modifications projects, as well as handling the O&M, and complete reporting requirements of flare systems for both aforementioned landfills. In addition handles the O&M of South Dade Landfill's two sequential batch reactors processing leachate and groundwater from the active & inactive landfills, with all of the associated reporting requirements.

Performed various bilingual Phase I Environmental due diligence projects in México, as well as serving as a translator for environmental training seminars held in México.

Environmental Coordinator for the North Terminal Development (NTD) program at Miami International Airport (MIA). Duties included coordinating with all NTD contractors, MDAD, American Airlines and Miami Dade Department of Environmental Resources personnel for day to day operations such as inspections, equipment/site shut-downs and general site work. Responsible for the supervision of all dewatering activities, soil and water sampling, fuel line removal and abandonment, soil remediation and handling procedures, asbestos removal, and all other environmental issues that affected the construction of the NTD program.

Assistant Project Manager for the MIA NTD Jet Fuel Hydrant System. Responsible for assisting in design review, plans and permit processing and administration, MIA logistics coordination, day-to-day contractor field oversight, payment application audit control and change order processing.

Assistant Project Manager for industrial and residential projects. Responsible for labor team allocation and management, materials/equipment procurement, as well as inspection coordination with applicable regulatory agencies. Supervised the following construction trades: rough and finish carpentry, masonry, structural forming and steel reinforcement, concrete placement, steel fabrication and erection, surveying and site layout, all underground utilities, electrical, plumbing, mechanical, roofing, glazing and cladding, flooring, landscaping, as well as paving and drainage.

Project Estimator/Scheduler for industrial and residential projects. Handled the payment applications, as well as managing the sub-contractor bidding and awarding process. Processed change orders for the ongoing projects. Duties also included CPM scheduling, of both the industrial and residential projects.

Yudex A. Hasbun, P.E.

Education

BS, Civil Engineering, National University, Dominican Republic

Registrations/Certifications

Professional Engineer, Florida, PE 54810, Active
(exp 02/2013)

Professional Engineer, North Carolina, PE No. 33049

Engineer Intern, Florida, No. 110000815

Qualifications Overview

Mr. Hasbun has over 22 years experience in managing a wide variety of site investigations, hazardous waste management and disposal, environmental permit acquisition, and remediation construction involving large-scale groundwater treatment, soil excavation, and in-situ soil treatment. In addition, he works with the construction group to provide environmental and civil construction projects for FDOT Districts 4 and 6, Miami-Dade Expressway Authority (MDX), SFWMD, and private clients. He also has experience managing analytical laboratories and conducting Quality Assurance /Quality Control audits and implementing QA procedures.

As Project Engineer, his primary responsibilities include the design, implementation, management, and operation and maintenance of groundwater and soil RAPs. Performance of groundwater modeling, contamination assessment plans, contamination assessment reports, and MOPs. Preparation of as-built drawings, quarterly systems reports, UST removals and TCARs, Phase I and Phase II environmental site assessments, hazardous waste removals, SPCC Plans, and air permitting projects.

Applicable Experience

Florida Department of Transportation, District 6 – Contract Manager. Mr. Hasbun has been the Contract Manager for the *District Wide Contamination Assessment and Remediation Services Contract* for FDOT District VI from 2010 to the present. In that capacity, Mr. Hasbun's responsibilities include oversight of the contract management team and program quality control; responsible for customer satisfaction; participate in monthly and weekly meetings, as needed; review contract submittals and reports; coordinates corporate support; oversight of the development of Work Plan/Cost Estimates and coordinate with the District Contract Manager; receive all work orders from FDOT District 6 and assign, manage and direct project team to ensure responsive service to FDOT District 6; monitor project team performance via staff meetings and team communications and direct contract management

functions, including cost and schedule tracking and reporting to FDOT District 6; control and manage program activities to ensure all technical quality, H&S, QA and regulatory compliance requirements are met; prepare contract status reports and attend all regular and specially scheduled meetings; participate in monthly contract evaluation with senior management; provide weekly updates and calendars to FDOT District 6; provide monthly contract status reports to FDOT District 6 and ensure and confirm FDOT District 6 satisfaction on all contract activities; review and approve all project invoices and quality assurance reviews of all documents (Work Plan/Cost Estimates, project reports, updates and invoices); Serve as oversight for technical/engineering projects; serve as oversight for technical/engineering aspects of projects; mentor and grow professional staff; sign/seal/approve technical plans and reports and provide technical information and direction.

Construction activities include site preparation, clearing and grubbing, construction and installation of transportation and non-transportation related construction features such as removal and/or replacement of existing asphalt or concrete pavement; removal, relocation, replacement of underground utilities such as drainage systems, water mains, sewer mains etc.; the installation and operation of dewatering systems to facilitate installation of such underground utilities; installation of sheet pile to create cofferdams for the installation of certain construction features in the dry, etc.

Florida Department of Transportation, District 4 – Contract Manager. Mr. Hasbun was the Contract Manager for the *District Wide Contamination and Assessment Services Contract* for FDOT District 4 from 2003 to 2012. In that capacity, Mr. Hasbun's responsibilities included the development of Work Plan/Cost Estimates and receive all Letters of Authorizations from FDOT District 4; manage administrative functions for contract including accounting, procurement, resources, etc.; assign, manage, schedule, and direct contract staff to ensure responsive service to FDOT District 4. Additional responsibilities included project execution, maintaining close communication with FDOT District 4 and project personnel; project cost control, prepare/review status reports and invoices, ensure safety and quality controls are met on all projects; review final reports and invoices for submittal to FDOT District 4; direct contract management functions, including cost and schedule tracking and reporting to FDOT District 4; review final invoices for accuracy prior to submittal to FDOT

District 4; control program activities to ensure technical quality, H&S, QA, and regulatory requirements are met; prepare contract status reports and attend all regular and specially scheduled meetings; participate in monthly contract evaluation with senior management; provide minimum weekly update reports and monthly status reports to FDOT District 4 and ensure and confirm FDOT District 4 satisfaction on all contract activities; sign/seal/approve all technical plans and reports.

Miami-Dade Expressway Authority (MDX) – Contract Manger. Mr. Hasbun was the Contract Manager for the *Environmental Consultant Contamination Assessment and Remediation Services Contract* for MDX from 2005 to 2009. In that capacity, Mr. Hasbun served as the Contract Manager and had overall responsibility for the supervision, management, and progress of contract elements. His duties included communicate with the MDX Project Manager; receive and execute all task assignments, task assignment change orders, and work change directives; assign appropriately qualified personnel and oversee implementation of each task; prepare work plan packages, cost estimates, and weekly status reports; direct all contract management and administrative functions, including cost and schedule tracking; and assure adherence of all operations and tasks.

South Florida Water Management District – Contract Manager. Mr. Hasbun has served as the Contract Manager for the *Environmental Risk Assessment Services Contract* for the South Florida Water Management District from 2005 to 2012. In that capacity, Mr. Hasbun had overall responsibility for the supervision, management, and progress of all contract elements. His duties included communicate with the District’s Project Manager; receive and execute all work orders, work order revisions, and work change directives; assign appropriately qualified personnel, and oversee implementation of each task; prepare work plans, cost estimates, and weekly status reports; direct all contract management and administrative functions, including cost and schedule tracking; and assure adherence of all operations and tasks.

Key features of his management approach to the SFWMD included close coordination with the SFWMD; project cost control; project schedule control; management of subcontractors; corrective action procedures; project tracking and data management; quality control and sign/seal/approve technical plans and reports.

James Hill

Education

AA, Miami Dade Community College, Miami, Florida

Additional Training/Continuing Education

Florida Construction School

OSHA 40-hour Health and Safety Training

OSHA 8-hour Annual Refresher Training

OSHA 20-hour Hazardous Waste Site Supervisor Training Course

Hazardous Material Training

Hazardous Material/Right to Know

Field Operations Training

FDOT Traffic Safety in the Work Area Course

Asbestos Contractor/Supervisor Course

Pollutant Storage Tank Training

Journeyman Carpenter

Building & Plumbing Code Course

Hazardous Material Handling

Qualifications Overview

Mr. Hill joined the company in 1994 as an on-site supervisor with over 20 years of experience in environmental and general construction. He is experienced in the performance and management of soil excavations to support Interim Remedial Action, procurement and installation of groundwater treatment equipment, construction of infiltration galleries, and as liaison with regulatory agency inspectors. In addition, Mr. Hill is a Journeyman carpenter, and is experienced in electrical and plumbing maintenance.

Applicable Experience

Construction Field Manager, FDOT, Demolition, Excavation and Removal of Lead-Contaminated Soils. Performed demolition, excavation, and removal of lead-contaminated soils of FDOT condemned buildings for highway right-of-way for Interstate 595.

Project Supervisor for Remedial System Installation at Concourses E and F at Miami International Airport. Supervised a field crew of over 20 equipment operators, electricians, recovery technicians and tradesmen. Provided oversight for concrete cutting, soil excavation, horizontal and vertical well recovery well installation, vault installation, concrete dowel placement, piping installation, backfilling, pavement restoration, and electrical contracting. This work was performed at night to meet client schedules. I also supervised the layout of concrete footers and the installation of remedial equipment including a 2,000-gallon oil/water separator, three 2,000-gallon recirculation tanks, a 500-gallon per minute air stripping

tower, two 20,000-pound carbon cells, a 125-hp 4,000-cubic feet per minute (cfm) vacuum blower, and a 5,000-cfm thermal oxidation unit. Further supervised all the piping for these systems, including 12-inch diameter polyvinyl chloride (PVC) vapor lines, 8-inch diameter PVC groundwater lines and specially fabricated steel header lines for soil vapor extraction blower exhausts.

Team Leader, Emergency Response Involving a Mercury Spill, Miami International Airport, Miami, FL. Provided direct supervision for the response team, set up spill containment, directed the procurement of specialty equipment, i.e., high efficiency particulate air filters, Jerome meters, established work zones, and directed the response crew in the cleanup of the spilled mercury.

Construction Field Manager, Miami, FL. Remedial activities involved cleanup of various service station facilities including demolition of existing stations and removal of underground storage tanks; excavation of contaminated soils and recovery of free floating product in accordance to Chapter 62-770, FAC; and supervision of tank farm, recovery system, and groundwater treatment systems installations.

Site Superintendent, West Palm Beach, FL. Removal and closure assessment of approximately 48 underground storage tanks, 8 oil/water separators, and 28 hydraulic lifts at various locations along State Road 80 in West Palm Beach, Florida.

David Hoot, P.E.

Education

BS, Civil Engineering - Environmental Engineering & Water Resources, Michigan Technological University, Houghton, MI

Registrations/Certifications

Professional Engineer, Florida, 1985, No. 35970

Professional Engineer, Georgia, 1982, No. 13518

Qualifications Overview

Mr. Hoot is responsible for the provision of engineering management, project planning and development, client liaison, and construction related services for solid and hazardous waste. He oversees or manages projects including siting, due diligence, environmental assessments, regulatory permitting/compliance, engineering analysis and design, and construction management and construction quality assurance. He has also provided support to clients' solid waste acquisition/siting programs, including technical proposals, public presentations, public hearings, and expert testimony.

Mr. Hoot directed, coordinated, and performed feasibility studies and pre-development services for a variety of commercial, industrial and solid waste facilities/sites, planning facility, expansion or development. Reviewed/evaluated conceptual plans relative to location; access, infrastructure alternatives and utility availability, permits and regulations, estimate of design and construction costs and environmental restriction/issues which were associated with solid/hazardous waste type projects. Acquired documentation, prepared pro forma/studies and presentations to enhance client/owner understanding and decision making.

Applicable Experience

Melbourne Transfer Station Design, Brevard County, FL. Senior Project Engineer and civil/site advisor assisting the project manager with the completion of design, permitting and construction administration of a 60,000-square foot solid waste transfer station. Provided team and client coordination, project direction and guidance, civil/site design review/analysis, construction document preparation, and QA/QC. Project involved two adjacent sites associated with the Sarno Road Class III Landfill, and required the new Transfer Station, Scale House and Operations Office to be constructed while keeping the existing transfer station operational, demolition of existing transfer station and construction of a new Household Hazardous Waste Recycling Facility. Projects included design and permit coordination of the potable water

system and City service connections, groundwater irrigation system, including wells and pumping facility, and fire water/sprinkler system, including booster pump house design. Project also included sanitary sewer system design, and leachate collection system and treatment facility design, and reuse piping from the landfill to the transfer station. Provided water, sanitary sewer and industrial wastewater system design, including spill prevention and collection systems, for the Household Hazardous Waste Recycling Facility.

Sarno Road Class III Landfill, Masterplan and Permit Renewal, Brevard County, FL. Project Manager and senior engineer for the masterplan development of the present and future operations/activities of the Sarno Road Class III Landfill (SRL). Project included cell layout, volume and airspace calculations, stormwater management masterplan, environmental and hydrogeologic assessments of various properties, operational planning, and future end use planning, for both existing and future property scenarios. The masterplan resulted in approximately 15 plus years of additional site life (27 years total) and identified approximately 13 acres of existing landfill property which could be utilized as landfill space through site, operational and permitting modifications. Prepared and submitted the permit renewal for SRL in 5 months, including site drawing revisions, hydrogeologic investigations and reports, and conceptual stormwater management permit modification.

Sarno Road Class III Landfill, Gas Migration Monitoring Plan and Well Installation, Brevard County, FL. Project Manager and senior engineer for the development and preparation of the gas migration monitoring plan for SRL in accordance permit requirements, including subsurface and hydrogeologic analysis, well/probe location and design, and subsequent installation.

Construction & Demolition Debris Landfill, Operation, Closure and Development Analysis for Confidential Client, Miami-Dade County, FL. Senior engineer and technical lead for the analysis and assessment of the existing design, operation and permits of a construction and demolition debris facility for a confidential client. Provided consulting services, operational recommendations and opinions of probable cost for the required closure and potential for redevelopment as commercial/industrial property. Investigated real estate, planning and zoning issues, and reviewed existing documentation with regulatory agencies.

Project Manager/Senior Engineer, Existing Flexicoque Facility Closure, Lagoven, Amuay Refinery, Venezuela. Developed preliminary and final design and construction documents for the closure of an 18 acre Flexicoque storage area, which included existing site and berm evaluation, leachate collection and disposal, stormwater management system and cap design for unique environmental (dry, windy) conditions along the Atlantic Ocean. Closure of the facility was designed and closed in phases to reduce the effects of constant 25-30+ mph wind erosion and dispersion of the petroleum related byproduct Flexicoque which included hazardous metals. The leachate collection and evaporation system had to be designed to retrofit existing berms and channels. The alternative cap design consisted of 3 feet of clay cover capped with 4 inches of asphalt over geotextile. Project was designed under intense time constraints using Florida Solid Waste Regulations.

Project Manager/Senior Engineer, DFAY Flexicoque Storage Facility, Logoven, Amuay Refinery, Venezuela. Managed and prepared conceptual and final design and construction documents for development of the new 70 acre Flexicoque Storage Facility, which included existing topographic consideration, single and double composite liner systems, leachate collection systems and evaporation ponds (with double liner system), stormwater collection and management within flood plain area, and cap design for unique environmental (arid, windy) conditions along the Atlantic Ocean. Special cell and site design to handle the transport and filling operations of 5-ton bags (6 feet tall x 3 feet diameter) of Flexicoque to be placed and stacked in levels in 8 cells provided for a 20 plus year site life. Unique cap design consisted of 3 feet of clay cover layer capped with 4 inches of asphalt over geotextile.

Collier County Landfill Operations and Site Optimization, Naples, FL. Project Manager and client liaison for the environmental site assessment and due diligence, review of site permits and evaluation of landfill operations for the private operations of the Naples and Immokalee Landfills for Waste Management Inc. of Florida. Provided project coordination and senior engineering oversight associated with the potential expansion and optimization of both facilities. Performed and/or reviewed waste stream characterization, conceptual design and volume calculations, facilities alternative analysis and operations and construction cost estimates. Prepared and participated in presentations and public hearings regarding site optimization, odor control and operations

management. Directed aerial mapping/survey, gas management system design, permit review and transfer and regulatory interface.

Construction and Demolition Materials Recovery Facility, Pompano Beach, FL. Project Manager and senior engineer for the siting evaluation/review, permitting and conceptual/preliminary design of a 3000-cubic yard per day C&D MRF. Project includes facilities planning layout and design of a mechanically aided manual sort of C&D waste, coordination with regulatory agencies, contractors and client, and preparation of an operations and closure plan.

Construction and Operation of the Perdido Landfill, Escambia County, FL. Project Manager for the environmental assessment site evaluation and due diligence for the privatization of the Perdido Landfill for Waste Management Inc. of Florida. Directed the review/investigation of both on-site and off-site potential expansion areas including site access, operational and environmental features, feasibility issues and construction cost estimates. Performed and/or reviewed alternative analysis including MRF operations and conceptual design and site life calculations. Prepared construction management outline technical project *pro forma* and, participated in project presentation to county solid waste staff.

Central Sanitary Landfill, Cell 3 Phase 4 Construction, Pompano Beach, FL. Project Engineering and construction coordination for the 30-acre expansion, liner and leachate collection system installation and construction observation. Provided technical support and engineering oversight to the project, and construction quality assurance (CQA) review/verification and client and subcontractor liaison.

Central Sanitary Landfill, Stage 3 Ash Monofill, Pompano Beach, FL. Project engineering coordination and certifying engineer for the 18-acre expansion, liner and leachate collection system installation and construction observation. Provided technical support and engineering oversight to the project, and CQA review/verification, and client and subcontractor liaison.

Phillip P. Kowalski

Education

MBA, Graduate School of Business, University of Chicago, Chicago, IL

BA, Physics, University of Chicago, Chicago, IL

Qualifications Overview

As a principal planner, Mr. Kowalski is responsible for conducting regulatory, statistical, and economic analyses as part of a multi-discipline engineering project team. He prepares permit applications, solid waste needs assessments, and solid waste management plans. Mr. Kowalski also performs economic feasibility studies, develops project cost estimates, and develops business and marketing plans for waste facilities.

Applicable Experience

Solid Waste Management Plan, Lee County. Prepared solid waste management plan for a county of 36,000. Presented technical and economic information during monthly citizen advisory committee meetings.

Comprehensive Solid Waste Services, Los Alamos County, NM. Managed a multi-discipline project team to provide comprehensive solid waste consulting services to Los Alamos County. Projects included preparing a solid waste management plan, performing feasibility evaluations of potential landfill and transfer station sites, preparing a conceptual design and permit application for a transfer station, preparing a closure plan for an existing landfill, assisting with the final architectural and engineering plans for the transfer station, and assisting with the procurement of solid waste transport and disposal services.

Strategic Business Plan, East Central Solid Waste Commission, MN. Assisted five-county group representing approximately 140,000 residents to prepare strategic business plan to address future disposal alternatives. Researched data on waste generation and management trends in the five-county region. Developed financial projections of disposal alternatives. Performed market research into competitive conditions in east central region. Interviewed numerous stakeholders including elected officials, county and municipal staff, haulers, regulatory agencies, and local citizens to gain local perspective on alternatives. Assisted Commission staff with contract issues and Certificate of Need request.

Comprehensive Feasibility of Alternate Waste Management Technologies, West Cook County Solid Waste Agency. Prime consultant to consortium of 36 communities representing over 500,000 residents.

Managed comprehensive feasibility analysis of alternate waste management technologies, including wet/dry collection systems and intensive recycling methods. Evaluation criteria included technical feasibility, applicability to the waste stream, economics, financing requirements, facility requirements, siting and permitting requirements, and health and safety impacts. Assisted the agency in implementing Regional Disposal Project, a cooperative municipal effort to secure interim transfer, transport, and disposal capacity. Prepared Request for Qualifications and Request for Proposals. Prepared marketing materials to secure participation by member communities of the agency. Met with agency staff and municipal officials to develop and implement project strategy.

Boone County, Iowa. Managed a feasibility analysis of construction/demolition waste recycling opportunities and municipal waste composting technologies.

Solid Waste Needs Assessment and Solid Waste Management Plan, Solid Waste Agency of Northern Cook County. Prepared solid waste needs assessment and solid waste management plan for consortium of 23 municipalities representing 700,000 residents. Prepared elements of local siting and Illinois EPA permit applications relating to waste quantities, facility need, and facility size requirements for landfill facility and three transfer stations. Assisted in managing project team to prepare a 2000+ page, 404 permit application to the USACE. Performed economic analysis to assess competitiveness of waste system with other disposal alternatives. Developed cost estimates and waste projections used to secure financing.

Essex Windsor Solid Waste Authority, Ontario. Managed comprehensive feasibility analysis comparing solid waste baling with conventional landfilling. Technical feasibility report examined issues of compaction, leachate and gas generation, equipment reliability, personnel needs, and equipment requirements. Economic feasibility reports examined unit costs of baling as well as the life cycle costs of developing a regional landfill as a balefill versus a conventional landfill. Met regularly with a stakeholders group to review the study and develop public consensus as the study was prepared.

Grundy County. Designed statistical weighing program to determine household quantities generated in this rural county of 36,000. Developed computer models to forecast waste quantities. Analyzed impacts of demographic trends in the area on waste quantities. Co-authored Grundy County solid waste management plan,

focusing on recycling and the economics of the recommended plan.

Ogle County. Prepared solid waste needs assessment for county of 50,000. Developed and implemented a statistical based weighing program to determine the composition of residential and commercial waste in the county. Prepared elements of the county's solid waste management plan, focusing on recycling and plan economics.

Waste Quantities Study, Will County. Conducted study to determine residential, commercial, and industrial waste quantities generated by the 350,000 residents of the county. Developed models to forecast waste quantities. Prepared elements of the county's solid waste management plan, including an economic analysis of landfill alternatives.

Solid Waste Market Analysis, Bridgewater Resources, NJ. Conducted analysis of solid waste market in New Jersey for financial restructuring of transfer station. Researched waste disposal quantities in marketplace. Analyzed available solid waste transfer and disposal capacity at competing facilities. Reviewed pro forma financial projections.

Pro Forma Financial Analysis of Landfill Expansion, Brickyard Disposal and Recycling. Prepared pro forma financial analysis of landfill expansion. Supervised preparation of earthwork and volume calculations. Developed initial construction cost estimates, including demolition of existing structures, relocation of utilities, and mass earthwork. Prepared projectional income and cash flow statements for different tonnage throughput scenarios.

Position Reports and Testimony, LandComp Corporation. Represented private landfill operator during county's evaluation of landfill ownership alternatives. Prepared position reports and presented testimony at public hearings addressing the role of privately-owned landfills in the county. Assisted LandComp in developing proposal submitted during the county's competitive procurement process to select a preferred landfill vendor. Provided expert witness testimony during landfill siting process.

Browning-Ferris Industries. Developed promotional brochure and other graphical materials for a competitive landfill procurement. Developed strategic marketing materials for client's internal use, including market share analysis.

City of Freeport. Assisted the city to procure an operator for new transfer station. Provided consulting services during development of procurement documents

including lease agreement, host agreement, and hauling agreement. Conducted pre-bid meeting with vendors.

Cost Analysis of Existing Transfer Station Operation, Private Real Estate Developer. Performed cost analysis of existing transfer station operation as part of property negotiation. Developed pro forma income statements and performed discounted cash flow analysis.

Study to Access Economic Impact of Landfill, Douglas County. Prepared study to assess the economic impact, in terms of increased transportation costs, of the closure of the only landfill in the county. Developed waste forecasts and cost projections of transporting the county's waste to neighboring landfill facilities.

Needs Assessment Report and Expert Testimony, Kankakee Regional Landfill. Prepared needs assessment report for application for local sitting approval. Provided expert witness testimony.

Peer Review Assistance, Allied Waste Industries, Sarona Landfill. Provided peer review assistance to client for landfill expansion. Reviewed needs analysis included in landfill permit application.

Zoning and Permit Applications, Allied Waste Industries, Chicago Transfer Stations. Prepared zoning applications and permit applications for multiple transfer stations in the City of Chicago.

Variance and Special Use Zoning Application, Groot Industries. Prepared variance and special use zoning application for vehicle maintenance and container storage facility.

Solid Waste Training Services, Ministry of Environment, Bahamas / SABL, Ltd. Managed the project team that is assisting a Bahamian consulting company to provide solid waste training services to the Government of the Bahamas. Prepared training materials and conducted classroom training sessions for a comprehensive range of solid waste disciplines including transfer stations, recycling, composting, landfill gas and leachate management, public education, and finance/administration.

Evaluation of Economic Impacts of Landfill on Local Economy, Newton County Landfill. Prepared evaluation of economic impacts of landfill on local economy including host fees, taxes, wages and employment, and landfill purchases of supplies and services. Assisted client to evaluate economic development opportunities in connection with beneficial reuse of landfill gas. Researched economic development assistance programs available through local, state, and federal agencies.

Eric K. Kramer, P.E.

Education

BS, Civil Engineering, University of South Florida, Tampa, FL

Additional Training/Continuing Education

8-Hour HAZWOPER Refresher, Annual

40-Hour HAZWOPER Training

FDOT-Approved Maintenance of Traffic Intermediate Course, Cert #1887, exp 04/15/15

OSHA Construction Standard for Lead Training, 29 CFR 1926.62

FDOT Traffic Safety in the Work Area Course

Safety Leadership Series: Best Practices, 2006

Competent Person: Drilling Oversight (CPDO), 2006

Competent Person Certified for Excavation and Trenching

Safety Leadership Series: Incident Inv & Workers Comp., 2006

Safety Leadership Series: Subcontractor Prequalification, 2006

Health Hazards - Arsenic, 2004

Lead Hazards - Overview, 2004

IMSA Work Zone Safety

Registrations/Certifications

Professional Engineer, Florida, PE 49462, Active (exp 02/2013)

Professional Engineer, Alabama, PE 21132, Active (exp 12/2012)

Qualifications Overview

Mr. Kramer is a registered Professional Engineer with 21 years of progressive experience in engineering design, construction oversight, and project management of environmental and civil projects. His experience ranges from Contract Manager responsible for overall project planning and execution to performance of field tasks. He is adept at creating project schedules that avoid construction delays while providing cost-effective solutions. He has the knowledge and experience to apply innovative remedial and investigative technologies to reduce project costs, while achieving the project goals. As a proven hands-on engineer, he can assess a difficult situation and communicate with clients and regulatory agencies to derive mutually acceptable solutions. He has taken projects from the initial Level I investigative stage through development of a project exit strategy consistent with the client's goals. Mr. Kramer's project experience and technical knowledge provide the basis to select the correct balance between innovative strategies and implementation of conventional strategies that provide the most cost-effective solution to project impacts. As a Senior Engineer/Project Manager, he has the skill set necessary to document proposed strategies that gain regulatory approval and provide sufficient detail to meet any regulatory reporting requirements. Communication

skills are vital to successful project completion, and Mr. Kramer has demonstrated this ability by gaining regulatory approval of beneficial reuse and negotiated closure strategies for other clients.

Applicable Experience

Project Manager/Engineer; Lake County Refueling Facility, Astatula, FL: Mr. Kramer was the project manager and design Engineer of Record for the development of a remedial strategy to treat a petroleum release from the County Refueling facility. The remedial strategy started with a air sparge/vacuum extraction (AS/VE); however, when the pilot test indicated this strategy was impaired by a low permeable horizontal stratum the remedial design was switched to a groundwater recovery system. Mr. Kramer developed an overall remedial approach that allowed construction in two phases to meet the County fiscal goals. The first phase consisted of ten barrier recovery wells to prevent offsite migration and the second phase treated the source area where light nonaqueous phase liquid was detected in excess of 1 foot. The first phase was constructed in 2011 and Mr. Kramer provides project management and engineering support for the O&M of the system. Despite heavy iron fouling problems the system maintains almost a 90 percent operation time. In addition to system O&M, Shaw performs quarterly monitoring and reporting of the system.

Project Engineer, Lake County EECBG –Funded Greenhouse Gas/Landfill Gas (GHG/LFG): Mr. Kramer provided engineering support to evaluate landfill methane generation from three closed landfills (Central Facility Phase I, Loghouse and Umatilla landfills) to determine if sufficient quantity could be economically used to generate electricity or support other beneficial uses. Each landfill was evaluated using record drawings, LiDAR maps and interviews with County personnel to estimate the mass of solid waste. This information along with years of operation, closure duration were input into the US EPA LandGEM and Intergovernmental Panel on Climate Change IPCC models to calculate the estimated methane generation. Results of the analysis indicated that only the Central Solid Waste Facility had sufficient methane to be economically converted to a beneficial use strategy. The analysis and recommendations were summarized in a report submitted to the County.

Project Engineer; Morris Road Landfill, Jacksonville: Mr. Kramer provided engineering support for the construction of a groundwater remediation system. The remedial system included groundwater recovery wells, controls, water treatment

system, connection to sanitary pipe for discharge, as well as detention pond. This project required considerable planning and engineering due to the site topography, proximity of residential development and length of piping. During construction of the remedial system Mr. Kramer interfaced with local, state and client representatives to permit the proposed construction and maintain good lines of communication.

Project Engineer; JSC Jacksonville Landfill: Mr. Kramer was the project engineer for design of a new Class I landfill for the JSC Corporation. Mr. Kramer assisted with the site selection, cell sizing and permitting for the landfill. He designed multiple cells including the side slopes, liner and geotextile selection, leachate collection system, stormwater management system, weigh system and ingress/egress roadways. Several computer software applications were utilized to evaluate leachate formation, stormwater routing and detention pond sizing. Mr. Kramer formulated a geotechnical testing program to ensure the existing soil mechanics were adequate for landfill construction. He also assisted in the hydrogeologic testing of the aquifer, so that a groundwater monitoring program could be implemented that met the FDEP requirements. Mr. Kramer also formulated the construction bid documents. Mr. Kramer completed the scope of work on schedule and under budget.

Project Engineer; East Pasco Landfill, Pasco County: Mr. Kramer provided construction oversight for the closure of a Class I County landfill. The county landfill closure design specified placement of a clay cap and vegetative overburden. Mr. Kramer oversaw the clay pit selection and certification, QA/QC testing for permeability and physical parameters, and documentation of construction methods. During closure activities it was discovered that previous assessment was not complete and the waste extended beyond the cap limits. He performed additional assessment to determine the extents of waste, and designed and permitted a modification to the cap which extended over the new waste boundary. Upon completion of the cap, he prepared a construction report documenting closure activities and issued Record drawings. Mr. Kramer completed the scope of work on schedule and under budget.

Project Manager/Engineer, Private Client: Mr. Kramer's ability to develop remedial strategy is based on a cost-effective approach to meet the client's goals. A private land developer had purchased large tracks of land with approximately 145,000 cubic yards of Cement Kiln Dust (CKD), which is considered a solid waste by the EPA and FDEP. He negotiated a beneficial reuse program with FDEP to treat the CKD thereby saving the

client millions compared to landfill disposal. In addition, due to the slow housing market he obtained permission to construct an interim storage area until the CKD beneficial reuse program could be implemented which allowed the county to construct a road through the area and receive federal grant money.

Project Engineer, Seminole County: Mr. Kramer was involved in the successful implementation of a beneficial reuse program for metals contaminated soil. During this project he coordinated with the county, EPA and FDOT to develop Environmental Technical Specifications for the contractor to follow to ensure impacted soil was safely transported and correctly placed in the designated areas. The plan called for removing the top two feet of impacted soil within the proposed stormwater pond footprints and transporting the material to SR415. Successful completion of this beneficial reuse project resulted in saving the county over a million dollars as compared to conventional disposal options.

Project Engineer, Former Storage Tek Solvent Impacted Site: Mr. Kramer was the design engineer for development of a remedial strategy using sodium persulfate oxidation to treat chlorinated compounds in the groundwater. The site was a former circuit board manufacturer that experienced a release of chlorinated compounds into the groundwater. A previous consultant has designed a groundwater pump and treat system that inadequately treated recovered water before pumping to infiltration multiple galleries, thereby exacerbating the dissolved contaminate plume. He developed a strategy of discrete oxidant injection down gradient of the source area and a three oxidant injection/ recirculation pumping cells to introduce the oxidant below grade and pull it through the aquifer. The system was constructed as designed and dissolved concentrations were reduced by over fifty percent. Quarterly monitoring and reporting has continued subsequent along with periodic injection events. Mr. Kramer serves as the Engineer of Record for reports and technical direction.

Project Engineer, Pond G, FDOT District 2, Jacksonville, FL. As project engineer Mr. Kramer has worked on designing water treatment systems for petroleum- and chlorinated hydrocarbon-contaminated groundwater. He has performed construction oversight of stormwater ponds located at an EPA Superfund Ash site at the I-95/I-10 intersection and achieved closure of five unknown USTs, thereby eliminating any construction delays. He designed the dewatering treatment system to remove dissolved metals from the influent and obtained the NPDES discharge permit for treated water disposal.

Curtis R. Lee, P.G., PSSC

Education

BS, Geology, University of Florida, Gainesville, Florida

Additional Training/Continuing Education

8-hour OSHA HAZWOPER, Annual Refresher

OSHA Lead Awareness, 29 CFR 1926.62

40-hour OSHA Health and Safety Training

OSHA Supervisory Training

Short Course, NWWA: Ground Water and Unsaturated Zone Monitoring and Sampling

Short Course, Powerful Writing Skills

Short Course, IBM PC Applications in Groundwater Pollution and Hydrology

FDOT Traffic Safety in the Work Area Maintenance of Traffic (MOT)

Registrations/Certifications

Professional Geologist, Florida, PG-1348, Active

Pollutant Storage Systems Contractor, Florida, PCC051689, Active

IMSA Work Zone Safety Specialist, Certificate 2225739

Qualifications Overview

Mr. Lee is a Professional Geologist and State of Florida Licensed Pollutant Storage System Contractor with over 25 years of experience in environmental services, investigations, and remediation. Mr. Lee has been providing environmental and construction services to the FDOT for 21 years including roles as Project Scientist, Project Manager and Contract Manager. Mr. Lee currently serves as the Florida District Manager.

As the Florida District Manager, Mr. Lee is responsible for the Engineering Program execution including QA/QC, financial, administrative, and business development for five Florida Engineering offices. He has managed over 15 contracts with state, county, federal, and private customers including FDOT, FDEP, Lake County, TERC, and Texaco. Mr. Lee is an expert in complete project, contract, and program management, including work design, administrative controls, schedules and estimates, operations, and reporting/close out. Mr. Lee has experience in collecting and analyzing technical data and preparing construction Work Plans, Technical Execution Plans, Temporary Erosion and Sediment Control Plans, Quality Assurance Project Plans, Contamination Assessment Plans, Contaminant Assessment Reports, Remedial Action Plans, Tank Closure Assessments, Construction permits, Level I (Phase I)/ Level II (Phase II) reports and cost proposals for clients. He has represented clients at state and local regulatory meetings. He also has experience in design

and implementation of site assessments, construction plans and schedules, and construction/remediation system installations and maintenance.

Mr. Lee's roles as a Project Scientist, Project Manager, and Contract Manager have provided valuable experience that covers many districts including support to the Central Office (Statewide), FDOT 1, FDOT 2, FDOT 4, FDOT-5, and FDOT 7 with hundreds of successfully completed projects ranging from FDOT Level I audits, Level II assessments, and Level III remedial actions.

Mr. Lee is an expert in complete project, contract, and program management, including work design, administrative controls, schedules and estimates, operations, and reporting/close out. He has experience in collecting and analyzing technical data and preparing construction Work Plans, Technical Execution Plans, Temporary Erosion and Sediment Control Plans, Quality Assurance Project Plans, Contamination Assessment Plans, Contaminant Assessment Reports, Remedial Action Plans, Tank Closure Assessments, Construction permits, Level I (Phase I)/ Level II (Phase II) reports and cost proposals for clients. He has represented clients at state and local regulatory meetings. He also has experience in design and implementation of site assessments, construction plans and schedules, and construction/remediation system installations and maintenance.

Mr. Lee's site assessment experience includes the investigation of multiple contaminant plume characteristics in karst and unconsolidated topography; interpretation and construction of geologic maps, cross sections, hydrographs, and potentiometric surface maps; supervision of rotary and hollow-stem drilling during installation of piezometers, monitoring and recovery wells, as well as log boring cuttings and describing lithologies. He has designed and constructed soil/gas, and-point, geo-probe and monitoring well sampling networks and has developed and executed sampling plans following FDEP/EPA Standard Operating Procedures for QA. In addition Mr. Lee has sampled soils using various field methods including GC/FID; and conducted site surveying and mapping.

Mr. Lee has designed and managed facility decontamination, decommissioning, transportation construction controls, soil excavation and disposal, tank removal and closures, multiple emergency response actions and numerous transportation related environmental assessments, remedial designs and construction support services.

Professional Presentations

Property Assessments- Jacksonville Board of Realtors, 1988

Environmental Investigations- Brevard County Facilities, 1990

Environmental Investigations- Brevard County State Listed Petroleum Facilities, 1990

Panel Member- FDOT Environmental Management Conference, 1990

State of Florida Petroleum Response Contract, 1991

Star Enterprise, Mobil Oil and Marathon Oil Bulk Storage Facility Remedial Action, 1992

Southern Bell, General Environmental Services, Project Summary of Petroleum Remediation Systems Including Soil Vapor Extraction, 1994

FDOT Mod IIB Training- Project Summary of Soil Vapor Extraction and Bioventing Treatment Technologies, 1996 and 1999

FDEP Dry Cleaning Contract- Statewide/Administered Contract for Investigation and Remediation of Dry Cleaning Sites, 1996

FDOT Training Sessions- Slug Test Procedures; Analytical Test Methods and Applications; Soil and Groundwater Sampling Methods and Procedures, 1993 to 2000

Transportation Research Board- Innovative Remediation of Petroleum Hydrocarbons Using Soil Vapor Extraction and Air Sparging, 1997

Transportation Research Board- Construction of Subsurface Utilities through Petroleum Contaminated Right-of-Way, 1997

Donald L. Lewis, P.E.

Education

BS, Environmental Engineering, University of Florida, Gainesville, FL

Additional Training/Continuing Education

8-Hour OSHA Refresher Training, Annual

40-Hour OSHA Hazardous Waste Training, 1992 and 2004

Registrations/Certifications

Professional Engineer, 1996, Florida PE 50828, Active, 02/28/2013

Qualifications Overview

Mr. Lewis is a Senior Engineer with over 21 years experience in all aspects of environmental consulting, waste management, assessment, remediation, and project/program management for private and government clients. He has expertise in design and maintenance of remediation systems and ensuring compliance with federal and state environmental regulations. He has worked on permitting and design of several landfills in Florida. He has expertise in completion of Phase I and II environmental site assessments; design, installation, and operation of remediation systems; right-of-way (ROW) work, operations, and MOT; environmental permitting; and ensuring compliance with federal and state environmental regulations. Additional qualifications include landfill gas systems, site and development planning, and facility planning and construction. This diverse background and project experience has aided in development of a well rounded environmental consultant capable of successfully managing multiple projects, staff, and programs in a continually changing work environment. He has worked on permitting and design of several landfills in Florida.

He was formerly employed by the City of Sarasota where he was Professional Engineer responsible for engineering review of applications of site development, Rezone Petitions, and Special Exceptions for conformance with Sarasota County pollution control ordinances, Land Development Regulations, development of regional impacts, and various county codes and ordinances. He served as Air and Water Quality Protection representative on the Development Review Committee and Code Compliance Committee and was the County liaison coordinating with FDEP for various property issues surrounding development of impacted properties, and proper management of contaminants encountered and wastes streams generated.

He was also Professional Engineer responsible for review, certification, and management of petroleum cleanup projects within Sarasota County under the FDEP Petroleum Cleanup Program.

Applicable Experience

Project Manager and Senior Design Engineer, 7-Eleven 33194, North Port, FL. Project Manager and Senior Design Engineer for a design, installation, and operation of a biosparge system consisting of 15 biosparge points. All treatment points, remedial piping, and remedial equipment are located in the ROW under a ROW permit. Required MOT plans and MOT implementation were completed during remedial construction. Close coordination with the City of North Port during project planning and design resulted in no issues with the system design or installation during the planning, design, and construction phases. The system has operated for four months and indicates favorable performance monitoring results. The project has been completed on time and on budget for all phases.

Project Manager for several landfill gas management projects throughout Florida. Responsibilities included overall management of projects including proposal preparation, system design, site plans, landfill gas system/gas-to-energy facility construction, contractor management, operation and maintenance, scheduling, permitting, cost tracking, regulatory reporting, and client liaisons. Designs included landfill gas transmission pipelines, liquid management structures, and equipment skids.

Staff Engineer involved with a wide range of environmental solid waste projects. Performed hydrogeologic investigations at existing and proposed landfill locations. Responsibilities included site reconnaissance, regulatory review, exploratory borings, well installations, groundwater sampling, groundwater evaluations, CAD preparation, and report preparation. Preparation, review, and update of several landfill groundwater monitoring plans. Member of project team for permit modification preparation for landfill expansions within the midwestern United States including hydrogeologic characterization, groundwater evaluation, modeling, and report preparation.

Staff Engineer, Waste Management of North America, Division, Wakefield, Massachusetts. As Staff Engineer Mr. Lewis prepared several spill prevention control and countermeasure plans for several eastern region landfills and hauling companies. Performed acquisition reviews of hauling companies and landfills. Prepared annual operating plans for

regional transfer stations. Completed audit preparation reviews for region landfills.

Environmental Engineer, FDEP Dry-Cleaner Solvents and Metals Sites Cleanup, Statewide, FL. Prepared limited scope RAPs and RAP Modifications regulatory documents that provided implementation and O&M details for SVE and ISEB systems using potassium lactate as the substrate and sodium carbonate to buffer and raise pH of the groundwater. Performed oversight for O&M and prepared startup, O&M, and periodic status reports. Interfaced and coordinated with the FDEP program engineering staff.

Environmental Engineer, FDEP Petroleum Sites Cleanup, Statewide, FL. As Environmental Engineer responsible for site assessment, RD, and operation of remediation systems for treatment of contaminated sites in accordance with the FDEP Petroleum Contamination Site Cleanup Criteria. Prepared and certified regulatory submittal documents for soil and groundwater contaminated sites including: CAPs, construction drawings, bid specifications/solicitation packages; remediation construction reports; remediation system monitoring reports; and O&M plans and reports. RDs included liquid and vapor treatment systems using ISCO, bioremediation, SVE, air sparging, biosparging, multi-phase vacuum extraction, pump and treat source removal, MNA monitoring, slurry wall encapsulation, and site capping.

Environmental Engineer, DNAPL Remediation, Alaric Superfund Site, Tampa, FL. Provided peer review on 30% design and final design documents (including specifications and drawings) for Interim Action pump and treat system and sodium permanganate (NaMnO₄) ISCO application. Reviewed Interim Remedial Action Vital Signs Reports documenting system operation and maintenance. Sampling documented ISCO accomplished mass destruction of residual DNAPL.

Project Manager and Design Engineer, 7-Eleven 32605, Maitland, FL. Project Manager and Design Engineer for design, installation and operation of an air sparge and soil vapor extraction system consisting of 43 air sparge wells, 8 biosparge wells, and 23 soil vapor extraction laterals. Additionally, 47 monitoring wells were installed to evaluate/monitor groundwater conditions in the shallow, intermediate, and deep groundwater zones. Wells are install onsite and in the ROW under ROW permits with required MOT being implemented during the installation activities. The remedial system has operated for approximately 4 years and has remediated the original discharge across the site and is currently focusing on two remaining wells with low-level impacts. There has been a recent discharge at a UST system dispenser which is currently under assessment. The project has been completed on time and on budget for all phases.

Senior Design Engineer, 7-Eleven 32645, Saint Cloud, FL. Senior Design Engineer for design installation and operation of a biosparge system consisting of 15 biosparge wells. Five biosparge wells and remedial piping/components are located within the ROW and the required ROW permitting was completed with the necessary MOT implemented during the remedial construction activities. The system has operated for approximately 9 months and shows favorable treatment results. The project has been completed on time and on budget for all phases.

Professional Affiliations

Florida Engineering Society

National Society of Professional Engineers

Douglas Mann, P.E.

Education

MS, Coastal and Oceanographic Engineering, University of Florida, Gainesville, Florida

BS, Civil Engineering, University of Florida, Gainesville, Florida

Registrations/Certifications

Professional Engineer Florida, 1991, PE 44046, Active

Professional Engineer Louisiana, 2004, #31121, Active

Professional Engineer Massachusetts, 2006, #46574, Active

Professional Engineer Delaware, 2003, #12949, Active

Qualifications Overview

Mr. Mann has over 24 years of civil and coastal engineering experience, including dredge and fill projects, beach and inlet engineering, coastal structure design as well as marine-related upland structures. He has an in-depth knowledge of Florida coastal permitting (Chapter 161 F.S. and Section 62B-41, F.A.C.), dredge and fill permitting, and U.S. Army Corps of Engineers permitting regulations and procedures. Since 1998, Doug has permitted over 50 Coastal Control Line Permits (Chapter 161, F.S. and 62B-33, F.A.C.) for the development of multi-million dollar single-family homes and similar beachfront structures primarily in Palm Beach and Broward Counties. Consultations have been performed for clients in other Florida counties.

Applicable Experience

Town of Longboat Key Interim and Island Wide Nourishment Projects, Longboat Key, FL. Project manager and engineer of record for the interim renourishment of the beaches along Longboat Key. The project involves the placement of 300,000 cubic yards of beach compatible from offshore sources along the north end of Longboat Key in FY11/12 and 865,000 cubic yards of beach compatible sand in FY13/14.

Islamorada, Village of Islands, Founders Park Marina Rehabilitation Project. Engineer of record for the replacement of the 77-slip marina. Project included a marina materials evaluation including life cycle costs, revised layouts to accommodate larger boats, and increased structure elevations to accommodate storm surges.

Lewes Ferry Terminal Jetty Bypassing Analysis, DE. Project manager for the development of a sand bypassing and down-drift mitigation analysis at the ferry terminal. Design to include geologic analyses, littoral budget development, dredging history analyses, and recommendations.

Holly Beach Sand Management Project, Cameron Parish, LA. Project manager for the feasibility study, construction plan development, and construction engineering services for the shoreline restoration. Detailed coastal process analyses were performed with coastal modeling of the key processes. Analyzed beach fill compatibility and developed fill quantities. Designed open water discharge of borrow area surface sediments.

Permeable and Adjustable Groins at the Islander Club Condominium, Town of Longboat Key, FL. Project manager and engineer of record for the construction of two permeable and adjustable groins in the vicinity of the condominium.

Boca Raton North Jetty Weir Relocation, Palm Beach County, FL. Engineer for the redesign of the north jetty weir. Designed rock improvements and demolition of a portion of the crib jetty.

Captiva Island (Redfish Pass) Terminal Groin, Lee County, Florida. Designed the rehabilitation of an existing terminal groin at the north end of the island. Analyzed the coastal processes to achieve south shoreline stabilization effects.

Upham Beach Stabilization Project, Pinellas County, FL. Designed and permitted a stacked geotube T-head groin system to achieved increase beach nourishment interval. Project included assessment of the sediment budget to avoid downdrift impacts. Provided the County with construction engineering services.

Town of South Palm Beach Erosion Control Study, FL. Project manager for the feasibility study of erosion control alternatives for the beaches within the Town of South Palm Beach and Town of Lantana. The study area contains significant nearshore hardbottoms, which were protected. Alternatives focused primarily on structural solution.

North Ocean Boulevard Seawall Toe Protection Project, Palm Beach, FL. Project manager and engineer of record for the design of a rock toe berm to prevent the failure of an exposed ocean front seawall.

Holly Beach Segmented Breakwaters Enhancement Project, Cameron Parish, LA. Engineer for the rehabilitation for 20 breakwaters. Analyzed coastal processes and structural conditions to recommend raising and extending some of the breakwaters.

East Naples Bay Canal Maintenance Dredging Project, City of Naples, FL. Project manager for the evaluation of maintenance dredging needs within 10 finger canals in East Naples Bay. Project involves the removal of rock ledges within the canals.

Collins Canal Dredging and Bulkhead Rehabilitation Project, City of Miami Beach, FL. Project manager for the dredging of the Collins canal, which was originally dredged in 1910s. Project includes working around numerous utility crossings and reconstructing the bulkheads on the north shore.

Santa Rosa Shores Canal Maintenance Dredging Project, Santa Rosa County, FL. Project manager for the dredging of the subdivision canal system and a new offshore channel, which connects the canals to the Intracoastal Waterway. Some of the dredge spoil will be used to fill deep holes within the canal system.

City of Miami Beach Waterway Dredging Projects, Miami-Dade County, FL. Project manager for the collection of bathymetric data throughout the 10 miles of waterways within Miami Beach and the determination of maintenance dredging requirements throughout the City.

Town of Longboat Key Canal Maintenance Project, Sarasota County, FL. Project manager for the dredging of 40 canals within the Town of Longboat Key. Determined dredging requirements of the canals while assuring stability of adjacent bulkheads. Provided construction observations and construction contract administration.

Key Biscayne Yacht Club, Key Biscayne FL. Site plan development for a proposed dry rack storage system to replace a trailer parking lot on the club property.

City of Delray Beach, City Marina, Deck Replacement and Dock Repairs. Engineer of record for replacement of all finger dock decks and structural repairs at the 24 slip City Marina. Marina improvements included upgraded deck materials and boat fenders. Designed repairs for impacts associated with Hurricane Wilma.

Ocean Inlet Park Marina Channel Dredging, Palm Beach County, FL. Engineer for the dredging and channel marker relocation of an entrance channel to a small County owned marina adjacent to South Lake Worth inlet. Designed small rubble mounds as mitigation for unavoidable impacts due to the construction.

James E. Martin, P.E., E.C., LEED AP BD+C

Education

BS, Electrical Engineering, University of Central Florida, Orlando, FL

Additional Training/Continuing Education

OSHA 8-hour Refresher Training, 2012, Annual CPR and First Aid, 2008

*Project Management Training Course, 2004
Hazardous Waste Operations & Emergency Response, 2003*

OSHA 40-hour Health and Safety Training, 1995

Registrations/Certifications

Professional Engineer, Florida, PE 63838, exp 02/28/2013

Leadership in Energy and Environmental Design, Accredited Professional, LEED AP BD+C 10465994 (Active)

Electrical Contractor, Florida, EC-0001977 (Current)

Qualifications Overview

Mr. Martin has over 20 years experience in conducting and managing electrical and environmental projects including design and permitting, software programming and modeling, construction and technical oversight, operation and maintenance, and financial and field services management.

He prepares Feasibility Studies, Requests for Qualifications, Contamination Assessment Reports, Remedial Alternatives Evaluations, Remedial Action Plans, Removal Action Reports, Construction Completion Reports, and O&M Reports; supervises Remedial Action Constructions; and evaluates O&M data. By providing options for clients when selecting passive full-scale remedial alternatives, Mr. Martin has successfully performed multiple laboratory bench scale studies and field pilot tests using enhanced bio-stimulation, bio-augmentation, and chemical oxidation technologies. As both a state-certified electrical contractor and a state-licensed professional engineer, he is also extremely proficient in power distribution design, conventional control relay logic design, PLC programming, and remote system data interfacing and monitoring using real-time software telemetry units while specializing in identifying and eliminating field related problems of complex electro-mechanical equipment systems during integration, operation, and startup activities.

Mr. Martin is currently the company's Gulf/Southeast Regional National Practice Program Leader specializing in remediation technologies for contamination cleanup efforts. He has served as a team member on a 12-person panel sponsored by the Interstate Technology and

Regulatory Council. The team consists of state regulators and independent environmental consultants dedicated to bioremediation technology research and development. In addition, Mr. Martin serves as both the Southeast Regional Lead for the AT&T Environmental Compliance Services Program and Contract Manager for the FDEP's State Petroleum Cleanup Program.

Applicable Experience

Senior Project Engineer, Petroleum Contamination Site, FDOT District 2, Interlachen, FL. Designed, initiated, and tested electrical control modifications to Shaw's mobile dewatering and treatment system used to remove and contain an existing dissolved petroleum contamination plume from a leaking underground storage tank system during the District's SR 20 road widening project. Treatment system control panel modifications were performed to integrate project equipment, controls, and fail-safes to maintain the required groundwater steady state flow needed to prevent petroleum-contaminated groundwater (gasoline and diesel) from impacting roadway construction activities. The groundwater extraction process included a dewatering system consisting of 48 total 2-inch diameter well points set to 22 ft bls and connected to a common header pipe and dewatering pump. The groundwater treatment process included a surge tank, multi bag-filter apparatus for sediment removal, a 400-gallon per minute low-profile air stripper, and two 2,000-pound carbon polishing units. This system operated continuously for a period of approximately 5 weeks. During that time, approximately 7.5 million gallons of groundwater was treated and discharged under the NPDES permit.

Senior Project Engineer, Petroleum Contamination Site, FDEP Pre-Approval/CSXT, Wildwood, FL. Senior Project Engineer for a 73-acre site consisting of three multi-phase extraction soil and groundwater treatment systems operating concurrently to provide hydraulic control of area free product. Project estimates indicate that over 850,000 gallons of free product have impacted approximately 190,000 square feet of the site. Completed an entire site geophysical survey using global positioning satellite data for grid construction and combining ground penetrating radar, electrical resistivity tomography, and terrain conductivity information to produce 3-dimensional sub-surface maps (indicating free product locations) for future design plans. Recently performed a series of planned chemical oxidation pilot test direct injections using a proprietary blend (Fenton's agent) of ferrous sulfate, phosphoric acid, and hydrogen peroxide.

Project Manager, Roper Growers and Associates, FDEP, Winter Garden, FL. Prepared and implemented an innovative remedial design used to expedite the removal and treatment of more than 15 tons of petroleum-contaminated soil. Using a remedial phased approach, a biological surfactant (Biosolve), oxygen enhancing form of calcium peroxide (PermeOx Plus), and a microbial blend of naturally occurring bacteria and fungi (Environoc) were applied to contaminated soil and groundwater during various stages of source removal. The project is currently in active remediation utilizing two multi-phase extraction (MPE) soil and groundwater treatment systems operating concurrently to provide hydraulic control and capture of two separate dissolved phase contaminant plumes.

Senior Design Engineer, U.S. Army Garrison Petroleum Contamination Site, Redstone Arsenal, USACE, Madison County, AL. Several remedial technologies were evaluated as an initial screening tool in a Corrective Action Engineering Evaluation Report submitted in May 2007. Technologies that were identified as the most applicable for implementation at the site were considered for further evaluation, and a plan to implement a pilot test using the most appropriate site technology was submitted, approved, and performed in June 2007. Following pilot test data collection and upon submittal of a Corrective Action Plan utilizing large diameter augers and MPE technologies, a cost-effective and flexible strategy to address source area and light non-aqueous phase liquid hydrocarbons was designed, approved, constructed and is currently in the operation and maintenance phase.

Program Engineer, Petroleum Contamination Site, AG Carriers, FDEP State Cleanup, Leesburg, FL. Prepared remedial design, construction management, and O&M services for a state-assigned petroleum contamination site. Initiated startup of a nutrient enhanced bioremediation system in 2000 and obtained a site rehabilitation completion order recommending no further action and site closure in 2004.

Program Engineer, Hazardous Waste Site Cleanup and Dry-Cleaning Solvent Cleanup Program Services, Dry-Clean USA, Florida Department of Environmental Protection, Ft. Lauderdale, FL. Prepared remedial alternatives evaluation for both soil and groundwater solvent contamination. Performed multiple technology screening efforts using site applicability, implementability, reliability, adverse impacts, O&M requirements, estimated cleanup times, and overall cost. Recommended soil excavation and volatilization of soil contaminants by vacuum

extraction. The recommended groundwater remediation was an in-situ bioremediation technology utilizing a series of microbial and nutrient groundwater injections. Currently, a phased technology approach is being successfully implemented to mitigate an array of site halogenated volatile organic compounds.

Program Engineer, Post and Lumber Preserving Plant, Florida Department of Environmental Protection, Quincy, FL. Prepared and assisted implementation of a remedial action plan for this abandoned wood preserving facility to address offsite wetlands remedial activities. Evaluated recommendations considering soil removal and treatability of arsenic and dioxin using phytoremediation. Phytoremediation pilot study was performed jointly with FDEP, University of Florida, and Earth Tech. A bench scale treatability study was performed using a chemical oxidation process for PCP in groundwater. As Engineer of Record, Mr. Martin logistically planned and executed the removal of approximately 44,000 tons of arsenic-and dioxin-contaminated soil from a jurisdictional wetland area and residential properties adjacent to the facility. Established no further action with institutional controls, Risk Level Management Option 11, per Chapter 62-780.680(2) Florida Administrative Code.

Program Engineer, Petroleum Contamination Site Assessment and Remediation, The Pantry, Inc., Various Locations, FL. Project Engineer responsible for site assessment, pilot testing, and remedial design at multiple petroleum-impacted sites. Remedial design included natural attenuation evaluation by analyzing groundwater geo-chemical parameters, soil vapor extraction, air sparging, and multiphase extraction, bioremediation using Biodyne, Redox Tech, and PHOSter technologies. Managed multiple active remediation systems with full financial responsibilities including project reporting, O&M, and treatment system evaluation and optimization.

Robert C. Meador, P.E.

Education

BS, Civil Engineering, Virginia Military Institute

Additional Training/Continuing Education

Project Development & Environment Manual Process Training, FDOT, 2010

Registrations/Certifications

Professional Engineer, Florida, PE 72936, Active (exp 02/2013)

Qualifications Overview

Mr. Meador has over 26 years of experience in the transportation industry consisting primarily of public sector work. He is a former employee of Pinellas County where he managed numerous projects and served as Division Manager of Planning and Programming. Mr. Meador served as grant administrator for Pinellas County for eight years. He was responsible for obtaining grants and managing several of those projects. Mr. Meador was responsible for roughly 50 grant projects with an estimated value of more than \$65 million.

Mr. Meador has an excellent working knowledge of the project development and programming process. He was responsible for management of the PD&E for the Bryan Dairy Road project and establishing the purpose and need and advance notification package for the Beckett Bridge project while with Pinellas County. He served as project manager for a number of design projects and assisted with and/or oversaw the development of many others. Mr. Meador was also responsible for administration of the Local Agency Program (LAP) and other grant programs while with the County.

Prior to moving to Florida, Mr. Meador served as the Principal Transportation Planner for a metropolitan planning organization in Virginia. He was directly responsible for developing the 2025 Long Range Transportation Plan, overseeing committee reviews, presentations to Boards, Commissions, and the public. He also served as Transportation Engineer for a county in Virginia where he was responsible for establishing corridor alternatives and feasibility study for a new major arterial facility around the City of Fredericksburg, Virginia. Prior to that, Mr. Meador served as an Assistant Resident Engineer for Virginia Department of Transportation where a large part of his duties consisted of evaluating project needs, alternatives and studies of major corridors.

From his experience, Mr. Meador has an extensive knowledge of local, regional and state government responsibilities and regulations.

Applicable Experience

Project Manager, Louisiana Department of Transportation Development – Houma-Thibodaux to LA 3127 Connection Environmental Impact Statement, Baton Rouge, LA. Mr. Meador is currently serving as the project manager in the Tampa Office for this project. His responsibilities include preparing and managing the preparation of the natural environment and noise sections of the draft and final EIS for this proposed four-lane, access controlled roadway on a new location.

Project Manager, Beckett Bridge PD&E Study, Pinellas County, FL. Mr. Meador secured a grant award through the Transportation, Community and System Preservation program for replacement of the Beckett Bridge. He developed the purpose and need statement, advance notification package, and assisted with the ETDM program summary report. He was also responsible for the projects advertisement and consultant selection process prior to his leaving County employment.

Project Manager, Bryan Dairy Road PD&E Study, Pinellas County, FL. Mr. Meador served as the County Project Manager for the Project Development and Environment Study for this 1.48 mile long widening project. Responsibilities included oversight of the project development, schedule, and funding as well as administration of the public hearing presentation and process. Mr. Meador's responsibilities during the design process included all coordination and agreement activities with CSX Transportation as well as LAP administration, assistance in development of specifications to meet LAP requirements, and coordination efforts with the FDOT. Responsibilities during the construction phase included continued coordination between the contractor and CSX for project scheduling, flagging needs, and design conflicts.

Project Manager, Walsingham Road & Sidewalk Improvements, Pinellas County, FL. Mr. Meador served as County Project Manager for this 1 mile 2-lane road reconstruction and widening for bike lanes. The project included installation of storm sewer and sidewalks and was partially federally funded which required adherence to the LAP requirements and coordination through the FDOT.

Project Manager, Safe Routes to School Sidewalk Projects, Pinellas County, FL. Mr. Meador served as the County Project Manager for the design and construction of a multiple location sidewalk improvement projects funded through the Safe Routes to School Program. Responsibilities included management of consultant activities and design process, project schedule and funding, project reports to the Florida Department of Transportation, development of specifications, and response to citizen inquiries regarding the project intent and need.

Liaison to the Pinellas County Metropolitan Planning Organization, Pinellas County, FL. Mr. Meador served as liaison to the Pinellas County Metropolitan Planning Organization (MPO) and served as vice-chair of the MPO Technical Coordinating Committee for seven years. Responsibilities included coordination of programs and plans, presentation and explanation of county projects to committees and the MPO Board, and review of various regional planning documents.

Liaison to the Florida Department of Transportation, District 7, Pinellas County, FL. Mr. Meador served as liaison to the Florida Department of Transportation for Pinellas County. Responsibilities included coordination of projects and programs, acquisition of funds, establishment and negotiation of agreements, and review of phase plan submittals by consultants for FDOT projects.

Professional Affiliations

Institute of Transportation Engineers

Hadrian D. Millon, AICP

Education

Master of Landscape Architecture, Harvard University
BA, History, Tulane University

Registrations/Certifications

American Institute of Certified Planners (AICP), Professional Planner, 2002

Qualifications Overview

Mr. Millon has 23 years experience in landscape architecture and planning specializing in urban design and landscape architecture for large-scale transportation projects. As a member of the Shaw Transportation team, he is involved in a variety of projects from early stages through final design including planning and urban design for bus and rail transit projects and transit oriented development. Before joining Shaw, Mr. Millon was an urban designer and an Associate with a planning and design firm. Prior to that he gained 8 years of experience with the Massachusetts Highway Department where he managed planning, design, and review of projects statewide.

Applicable Experience

Urban Planner, Fore River Bridge Replacement Project, Massachusetts Bay Transportation Authority Forge River Bridge Replacement Project, Quincy, MA. Provided visual impact assessment and analysis following FHWA guidelines for a \$270 million bridge replacement carrying Route 3A over the Fore River between Quincy and Weymouth, Massachusetts. The preferred alternative proposes to replace the existing temporary bridge, in place since 2004, with a new lift bridge with 250-foot towers. The abutting communities expressed concern regarding the visibility of the towers, the aesthetic impact during day and night, and the resulting light pollution and shadow impacts. Project involved NEPA documentation for the FHWA.

Site Designer and Transportation Planner, Portland North Alternatives Study, Maine Department of Transportation, Augusta, ME. Alternatives Analysis leading to FTA Small Starts project for bus or passenger rail service in Maine's highest growth corridor north of Portland to Brunswick. Provided land use planning and station area design, parking and intermodal planning. Project involved NEPA documentation for the FTA.

Urban Designer, Urban Design Services, Massachusetts Bay Transportation Authority, New Assembly Square, Boston, MS. Provide urban design services for station and headhouse focused toward

integrating the station components into the surrounding development.

Transportation Planner, National Network of Highways Program, National Infrastructure Development Corporation, Republic of Trinidad and Tobago, West Indies. Provide program management services for the implementation of 250 km US\$3 billion nationwide freeway system. Manage scope and change order process for the Program Manager, provide contract formation services for several design build contracts.

Transportation Planner, ARRA Program Oversight Plan, Massachusetts Bay Transportation Authority Silver Line Phase III, Boston, MA. Lead author for a program management plan detailing MBTA policies, procedures and controls for oversight of the \$230 million program of transit improvements funded under the American Recovery and Reinvestment Act of 2009 (ARRA).

Urban Designer, Planner, Design Manager, Route 18 Access Improvement Project, Massachusetts Bay Transportation Authority Route 18, New Bedford, MA. Master planning and urban design services for a 5 km boulevard and pedestrian access project to reconnect the downtown to the historic waterfront and National Park site. Managed development of project concepts and alternatives to NPS standards and requirements for 25% design; managed landscape design for 100% design.

Project Manager, Al Reem Island Transit Feasibility Study, Bunya LLC, Abu Dhabi, UAE. Project manager for a light rail feasibility study analyzing traffic, pedestrian, water taxi, metro, and proposed light rail networks to determine transit facilities and infrastructure needs. Bunya acts as the municipality of al Reem Island, a 633 hectare development for 250,000 residents, and oversees activities of three major development corporations.

Urban Designer, Orient Heights Station, Massachusetts Bay Transportation Authority, Blue Line, Boston, MA. Provide urban design services for the reconstruction of the station including accessibility enhancements, renewable energy and sustainable design recommendations, lighting, and bicycle and pedestrian circulation.

Urban Designer, Silver Line Phase III, Massachusetts Bay Transportation Authority Silver Line Phase III, Boston, MA. Project involved Draft and Final Environmental Impact Statement for FTA New Start. Provide planning and urban design solutions for \$750 million, FTA New Starts, bus rapid transit project

involving a tunnel to surface street transition, tunnel and surface stations, and mitigation of traffic and pedestrian impacts in a highly congested urban area. Lead role in surface station design, pedestrian access and circulation, and mitigation of landscape impacts. Project involved NEPA documentation.

Project Manager, Shams Abu Dhabi Light Rail Feasibility Study, Sorouh Real Estate, Abu Dhabi, UAE. Project Manager for a preliminary implementation study of proposed light rail and metro passing through Shams Abu Dhabi, a 1.3 million square meter residential and mixed-use development for 50,000 residents on Al Reem Island. Identified and recommended a suitable corridor for the proposed light rail system and metro through Shams including station locations and provided options for connecting to pedestrian and water taxi circulation systems.

Transportation Planner, Light Rail Feasibility Study, Municipality of San Juan, San Juan, Puerto Rico. Feasibility study for connecting two of the densest neighborhoods in San Juan by light rail to support urban redevelopment. Project Manager for corridor and transportation systems analysis team. Analyze the system's interface with the region's long term transportation system. Oversee the analysis and selection of preferred alignment and technology, stations and maintenance facility locations, and cost estimate.

Site Designer and Planner, Acadia Gateway Center, Master Plan and Environmental assessment for the Office of Passenger Transportation, Maine Department of Transportation, Augusta, ME. Provided Environmental Assessment, master planning and site design services for a new visitor center and bus maintenance facility for Acadia National Park in Bar Harbor, Maine. Master plan includes retail facilities, visitor and information center, parking, bus operations and maintenance facility, offices, and trail system. Project involved NEPA documentation for the FTA.

Transportation Planner, Caguas Light Rail Terminal Study, Puerto Rico Highway and Transportation Authority, San Juan, Puerto Rico. For the 20 km proposed Caguas Light Rail line, reviewed the Environmental Assessment on behalf of the Authority. Produced alternative alignments and designs for a light rail terminal in San Juan that would support redevelopment to a mixed-use transit village. Responsible for technical analysis, system connectivity, integration, and expansion, and assessment of congruence with the government's urban development vision.

Transportation Planner, Tren Urbano Rail Systems, Puerto Rico Highway and Transportation Authority, San Juan, Puerto Rico. Provide design review and planning services for the 17 km, New Starts metro rail system serving metropolitan San Juan. Provide intermodal transit planning, station area design, preparation of planning documents per FTA grant requirements. Authored first FTA Before and After Study.

Transportation Planner, Caguas to San Juan Bus Rapid Transit Feasibility Study, Puerto Rico Highway and Transportation Authority, San Juan, Puerto Rico. Feasibility study focusing on bus rapid transit solutions and opportunities as an alternative or precursor to light rail development for the Caguas to San Juan corridor. Generated access, parking, and route alternatives and analyzed circulation and connectivity to neighborhoods and commercial centers.

Landscape Architect, Final Site Design and Landscape Services, West Virginia University, Morgantown, VA. Provided final site design and landscape services for a two-story facility on the Monongahela River comprising restaurant, marina and boathouse serving the WVU crew team.

Transportation Planner, Phased Implementation, Viva Bus Rapid Transit System, Ontario, Canada. Phased implementation of 30 km of bus rapid transit in north suburban Toronto by design/build. Provide urban design, planning, and design guidelines supporting joint development and transit oriented development initiatives. Project involves the planning and design of several transit villages at principal nodes along the corridor.

Urban Designer and Planner, Mountainlair Plaza and Parking Structure Programming and Conceptual Design, West Virginia University, Morgantown, WV. Provided conceptual design and master planning services for an 80,000-square-foot recreational plaza located on top of a 500-car parking structure. Prepared conceptual design alternatives and led the selection process toward a preferred alternative.

Michael J. Palozzi, CEP

Education

Master of Engineering, Environmental Engineering, Clarkson University, Potsdam, New York

Bachelor of Science, Environmental Sciences, University of Miami, Coral Gables, Florida

Additional Training/Continuing Education

Certified Public Manager, Florida State University, 1986

Registrations/Certifications

*Certified Environmental Manager, 1992, 0345, Active, Florida
Engineer in Training, 1986, 300919, Active, Florida*

Qualifications Overview

Mr. Palozzi has 30 years of environmental experience in the management and implementation of complex project development and environment (PD&E) studies including the preparation of environmental impact statements, environmental assessments, reevaluations, and support documents including ecological studies, hazardous materials studies, Section 4(f) assessments, and environmental mitigation plan development. A former FDOT environmental administrator, he is well versed in regulations related to assessing the impacts associated with transportation facilities. Mr. Palozzi also has an extensive environmental permitting background having worked with most federal, state, regional, and local permitting agencies. During his career, he has had project management responsibility for a number of federal NEPA PD&E projects, engineering corridor studies, and complex permitting tasks for FDOT and a number of local governments throughout Florida.

Mr. Palozzi currently serves as a client liaison ensuring technical resources and support match client needs. Specialty areas include NEPA process, local agency program support, innovative project funding and long-term visioning of client needs.

Applicable Experience

FDOT District Seven, SR 679 (Pinellas Bayway Structure E) at Intracoastal Waterway PD&E Study, Pinellas County, FL. Mr. Palozzi oversaw development of the community involvement plan for this federally funded bridge replacement project. The community involvement plan was designed to accommodate seasonal residents, some with international addresses. Implementation of this plan was the pacing schedule item at times because of the lead time required to ensure all legal notification requirements were met.

Project Manager, FDOT Turnpike, Kirkman Road Extension PD&E Study, Orange County, FL.

Mr. Palozzi served as project manager and lead community involvement specialist for this NEPA corridor study. This 3-mile corridor passed through a commercial/ industrial area that required a community involvement plan geared to daytime meetings and innovative methods of identifying stakeholders including renters and property owners.

Project Manager, FDEP, Division of Recreation & Parks (formerly Office of Greenways and Trails) Key Largo Trailhead, Monroe County, FL.

Mr. Palozzi served as the project manager for the design and permitting of this FDEP facility. This trailhead was designed to serve as the northern welcome center for the Overseas Heritage Trail and the US 1/All-American Highway. In this role as project manager, Mr. Palozzi was responsible for all project permitting, overall plans production, and community involvement efforts necessary to support the FDEP project manager including small group meetings, agency updates and the development of briefing materials for local government and elected officials.

Monroe County, Growth Management Division, US 1/Corridor Wayfinding Master Plan and Design, Monroe County, FL.

Mr. Palozzi was responsible for the development of the Corridor Master Plan for this highway information system. Mr. Palozzi's responsibilities included the design and implementation of regional community involvement meetings to present project information, and receive input on project concerns, recommendations and corridor informational needs.

Brownfields Economic Development Pilot Project, City of Tampa, FL.

Mr. Palozzi assisted the City in implementation of their EPA Brownfields grant. In this role he drafted the community involvement plan for the affected communities within the target area. This plan included the development of project fact sheets, briefing materials for elected officials and the planning of several community meetings to inform the public of planned investigations.

Project Manager, FDOT District V, A1A Sea Wall Study, Flagler County, FL.

Mr. Palozzi served as the overall project manager of this planning/environmental study to develop recommendations for the management of ongoing erosion issues associated with Flagler County beachfront and A1A in the vicinity of SR 100. A part of Mr. Palozzi's project responsibilities included overseeing the design and implementation of a series of community involvement meetings and project planning

charettes designed to receive public input on potential beach restoration techniques and long range planning for the protection of A1A.

Project Manager, FDOT Turnpike, Allapattah Road PD&E Study, Dade County, FL. Mr. Palozzi served as project manager and lead community involvement specialist for this NEPA corridor study. This 5-mile corridor passed through a predominantly Hispanic residential community and terminated on the Homestead Air Force Base. The community involvement plan for this project included a bilingual component and a notification plan that required national coordination efforts to ensure the military personnel were properly noticed for all meetings.

Related Experience

FDOT 6, Miami, FL.

- *Special Project Coordinator.* Served as principle staff advisor to the District Secretary and District liaison to local government and the public. Worked with the Legislative Programs and Public Information Offices. Coordinated activities related to the District hazardous waste program. Provided recommendations for "next step" actions during right-of-way acquisition phase of highway design.
- *Director of Administration.* Responsible for activities relating to planning and development of the long-range element of the District's Five-Year Transportation Plan. Coordinated modifications to the Work Program and Transportation Improvement Plan with the Metropolitan Planning Organization and local government.
- *Director of Planning and Programs.* Oversaw the Planning, Programs, Administration and Program Development offices. Coordinated all planning, grants and local government involvement. Served as the District's liaison to the county and regional planning and public transportation commissions. Directed development of the District's five- and ten-year Transportation Plans, District Budget, Strategic and Resource Utilization Plans.
- *Environmental Administrator.* Directed the district-wide environmental and public involvement program. Established priorities, schedules and manpower needs and supervised the accumulation and development of project related information. Responsible for preparation of environmental impact statements, environmental assessments, and Section 4(f) statements. Directed the environmental permitting program for District projects in South Florida and acted as the Department's representative

during interagency negotiations dealing with project impacts and mitigation. Directed the District Public Involvement Section and worked with the Legislative Programs and Public Information offices to ensure that the Legislature and public were properly informed of transportation issues in South Florida.

Post Buckley, Schuh & Jernigan, Environmental Services, Tampa, FL.

- *Senior Project Manager.* Managed PD&E studies throughout the state. Responsibilities included oversight for all facets of a study including conceptual engineering, project management, ecological, cultural resources, contamination assessment, public involvement, environmental documentation, NEPA compliance, noise, and project graphics.
- *Environmental Compliance Manager.* Managed the ecological, hazardous materials, land management, air toxics and industrial hygiene programs for the West Florida Region. Project management responsibilities included document preparation, client representation during agency meetings, project scheduling, supervision of project team members and document quality control. Ecological services included environmental permitting, wetland delineations, protected species assessments, land management plans and environmental documentation.

Michael W. Parker

Education

Associate of Science, Drafting, Alfred State College, Alfred, New York

Additional Training/Continuing Education

8-Hour OSHA Health and Safety Training, Annual

40-Hour OSHA Health and Safety Training, 1989

40 Hour Hazardous Waste Site Worker Safety Training, OSHA standard 29 CFR 1910.120

Short course on Softdesk (Autodesk) Civil/Survey Module

AOS/Drafting, Alfred State College Maintaining and Troubleshooting IBM PC's and Compatibles

Registrations/Certifications

Troxler Certified Radiation Safety Officer, 1999, Active, Nationwide

Qualifications Overview

Mr. Parker is a Senior Designer with over 25 years of engineering experience designing, detailing, and constructing solid and hazardous waste landfill systems. This experience includes preparing CAD drawings and reports for the permitting, construction, and certification of landfill projects. He also has experience as an Assistant Resident Engineer performing Construction Quality Assurance activities for various environmental projects. His survey, design, and construction experience is used to perform surface modeling and volume calculations using the Autodesk Land Development Desktop Module.

Applicable Experience

Senior Designer

- Prepared Operational Sequencing drawings and related site life calculations for a proposed landfill expansion in eastern Pennsylvania. The project included layout of all temporary drainage structures and operational berms during construction. The entire Phase build-out consisted of an 88 acre baseliner and 120 acre Final Cover system.
- Prepared Conceptual Design Drawings and performed cut and fill calculations for a proposed Solid Waste Facility. The WMI Facility is to be located in a previously mined area in Pennsylvania.
- Prepared various design options during the proposed landfill expansion for Seneca Meadows Sanitary Landfill including final grading and conceptual design for a new landfill cell in the southeast corner of the site.
- Performed drafting and CAD design tasks for the preparation of Modern Landfill's expansion application including details, sections, landfill operations and plan sheets. Also included were time estimates and work load assignments for the drafting of each sheet.
- Prepared grading plans for each layer of various proposed baseliner systems using AutoCad and Softdesk Civil/Survey modules. The grading plans have spot elevations on a 50-ft grid along with critical scope breaks.
- Assistant Resident Engineer or CQA Observer for various landfill baseliner and final cover construction projects. Projects ranged from a Hazardous Waste Facility in Western New York to Solid Waste Cell Construction in Puerto Rico.
- Construction Supervisor for the installation of a 6,000-scfm Gas Flare at the WMI Central Landfill in Pompano Beach, Florida.
- Received as-built information from surveyors and, using CAD equipment, developed a contour map or panel diagram for each layer of the RMU-1 Cells 6 through 10 baseliners and Phase I/II/III Final Covers installed/placed at CWM Chemical Services, LLC in Model City, New York.
- Worked with engineers and designers from various offices to layout a landfill gas collection system for Modern Landfill, Inc. in Model City, New York.
- Prepared contour maps and digital models of each geologic and potentiometric unit for Modern Landfill's hydrogeologic site investigation. This information was gathered in the field then transferred to CAD to be contoured and used for hydrogeologic computer modeling.
- Served as construction observer for the inspection of the removal of six inches of contaminated sediment from the fire pond for CWM Chemical Services, Inc.'s facility in Model City, New York. This was done systematically to stabilize and avoid contaminating surrounding areas and assure the removal of all the sediment.
- Participated in numerous land surveys and mapping projects including site monumentation, topographic and planimetric mapping, air photo ground control surveys, baseline establishment, construction layout and grade control, and hydrogeologic location surveys.

Stacy Prekel

Education

MS, Coastal Zone Management, Nova Southeastern University Oceanographic Center

BS, Marine Science, University of South Carolina

Qualifications Overview

Stacy Prekel has over 12 years of experience in biological and environmental science, the last 8 years of which have focused on coastal and marine biology. Ms. Prekel has conducted biological monitoring for both public and private-sector clients and has extensive experience in marine biological habitat assessment, design and implementation of monitoring programs for marine benthic and fish populations, characterization of artificial reef habitats, coral restoration and transplantation, and seagrass surveys for distribution and abundance. Ms. Prekel has experience in the permitting process, specifically with JCP permitting. She has also lead and contributed to the production of NEPA documents such as Environmental Impact Statements and Environmental Assessments, as well as generation of supporting documents including Threatened & Endangered Species Biological Assessments in support of Section 7 Consultation and Essential Fish Habitat Assessments.

As Lead Biologist, Ms. Prekel supervises a staff of marine biologists and is responsible for the complete coordination of biological monitoring projects from pre-permit application activities through final product deliverables. Her project management and design activities require extensive coordination between regulatory agencies and local sponsors, which often include development of monitoring plans, mitigation planning, project impact assessments, coordination and implementation of field operations, data analysis, and generation of timely product deliverables. She has performed these duties for several large scale and multi-year projects.

Ms. Prekel has performed biological assessments and long-term monitoring of natural reef and artificial reef habitats for functional success and impact assessment. This includes identification and quantification of flora and fauna, specifically reef and seagrass resources, from *in situ* measurements, video and photo-analysis, and aerial imagery. She has conducted impact assessments to benthic habitats from pipeline routing and trans-Atlantic cable placement. Ms. Prekel has conducted coral transplantations as part of emergency restoration efforts for locally damaged areas and as mitigation. She is also a Protected Species Observer (PSO) recognized

by the Bureau of Ocean Energy Management (BOEM) and has conducted observations during sand investigations for St. Bernard Shoals, Louisiana and Longboat Key, Florida.

Applicable Experience

- Broward County Beach Shore Protection Project, Segments II and II, FL
- Longboat Key Nourishment Projects, FL
- Anna Maria Island Beach Renourishment Projects, FL
- Broward County, Segment I, FL
- Collier County Beach Renourishment Project, FL
- South Siesta Key Beach Nourishment Project, FL
- Pinellas County, Sand Key Beach Renourishment Project
- Doctors Pass, Collier County, FL
- Founder's Park Marine Restoration Project, FL
- Town of Palm Beach Reach 7, Phipps Artificial Reef
- Ocean Ridge Renourishment Project, FL
- Bahamas, National Science Foundation and University of Buffalo, Caribbean gorgonian monitoring
- Central Boca Raton Beach Nourishment Project
- South Boca Raton Beach Nourishment Project
- Siasconset Beach Nourishment Project, MA
- Biscayne Bay Seagrass Survey, FL

Jordanna Rubin, LEED AP O+M

Education

Certificate Program, Conservation Biology, Columbia University

M.P.A., Public Administration, Environment and Energy Policy, Columbia University

BA, Ancient Studies & Environmental Science, Columbia University

Registrations/Certifications

LEED Accredited Professional O+M

OSHA 40- hour HAZWOPER; Certification #102476

Stormwater, Erosion and Sediment Control Inspector, Florida

Open Water Diver, 1998, Active, Nationwide

Qualifications Overview

Ms. Rubin is a client program manager for Shaw's Sustainability Services National Practice Program. She holds a Masters in Public Administration, with a concentration in Environmental and Energy Policy, and a certificate in Conservation Biology from Columbia University in New York City.

Mrs. Rubin has a diverse professional background in environmental management and resource conservation. She currently serves as the project manager for several ARRA projects for the Florida Forest Service, Cities of Palm Bay and Miami Gardens, FL. In addition, she has experience managing sustainability projects that developed sustainability policies, energy audits, environmental stewardship reports, industry benchmark assessments, GHG inventories and most recently a LEED EB design project for the Dr Pepper Snapple headquarters in Texas. Mrs. Rubin has been involved in several sustainability conferences and workshops, presenting information on ARRA funding opportunities, sustainable design, and strategies for program implementation to city, county, state officials, and other stakeholders.

Prior to joining Shaw, Ms. Rubin was the Environmental Resources Manager for the City of Miami Beach. She was responsible for the management of all environmental projects and education programs within the City and served as a liaison to local and state environmental regulatory agencies. Mrs. Rubin was the project manager for the design, engineering, and construction of over 15 public works construction projects, including South Beach's "Beachwalk."

Ms. Rubin served as Co-Chair of the Florida Green Building Coalition, Local Government Committee for over 5 years. In addition, she is a member of US Green Building Council and the National Association of Environmental Professionals.

Applicable Experience

Client Program Manager with Shaw's Sustainability National Practice Group. Projects include: Sustainability Program Design & Implementation; Energy Audits; GHG inventories; Sustainable Design, LEED certification; development of industry benchmark reports; feasibility and gap analysis; environmental stewardship reports; coordination of proposals and business development. Projects include:

Sustainability

- Client Program Manager for CSX Energy and Water audits. Project identified facilities with significant EE incentives and identified ECRMs based on energy savings, ROI, cost and payback.
- Client Program Manager for Dr Pepper Snapple Headquarters LEED EB GOLD certification. Project included energy audit and commissioning, GHG inventory, and development of sustainable operating policies.
- Client Program Manager for Florida Department of Agriculture, Division of Forestry statewide energy audits at 15 facilities.
- Project Manager for City of Palm Bay, FL EECBG project design and implementation. Projects include an energy strategy, energy audits, GHG inventory, building automation systems, sustainability website, and development of green building and rehabilitation ordinances.
- Task Manager for Energize Missouri State Energy Program (SEP); Coordinated Energy Assessment Tool Training. Training included webinars and workshops related to an overview of Energy Audits and a Missouri tailor energy assessment tool. In addition, tasks included assisting with a program final report for several SEP programs.
- Client Project Manager for Broward County South Regional Landfill GHG emissions reporting. (2011-2013) Project includes weekly GHG readings at the landfill flare and quarterly reporting to EPA.
- GHG task manager for CEQA climate change assessment; private client, CA.
- Project Manager for City of Miami Gardens, FL EECBG project design and implementation. Projects include an energy strategy, GHG

inventory, energy forecast, commercial energy audits, development of green building codes, and creation of sustainability website.

- Conducted an energy and water consumption audit and industry benchmark report for Darden Restaurants.
- Deputy Project Manager for Sustainability Consulting project for the Florida Fish and Wildlife Commission. Project included sustainability program development and facility audits.
- LEED checklist consulting services for Natural Resource Defense Council office in Chicago, Illinois.
- Managed data collection and development of Environmental Report for CSX.
- Conducted an industry benchmark and gap analysis report for BAE Systems. Developed a maturity index to rate sustainability initiatives.
- Developed an industry benchmark report detailing environmental initiatives in the airline industry. Conducted a facility review of facilities in Ft. Lauderdale airport.
- LEED analysis and checklist for Bank United Facility.

the permitting and design of a roadway, lift station and water and sewer line in Miami Dade County.

- Conducted stormwater compliance audits for Target facilities.
- Client Program Manager for an “Eco-Risk” Contract with the South Florida Water Management District. Projects include due diligence, property assessments, and tank removals.
- Client Program Manager the City of Miami Beach; projects include an Aboveground and Underground Storage Tank compliance audit and phase one assessment.

Environmental

- Client Program Manager for City of Miami Miscellaneous Marine and Coastal Engineering Services. (2012-2015)
- Client Program Manager for City of Miami Miscellaneous Environmental Services Contract; projects include Phase I & II environmental assessments, Lead and Asbestos Surveys and other environmental services. (2008-2012)
- Project Manager for South Florida Management District Everglades Restoration Project; Due Diligence for land acquisition project. Coordinated 10 assessment teams and support functions.
- Project Manager, Landfill Gas System Operation and Maintenance, Broward County, Florida.
- Project Manager for CEMEX/Rinker civil projects including the permitting and design of 25th Street canal extension project in Miami and

Jesse P. Varsho

Education

BS, Geological Engineering and Geology, University of Wisconsin-Madison

Registrations/Certifications

Licensed Professional Engineer in Illinois, Maryland, Michigan, Minnesota and Wisconsin

Licensed Professional Geologist in Illinois

National Council of Examiners for Engineering and Surveying (NCEES) Engineering Record

American Society of Civil Engineers (ASCE)

Association of Environmental & Engineering Geologists

Certificate in AutoCAD Land Desktop 3

ASCE Certificate (Design of Waste Containment Liners)

ASCE Certificate (HEC-HMS)

ASCE Certificate (Streambank Protection and Design)

International Erosion Control Association Certificates for Designing and Installing Erosion Control BMPs

OSHA 40 Hour Hazardous Material Certification, 2002 and associated 8-hour refreshers

Qualifications Overview

As Head of Landfill Engineering, Mr. Varsho is responsible for overseeing site characterizations, remedial engineering, engineering geophysics, and soil foundation mechanics, groundwater flow assessments, and contaminant transport through porous and fractured media for a large variety of solid waste related projects. Mr. Varsho is responsible for assisting with the siting, zoning, design, and permitting of solid waste management facilities, including municipal solid waste landfills and transfer stations. He evaluates existing facilities for compliance with local, state and federal regulations, and conducts hydrogeological field investigations. He develops capacity and cost estimates for closure, post-closure care, construction, and remediation.

Mr. Varsho's project management responsibilities include coordination and supervision of the project team consisting of engineers, technicians, geologists, planners, and CAD drafters. He has supervised the development of designs and construction of landfill liners, leachate collection systems, landfill gas collection systems, final cover systems, stormwater management systems, engineering analyses, operating systems, closure and post-closure care plans, cost estimates, and permit applications. He also has extensive experience developing stormwater management systems mainly focusing on green sustainability design concepts.

Applicable Experience

Lake County C&D Landfill Expansions. Project Manager responsible for the coordination and

development of an IDEM permit application for the Phase II expansion for approximately 1.7 million ascy at a construction and demolition landfill. Responsible for developing the facility layout, design, and closure plans for the proposed landfill expansion. Also was responsible for the development of a zoning and drainage board applications for a second expansion (Stoller Expansion). The drainage board application consisted of relocation of a creek which required compensatory storage and was modeled utilizing HEC-HMS and HEC-RAS software. Also was responsible for preparing and presenting at various public meetings.

Lee County Landfill. Assisted in the development of a comprehensive siting application for the vertical and horizontal expansion of an existing landfill. Performed geotechnical analysis including slope stability, bearing capacity, final cover and leachate liner stability, and waste and foundation settlement. Calculated and documented the appropriate size of the leachate management and landfill gas collection systems. Ran HELP Model and analyzed results for both the operational and post-closure time periods. Performed volume calculations for different landfill designs and incoming waste quantities to determine operational life of landfill. Developed an operation plan to mine an unlined landfill, reclaim and recycle the waste, then landfill remaining waste to a lined landfill.

Assisted in the development of two supplemental permit applications which requested the use of an alternative liner system consisting of a GCL, and allow the landfill to re-circulate leachate. Performed slope stability analysis and the HELP Model and analyzed the results for both operational and post-closure time periods including leachate re-circulating.

Los Alamos County Landfill. Assisted in the evaluating various sites for potential landfill development. Performed a fatal flaw analysis and developed conceptual site layouts/designs and volume capacities of a new landfill facility. Assisted in developing the site layout for a new transfer station at the existing landfill which required stormwater modeling. Transfer station required the design of a passive landfill gas venting system. Reviewed filing history and performed volume and landfill gas generation analysis to determine NSPS and Title V requirements. Also was responsible for developing the final landform, evapo-transpiration final cover, closure plan, and closure/post-closure cost estimates for the existing landfill facility. Evaluated alternative final covers to support a solar energy project.

Closure of the Congress Development Company Landfill. Project Manager responsible for the closure of the landfill under multiple consent orders. Responsibilities include CQA officer overseeing installation of the final cover system, landfill gas and leachate management systems. Also responsible for revisions to the design the leachate management, landfill gas management and groundwater detection systems at the landfill.

The project consists of a unique landfill that was developed within a 350 foot quarry that contains over 300 feet of leachate (temperature of the leachate were measured over 270 degrees F). Designed, fabricated, and installed unique systems such as: interior and exterior landfill gas condensate sumps, temperature and pressure probes, settlement monitoring program, and landfill gas boots to handle the temperature and pressure conditions at the landfill.

Responsible for fulfilling the Illinois Attorney General reporting and work plan requirements. Reporting requirements included bi-weekly reporting of leachate and landfill gas data, monthly reporting of leachate and gas composition, settlement, temperature, and pressure data. Work plan required review and analysis of seven areas including: landfill gas collection and control systems, site wide order, heat and pressure event, off-site landfill gas migration, landfill gas flares, stormwater, and leachate management.

Winnebago Landfill. Project Manager responsible for developing and implementing a consent decree that resolved non-compliance concerns related to releases of fugitive and sulfur dioxide emissions. Consent decree required multiple LFG modeling of existing and future LFG rates along with on-site sampling for locations of fugitive emissions.

Also serving as CQA officer the installation final cover system for the Northern Unit and the installation of the bottom liner and leachate collection system for the North Expansion Unit.

Clinton Landfill – Chemical Waste Unit. Project Manager responsible for the development of a TSCA-regulated chemical waste unit at the existing Clinton Landfill No. 3; landfill has been designed to accept manufactured gas plant soil and PCB waste materials. The bottom liner system consists of a triple composite landfill with multiple redundant leachate collection systems. Required permits from both the US EPA Region V and IEPA.

Indian Creek Landfill No. 2 Expansion. Project Manager responsible for the coordination and

development of local siting and IEPA applications for a landfill expansion of approximately 16.25 million ascy at a MSW landfill within Tazewell County, Illinois. Responsible for developing the facility layout, design, CQA, landfill gas management systems, operating and closure plans for the proposed landfill expansion. Also responsible for the overseeing various sub-consultants including real estate, traffic, land-use, etc.

Fox Moraine Landfill. Project Manager responsible for the coordination and development of a local siting application for a greenfield landfill of approximately 40 million ascy within Kendall County, Illinois. Responsible for developing the facility layout, design, CQA, landfill gas management systems (interim and final), operating and closure plans for the proposed landfill expansion. Also responsible for the overseeing various sub-consultants including wetlands, archeology, real estate, traffic, land-use, etc. Also assisted in the design and modeling of an off-site wetland mitigation area and coordinated the filing of a 404/401 joint permit application.

Meadow Branch Landfill. Engineer responsible for designing a liquid removal system for the existing gas collection and control system. Design included specification number, location and types of pumps, sizing both liquid and air conveyance lines and air compressor.

Jefferson Parish Landfill. Engineer responsible for design and development of construction drawings and specifications for the Phase IV expansion of the existing GCCS system. Also was responsible designing an interim horizontal gas collector system to be used during filling activities.

Seabreeze Landfill. Engineer responsible for design, permitting and development of construction drawings and specifications for the expansion of the existing GCCS system. Also was responsible designing a liquid removal system for the existing gas collection and control system in order to increase gas flows rates and to eliminate NSPS violations

DeWitt County – Clinton Landfill. Performed a review of the current landfill design and proposed landfill design. Researched local geology and hydrogeology at site location along with proposed landfill location for compliance of IEPA location standards. Performed volume calculations for different landfill design and incoming waste quantities to determine operational life of the proposed landfill. Reviewed leachate re-circulating plans and made recommendations to improve design.

Jason L. Whitman, P.G., CHMM

Education

MS, Geology, Florida Atlantic University, Boca Raton, FL
BS, Geology, Florida Atlantic University, Boca Raton, FL

Additional Training/Continuing Education

8-Hour OSHA Refresher (Annual)
40-Hour OSHA Training
PDIC Open Water Dive Certification
AQTESOLV, Superslug; MODFLOW; ARCVIEW
HERMIT 2000 Environmental Data Logger, HERMIT MiniTroll

Registrations/Certifications

Professional Geologist, Florida, PG2379, Active, exp 07/2014
Certified Hazardous Materials Manager, #12170, Nationwide, Active

Qualifications Overview

Mr. Whitman is a Project Manager/Senior Geologist with over 13 years of experience, responsible for the management of both private client and state-funded projects. Mr. Whitman has utilized his expertise to delineate contaminant plumes, evaluate contaminant pathway migration patterns, and design and installation of groundwater remediation systems. He has worked on projects targeting the remediation of automotive and aircraft petroleum hydrocarbon contaminants, dense non-aqueous phase liquids, as well as a wide range of industrial wastes such as pesticides, polychlorinated biphenyls, chlorinated solvents, brine contamination, lead, arsenic, and chromium in both soil and groundwater regimes.

Applicable Experience

Senior Geologist, Environmental Services for Dragados USA, I-595, Broward County, FL. Shaw has been a key provider of environmental services to Dragados USA, Inc. roadway expansion operations. Dragados USA, Inc. is the prime contractor on the I-595 Corridor Roadway Improvements project consists of the reconstruction of the I-595 mainline and all associated improvements to frontage roads and ramps from the I-75/Sawgrass Expressway interchange to the I-595/I-95 interchange, for a total length along I-595 of approximately 10.5 miles, and approximately 2.5 miles on Florida's Turnpike from Peters Road to Griffin Road. The design and construction cost of the project is approximately \$1.2 billion. Mr. Whitman provided technical advice to the Project Manager.

Site Project Manager, AT&T MSA, Various US Locations, Puerto Rico, the Virgin Islands, and parts of Canada. AT&T has approximately 3,500 such facilities, and their Spill Prevention, Control and Countermeasure Plans must be revised and PE certified every five years in accordance with 40 CFR Part 112, "Oil Pollution Prevention and Response; Non-Transportation-Related Onshore and Offshore Facilities." For each work order to prepare and certify SPCC plans, Shaw personnel conducts a site survey before preparing or revising the SPCC plan according to an SPCC plan template developed and provided by AT&T. A Shaw Professional Engineer licensed in the state where the facility is located then provides professional engineering certification of the plan. Mr. Whitman manages a site for AT&T that involves monitoring, assessment, remediation, system design, and permitting for a historical diesel spill. Over \$81,000,000 in cost to date.

Senior Geologist, 7-Eleven Alliance Program, Various Locations across the US. Shaw and its predecessor companies have been a key provider of environmental services to 7-Eleven stores' retail petroleum operations since 1993. The total services volume provided over that period has totaled over \$100 million. 7-Eleven currently has a total of 5,900 owned, operated, and franchised stores in the U.S., of which about 50% offer gasoline. Shaw's principal work is associated with 7-Eleven stores with gasoline sales. Mr. Whitman has been working with 7-Eleven for the past 11 years. Mr. Whitman directed and supervised site assessments, natural attenuation monitoring, treatment system design and installation, pilot testing, system operation and maintenance, tank closure assessments, and property due diligence projects for various 7-Eleven properties located in Florida.

Project Manager, City of Miami Miscellaneous Environmental Contract, Miami, FL. Shaw was contracted by the City of Miami, FL for miscellaneous environmental services including but limited to, completed planning and design services, programming, phase I and II site assessments, surveying, geotechnical, feasibility studies, options evaluations, public meetings, detailed facility assessments, lead-based pain analysis, asbestos surveys, mold assessments and recommendations, cost estimates, opinions of probable construction cost, preparation of bid and construction documents, review of work prepared by sub-consultants and other consultants, field investigations and

observations, construction contract administration, as-built documentation and other related environmental services. Conducted Phase I and II, groundwater and soil testing, AST design, oversight, and SPCC for the City of Miami. Total cost to date: \$250,000.

Project Manager, Florida Department of Transportation District VI – Contamination

Assessment and Remediation, Miami Dade and Monroe Counties. Shaw has been a Contamination Assessment and Remediation contractor to the Florida Department of Transportation District VI since 2008. The total services volume provided over that period has totaled over \$3.5 million. Shaw's principal work is to support all phases of FDOT's business with an emphasis on the identification, handling, assessment and remediation of hazardous and non-hazardous materials on State roadways or any situation that presents an immediate threat to the environment or citizens. Mr. Whitman works as an advisor to this program for District VI since inception of contract.

Project Manager, Miami International Airport, Miami, FL. Tasked to complete the development of a remedial action plan for the remediation of a former cargo area impacted by chlorinated solvents. Scope included well sampling, well installation, aquifer pump testing, exfiltration testing, treatability studies, and RAP preparation.

Project Manager, South Florida Water Management District. Client contact and Manager for third-party technical design review task order for multiple SFWMD design projects using a team of highly experienced technical reviewers across the US both employed by Shaw and subcontracted out. The reviews are performed using www.projnet.org and completed from the design phase all the way through to the final design package. Responsible for hosting and participating in kick-off meetings, design workshops, and on-site design meetings with SFWMD staff, SFWMD subcontracted designers, and review team members. Managed all financial aspects of the invoicing and labor tracking.

Project Manager, Scott Homes – Sectors I - IV, Opalocka, FL. Performed assessment and cleanup of a former dump site located adjacent to the Gwen Cherry landfill. Area is currently slated to be developed to low income housing, but is impacted by lead contamination in hazardous levels as a result of dumping. Scope includes soil boring installation, mapping lithology, well installation, soil excavation, and soil disposal.

Interim Project Manager, North and South Dade Landfills , Landfill Gas Monitoring, Miami-Dade County, FL. Managed Shaw's landfill gas monitoring services for the underground gas collection system, flare monitoring, green house gas data collection, surface emission and migration probes monitoring services at the South and North Dade County landfills.

Project Manager, Anadarko Petroleum. Tasked to manage multiple remote site projects related to the assessment and design of remedial options for saltwater plume present in the potable aquifer system at depth from historic well drilling activities in Felda, Florida. Managed office operations (data compilation, reporting, permitting, and scheduling), field operations (construction of remedial system, trenching, drilling, contractor oversight and berm construction), and all subcontracted services. Served as client contact and was responsible for preparing all cost proposals and client invoices.

Project Manager, Southwest Regional Landfill, Davie, FL. Tasked to complete an upgrade and retrofit project to modify the above and below ground connections to six active landfill gas wells at the South West Regional Landfill. The project required excavation, onsite fusing of HDPE piping, and backfilling.

Senior Geologist, Wingate Landfill, Fort Lauderdale, FL. Performed subsurface assessment of groundwater and soil contamination at the Wingate Landfill during the closure process. Project work involved soil boring installation, mapping of lithology, well installations, groundwater sampling, and soil disposal.

Professional Affiliations

Member, Academy of Certified Hazardous Materials Managers (ACHMM)

Member, Institute of Certified Hazardous Materials Management (ICHMM)

Member, South Florida Chapter of Certified Hazardous Materials Managers

6 Management Approach

Shaw’s diverse project background has resulted in project control mechanisms and procedures that surpass most consultants. Our internal controls facilitate accountability, accuracy, consistent quality, and sustainable results for our clients.

We will approach each assignment from the City with a drive for effective results, cost-effectiveness, timeliness, and sustainability. Our proposed Project Manager brings a familiarity with the City and knowledge of the community. Mr. Hasbun will develop scopes of service and assign personnel appropriately to meet the City's objectives in terms of design, budgets, and schedule.

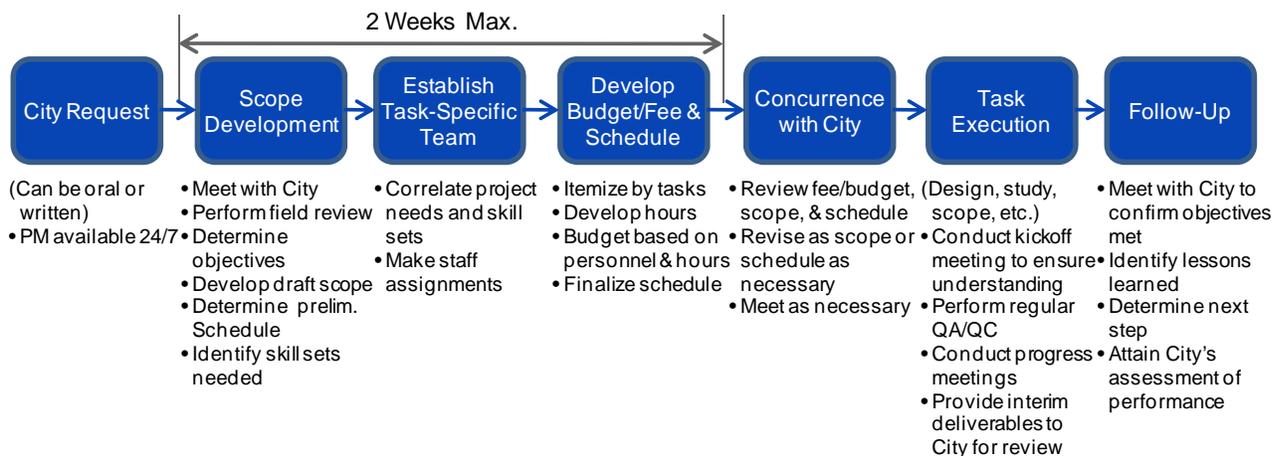
We understand that the scope of services could vary widely. Our goal and commitment will be consistent: ensure that the City is satisfied with the end product of any task, project, or other service that we provide. We have developed a seven-step process to support these objectives (see **Exhibit 6-1**). Scope development will begin immediately upon receiving a request from the City, and we will prepare a draft scope/schedule/fee within a maximum of 2 weeks for medium to large-sized tasks. No task or project will begin until the City is in agreement with the scope/schedule/fee. Our approach is not to utilize a “one-size fits all” scope of services, but to create a document based upon the objectives developed jointly with the City.

6.1 Managing Schedules and Budgets

Managing the Schedule

The scope of services for each project will be used in developing a project specific schedule that tracks the critical path for the work. This tool will be a working document that will be updated at least weekly by our Project Manager. The schedule will be reviewed with the City and adjustments will be made as needed during both the scoping and task execution phases to meet the City's requirements. The schedule will contain at a minimum: data collection, deliverables and interim submittals development, review periods,

Exhibit 6-1. Process Flow for City Projects



permitting phases, public involvement, utility coordination, and others as necessary. Besides the considerable expertise and resources shown on our organizational chart, we can make available additional personnel from the resources of the Shaw team to offer more manpower and/or expertise and experience in other service areas. *In other words, you can count on the Shaw Team for any solution that you need and rest assured that project schedules will be met.*

Exhibit 6-2 shows a sample schedule for a typical small municipal intersection project with conservative task durations (subtasks are hidden in some cases to save space).

Managing the Project Budget

Shaw has experience in working with municipalities throughout the state. We understand the issues you face with budgets and the need to minimize costs. We are prepared to help you maximize the return for the dollars you can spend.

Design Fee. We will work proactively with the City on developing an efficient streamlined design fee based on only the necessary minimum scope of services. We will provide fee estimate backup details, hours per classification of personnel per task, as well as labor rates in an open-book format. Due to Shaw's structure, we are able to offer lower labor rates than most consultants of our size.

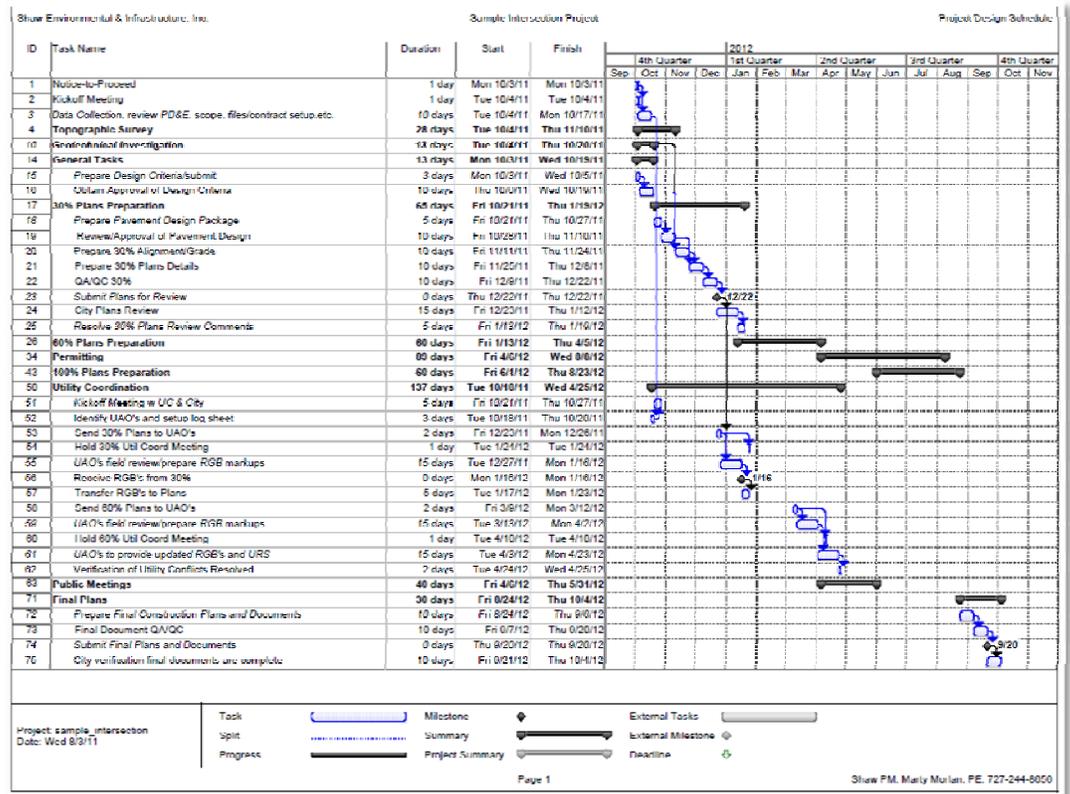
Construction Costs. Shaw understands the contractor side of our business since we self-perform a large amount of construction, design-build, and construction management work throughout the country. This experience gives us valuable insights as we develop project construction cost estimates. We will prepare a preliminary construction cost estimate in the scoping stage of a project and will update the estimate during the design process at key milestones (30%, 60%, etc.). This enables us to provide continual feedback to the City regarding design decisions and alternatives. We utilize the latest available construction cost data (FDOT, other cities, and

Good Communications Aid Efficient Projects

We believe that good communications, in all of its forms, are the foundation for successful program management. Communications within our team and with the City will be frequent and clear. We will offer established lines of authority, accountability, and accessibility so that the City never has to wait long for the information they need. Our approach to complete contract/project coordination and communication includes:

- One primary point of contact available 24/7
- Proven communication tools: cellular phones, blackberry, e-mail systems, and dedicated Internet portal contract site for information sharing
- Regular progress meetings and status reports
- Concise documents and document control

Exhibit 6-2. Sample Design Schedule



counties) as well as our dedicated estimating department to develop and review estimates.

Operating and Maintenance Costs. Shaw’s experience with maintaining and operating public works facilities will come to play in managing operating and maintenance (O&M) costs. Some ongoing projects include Fort Rucker, AL and Fort Benning, GA Base Operations Support which included over 63,000 acres of roads and grounds as well as stormwater systems. Shaw is also *overseeing construction of the \$2 billion Croton Water Filtration Plant (water treatment) in New York*. This experience provides a thorough understanding of the O&M costs which apply to a wide-variety of projects.

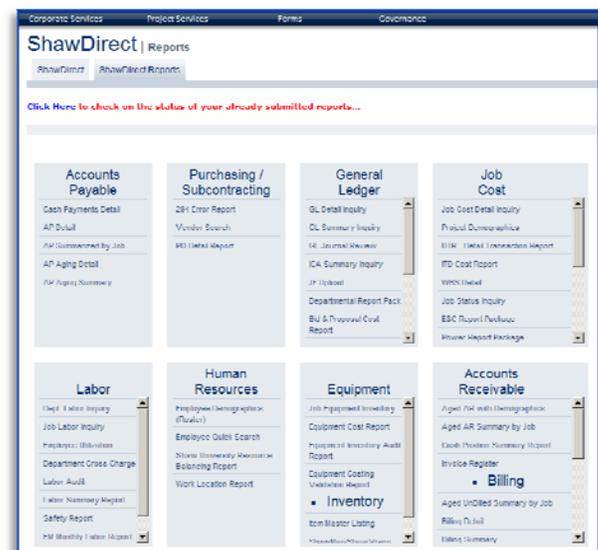
Budget Control. Shaw has a comprehensive set of tools to monitor costs. Through our ShawDirect on-line site, we are able to review daily all costs to a project. Our Project Manager will use this and other tools to monitor the project and make projections/adjustments to stay within budget. Fully-detailed reports are easily prepared. The construction cost estimate will be updated at key intervals and reviewed with the City to aid in decision-making regarding alternatives and design options.

6.2 Quality Control

Shaw is passionate about the quality of its products and services. We have an established Quality Assurance/Quality Control (QA/QC) program that promotes effective management of projects by setting common sense, practical guidelines for work activities and products. The goal of our QA/QC program is to ensure that our clients consistently receive high quality deliverables. This not only saves time but it ensures the City receives deliverables that are on target with the agreed upon scope of services.

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Our formal Quality Management System (QMS) was developed to be responsive to the international quality standard, ISO 9001-2000. The QMS (depicted in **Exhibit 6-3**) provides a clear perspective of the company’s commitment to quality management for both Shaw team members and contractors. This program will be the foundation for our work with the City of Key West. Most importantly, the QMS assists individuals in determining their separate and collective quality assurance/quality control (QA/QC) responsibilities and the means for fulfilling them, so that verifiable quality is built into work as it is completed.



Our on-line system allows Project Managers to review project costs and to maintain their “no surprises” commitment to their work.

6.3 Shaw Quality Assurance Project Plan for City of Key West

Shaw's goal is to provide quality products and services and involves each team member in our quality process. The Project Manager and Leads ensure the team member responsible for an individual task has a clear understanding of the task assignment, its purpose, schedule, and expected end product. Before work begins, they identify the rules, regulations, and standards that apply, such as SFWMD rules, FDOT Greenbook, etc. The team member responsible for the task assignment will utilize the rules, regulations and standards applicable to the specific task assignment and ensure that any data obtained from field evaluations is obtained in accordance with the appropriate requirements, regulations, and standard field testing procedures. Any data analysis performed by a testing lab will be reviewed and thoroughly discussed with the lab personnel and other team members to ensure proper analysis methods were utilized and test results are accurate.

Our team includes two quality assurance managers: Don Lewis, P.E. and Jim Martin, P.E. They will be responsible for developing the Quality Assurance Project Plan (QAPP) as appropriate and ensuring that the team is properly implementing the Shaw QMS and QAPP. They will review deliverables for compliance with the quality and accuracy expectations of our clients. The QAPP includes a comment tracking form that ensures each comment is properly addressed, the product is corrected, and corrections are verified prior to that product being submitted to the client. **Exhibit 6-4** shows this form.

Shaw's QAPP would include at a minimum:

- Project Organization
- Problem Definition/Background, Description and Schedule
- Data Quality Objectives and Criteria for Measurement Data
- Special Training Requirements/Certifications
- Sampling Design Process
- Sampling Methods, Sample Handling and Custody
- Analytical Methods and Equipment Calibration Requirements
- Assessment and Oversight
- Data Validation and Usability
- Data Management, Documents, and Records

Shaw has extensive experience developing these documents which are extremely beneficial in obtaining an agreement with regulatory

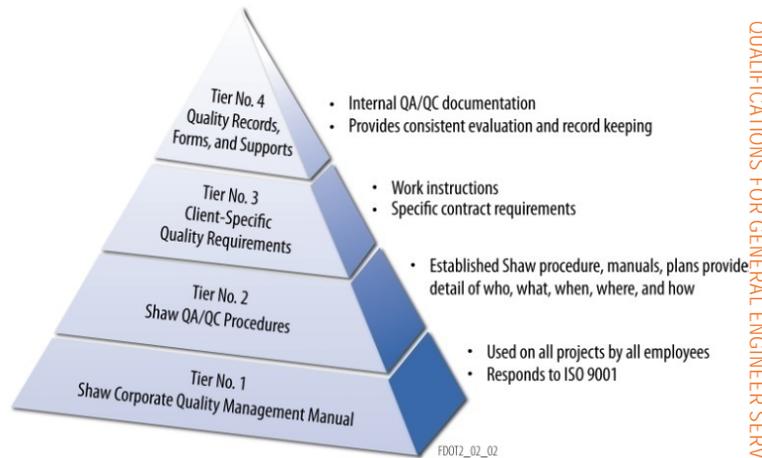


Exhibit 6-3. Shaw's Quality Management System

Quality Management System Plan (Tier 1) - The Shaw Quality Management System Plan (QMSP) provides the framework for the QMS and establishes integrated processes for achieving client satisfaction and maintaining consistent, reliable work performance. The QMSP also defines the minimum requirements and general responsibilities for implementing the QMS. It is based on the requirements of ISO 9001.

Procedures (Tier 2) - Shaw Standard Operating Procedures prescribe the methods by which the company provides products and professional services and documents the results. Standard Operating Procedures have been developed for over 100 administrative and technical topics.

Client-Specific Quality Requirements (Tier 3) – Ensures contract/project requirements are addressed.

Quality Records (Tier 4) - Tier 4 is focused at the program or project-specific level and establishes requirements for deliverables and record keeping to meet the quality objectives established for a specific project.

agencies, and our clients, *prior* to performing the work. Our experience shows that this saves our clients both time and money.

6.4 Subcontractor Management

For purposes of obtaining required services or supplies for the performance of projects, Shaw maintains and employs a network of prequalified subcontractors. Shaw utilizes subcontractors that offer a specialized technical service or provide an ancillary support function that typically are outside Shaw normal areas of expertise. Selection of a subcontractor or consultant is a function of the special skills required, site location, and availability to perform high-quality work within cost and schedule. Shaw currently has over 4,000 prequalified subcontractors nationwide.

Support services provided by subcontractors are seamless and transparent to the client, and the point of contact for all contractual and field activities will always be the Shaw Project Manager. The Project Manager coordinates directly with our subcontractors to ensure that the scope of work, schedule, deliverables, and reports are clearly defined and understood. Internal coordination between the subcontractors and Shaw personnel are directed by the Group Manager during the execution of work.

6.5 Communications

Shaw recognizes that good communications is a very important element of a successful project. All parties or stakeholders must be armed with the information they need in order to perform their work, communicate it to others and to participate in overall project progress. Communications with the client are an obligation and a tool for success. Shaw’s PM will act as the central point of contact in the communications system. Our goal is to maintain a straightforward communication system for stakeholders and relieve some of the burden of the City’s project management staff. Our Project Manager and Leads would be responsible for ensuring that the City is kept abreast of issues and is consulted when necessary for the success of a project or task. Shaw staff is equipped with the latest technology and tools to enable communications 24/7 with stakeholders. Our managers have Blackberry cellular phones, laptop or desktop computers and are available via e-mail, phone calls, text messages, etc. Our staff is encouraged to utilize personal communications (verbal by phone or in person) in many instances to ensure a clear understanding of messages and/or instructions are received.

Review Comments & Responses



PROJECT: Monroe County Conceptual Wayfinding Plans	CLIENT PROJ NO: 5092786	Shaw Proj No: 144345
COMMENTS BY: Patricia Smith, AICP, Transportation Planner	RESPONSE BY: Mervy McLean	DATE: 7/10/2011
DOCUMENT: Preliminary Concept Plans	CHECKED BY: Mike Palozzi	SUBMITTAL: 6/10/2011

Page 1 of 2

NO.	DWG.	COMMENT	RESPONSE
1.		The County has reviewed the subject plans and offers the following comment(s): How were the existing roadside signs located and placed on the drawings?	The existing sign locations are derived from the signage inventory for US 301. The locations have been plotted by utilizing the Northings/Easting which were obtained by use of field GPS methods.
2.	2	What was the rationale used to determine the locations of proposed wayfinding signs?	The proposed wayfinding sign locations were determined based upon the requirements of the current Manual of Uniform Traffic Control Devices (MUTCD) regarding location and were adjusted as determined to be necessary due to field conditions (proximity to other signs, etc.)
3.	3	Some of the sign numbers are difficult to read.	We have moved some of the text in order to improve the legibility.
4.	10	We did not see some of the existing signs for the County Health Center	Per our last meeting, we had agreed that the signs for emergency services facilities would not need to be shown since they will not be removed or affected by the proposed wayfinding system. We can revisit that issue should you wish, however, to show these additional signs may affect the legibility of the proposed wayfinding signs by adding clutter to the drawings.

Exhibit 6-4. Shaw’s Review Comments and Responses Form
 Shaw’s ultimate goal and measure of success is if the client is happy with our end product or services. We are firm believers that a review process is a normal part of any product deliverable or service to the City whether it is an environmental report, a progress report or a set of construction plans. As part of Shaw’s standard operating procedures, any client-generated review comment is addressed and answered in a professional and respectful manner. Shaw utilizes a Comment/Response written format to formalize issue resolution or review comments are addressed at phased reviews. Shaw will ensure issues are addressed to the satisfaction of the City prior to proceeding with further development of plans or services. Ample time is allotted in all project schedules to allow for this process to occur.

Subcontractor Management

Shaw applies a rigorous pre-qualification process for all our vendors. This process includes completion of a Certification and Representation that identifies the company size and employee profile. If the subcontractor is a minority business, they must also present their certification. Each must also sign a Shaw Work Agreement and General Safety Rules for Contractors and provide a Certificate of Insurance. Over the course of the work, Shaw monitors each subcontractor’s safety EMR to ensure they maintain an acceptable rating. The low EMR translates to fewer project delays due to accidents from unsafe work procedure and, therefore, reduced project costs.

Progress Meetings. On many projects, the Shaw Project Manager communicates on a daily basis with the Client contract/project management personnel on project status and other issues. Formal progress meetings are established on a bi-weekly schedule with the Client Project Manager to review: past and current task assignments; action item responsibility and schedule; delay and schedule adjustments; request for information; and progress reporting/documentation. Subcontractors and members of the Shaw management and work teams may be invited to participate as/when necessary. Written meeting minutes will be prepared and distributed to all parties immediately following any meeting to document any decisions made and ensure a clear understanding.

Status Reports. Shaw provides a customized summary report of ongoing and completed tasks using our management tracking system. This report is an effective tool to provide information and promote feedback regarding the contract and project status. The report details subcontractor payment schedule, schedule compliance and variance, authorized funds remaining, costs to date, unbilled balance, an estimate of completion, an invoicing schedule, and task completion history and task forecast summary. This level of direct communication between the Client and Shaw team encourages proactive decision-making and results in improved performance.

Documentation. Well written project documentation is a key element of a good communication system. We will maintain written records of all internal and external meetings and decisions made during projects to keep both the City and the project team informed of issues as they arise.

Exhibit 6-6. Relevant Standard Operating Procedures Ensure Quality and Safe Performance

Shaw standard operating procedures help ensure that personnel know proper procedures to execute their work with excellence and in a safe manner.

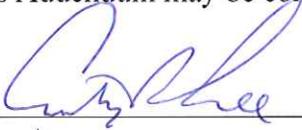
- ✓ Contracts Administration
- ✓ Engineering
- ✓ Environmental Sciences
- ✓ Equipment Services
- ✓ Estimating
- ✓ Field Sampling
- ✓ General
- ✓ Geosciences
- ✓ EH&S
- ✓ Procurement / Subcontracts
- ✓ Project Management
- ✓ Quality Assurance Procedures
- ✓ Technical Publications

7 Required Forms

Shall be modified to read:

Past five (5) years of specific relevant experience. The examples should include the project description, name of client, client's contact and telephone number, design services fee, identify if project was constructed or not and project cost, name of contractor awarded project, and contractor's representative and telephone number.

All Proposers shall acknowledge receipt and acceptance of this Addendum No. 1 by submitting the addendum with their proposal. Proposals submitted without acknowledgement or without this Addendum may be considered non-responsive.



Signature

Shaw Environmental & Infrastructure, Inc.
Name of Business



State of Florida
Board of Professional Engineers
2507 Callaway Road, Suite 200
Tallahassee, FL 32303-5268

Shaw Environmental & Infrastructure, Inc.
4171 ESSEN LANE
BATON ROUGE, LA 70809

Each licensee is solely responsible for notifying the Florida Board of Professional Engineers in writing the licensee's current address.

Name changes require legal documentation showing name change. An original, a certified copy, or a duplicate of an original or certified copy of a document which shows the legal name change will be accepted unless there is a question about the authenticity of the document raised on its face, or because the genuineness of the document is uncertain, or because of another matter related to the application.

At least 90 days prior to the expiration date shown on this license, a notice of renewal will be sent to your last known address. If you have not yet received your notice 60 days prior to the expiration date, please call (850) 521-0500, or write, Florida Board of Professional Engineers, 2507 Callaway Road, Suite 200, Tallahassee, FL 32303-5268 or e-mail board@fbpe.org. Our website address is <http://www.fbpe.org>.

State of Florida
Board of Professional Engineers

Shaw Environmental & Infrastructure, Inc.

Is authorized under the provisions of Section 471.023, Florida Statutes, to offer engineering services to the public through a Professional Engineer, duly licensed under Chapter 471, Florida Statutes.

Certificate of Authorization

EXPIRATION: 2/28/2013
AUDIT NO: 228201302866

CA. LIC. No:
27834

State of Florida

Department of State

I certify from the records of this office that SHAW ENVIRONMENTAL & INFRASTRUCTURE, INC. is a corporation organized under the laws of Louisiana, authorized to transact business in the State of Florida, qualified on December 17, 2004.

The document number of this corporation is F04000007244.

I further certify that said corporation has paid all fees due this office through December 31, 2012, that its most recent annual report was filed on January 9, 2012, and its status is active.

I further certify that said corporation has not filed a Certificate of Withdrawal.

Given under my hand and the Great Seal of Florida, at Tallahassee, the Capital, this the Eleventh day of January, 2012



Secretary of State



Authentication ID: 800218008518-011112-F04000007244

To authenticate this certificate, visit the following site, enter this ID, and then follow the instructions displayed.

<https://efile.sunbiz.org/certauthver.html>

**SWORN STATEMENT UNDER SECTION 287.133(3)(a)
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES**

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICE AUTHORIZED TO ADMINISTER OATHS.

1. This sworn statement is submitted with Bid, Bid or Contract No. 12-005 for General Engineering Services

2. This sworn statement is submitted by Shaw Environmental & Infrastructure, Inc.
(Name of entity submitting sworn statement)

whose business address is 1228 Winter Garden Vineland Road, Winter Garden, FL 34787
(Gulf Atlantic Headquarters address) and (if applicable) its Federal Employer Identification Number (FEIN) is 75-304-4680 (If the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement.)

3. My name is Curtis Lee, P.G., PSSC and my relationship to
(Please print name of individual signing)

the entity named above is Gulf Atlantic District Manager.

4. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or with the United States, including but not limited to, any Bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, material misrepresentation.

5. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

6. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means
 1. A predecessor or successor of a person convicted of a public entity crime: or
 2. An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

7. I understand that a "person" as defined in Paragraph 287.133(1)(8), Florida Statutes, means any natural

person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which Bids or applies to Bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

8. Based on information and belief, the statement, which I have marked below, is true in relation to the entity submitting this sworn statement. (Please indicate which statement applies.)

Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989, AND (Please indicate which additional statement applies.)

There has been a proceeding concerning the conviction before a hearing of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer did not place the person or affiliate on the convicted vendor list. (Please attach a copy of the final order.)

The person or affiliate was placed on the convicted vendor list. There has been a subsequent proceeding before a hearing officer of the State of Florida, Division of Administrative Hearings. The final order entered by the hearing officer determined that it was in the public interest to remove the person or affiliate from the convicted vendor list. (Please attach a copy of the final order.)

The person or affiliate has not been put on the convicted vendor list. (Please describe any action taken by or pending with the Department of General Services.)

Curtis Lee

(Signature)
July 27, 2012

(Date)

STATE OF FLORIDA

COUNTY OF ORANGE

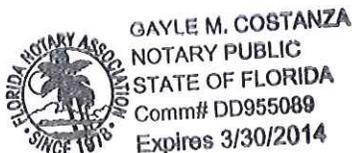
CURTIS LEE
PERSONALLY APPEARED BEFORE ME, the undersigned authority,

CURTIS LEE who, after first being sworn by me, affixed his/her signature in the
(Name of individual signing)

space provided above on this 25th day of July, 2012.

My commission expires:
NOTARY PUBLIC

Gayle M. Costanza





Organizational Chart – CSL
As of 11-16-11

