PROPOSAL TO PREPARE

WATER TRAIL MAP AND GUIDE PREPARATION

Prepard for:

OHIO RIVER TRAIL COUNCIL

Monaca, Pennsylvania

Prepard by:

SKELLY AND LOY
ENGINEERING - ENVIRONMENTAL CONSULTANTS

Harrisburg - Pittsburgh, Pennsylvania
Morgantown, West Virginia

October 2012

QUALIFICATIONS AND COST PROPOSAL TO PREPARE WATER TRAIL MAP AND GUIDE

PREPARED FOR

OHIO RIVER TRAIL COUNCIL
1100 PENNSYLVANIA AVENUE
MONACA, PENNSYLVANIA 15061

PREPARED BY

SKELLY AND LOY, INC.
ENGINEERING-ENVIRONMENTAL CONSULTANTS
449 EISENHOWER BOULEVARD, SUITE 300
HARRISBURG, PENNSYLVANIA 17111

OCTOBER 10, 2012

R12-0493.P00

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SKELLY AND LOY
ENGINEERING - ENVIRONMENTAL CONSULTANTS

Phone: 717-232-0593
800-892-6532

Fax: 717-232-1799

October 10, 2012

Dr. Vincent Troia
Chief Executive Officer
Ohio River Trail Council
1100 Pennsylvania Avenue
Monaca, Pennsylvania 15061

Re: Qualifications and Cost Proposal to Prepare Water Trail Map and Guide

Dear Dr. Troia:

Skelly and Loy, Inc. is pleased to submit this proposal and cost estimate to develop a water trail map and guide for the Ohio River Trail Council (ORTC). Our team understands that the intention of this project is to provide a visually aesthetic and easy-to-understand and use water trail map and guide to be used by paddlesports enthusiasts, motor boaters, and anglers. We will collect, review, and extract all relevant data from ORTC and various other sources including but not limited to the sources that are cited under item 2.1 in this RFP. Information collected will be analyzed for appropriateness of incorporating the various data sources into the ORTC spatial database (database containing all of the GIS data). Next we will view and boat the corridor to identify and GPS additional hazards that may not already be mapped. The information collected in the field view along with relevant data from planning documents related to trails and greenways will be added to the spatial database. Then the compiled data will be mapped in GIS according to the guidelines in section 2 of this RFP. Once the above information is mapped in GIS, we will export maps for graphic design in a mutually agreed on format. Following that, our team will design and lay out the text and map side of the water trail map/guide and assist the ORTC with the creation of a water trail logo. After the water trail map/guide is finalized, we will segment it into 8½"x11" Adobe PDF's for website publication and work with ORTC to ensure that the map/guide prints correctly. Optionally, ORTC may want the finalized water trail map and guide printed following the specifications listed in section 2.4 of this RFP.

We appreciate the forward thinking of the ORTC by requesting final deliverables in GIS format which will allow information to be updated over time. Whenever we do GIS projects, we are always thinking about how they will be managed and updated after project completion. Throughout the project, we will gladly share some of our ideas on how to sustain your GIS after this project is complete, even though it is not within the Scope of Work.

We look forward to providing the requested GIS and graphic services. Please call me if you have any questions or comments about our proposal.

Sincerely yours,

SKELLY and LOY, Inc.

Jarrett D. Handy
GIS Director

cc: Sara Moore, Moore Design Associates
Don Polly
Sandi Bell/Margy Coyne
Jacque Foster
R12-0493.P00
File: TROIA_JDH.docx

ESTIMATED COST SUMMARY

PROJECT COST SUMMARY

PROJECT TASKS	EMPLOYEE CLASSIFICATION AND HOURLY RATE					LABOR COSTS
	PROJECT MANAGER $100.00	GIS ANALYST $90.00	GRAPHIC DESIGNER $85.00	FIELD TECHNICIAN $80.00	VISUALIZATION TECHNICIAN $60.00	
2.1 Compile/Review Existing Information and Base Maps	4	10	4	24	0	$3,560.00
2.2 Prepare Base Maps for the Map/Guide	5.5	24	8	0	0	$3,390.00
2.3 Preparation of Water Trail Map and Guide	4	12	0	0	35	$3,580.00
Total Labor Hours and Costs	**13.5**	**46**	**12**	**24**	**35**	**$10,530.00**
Total Direct Expenses (River Float, Mileage, Meals, etc.)						$1,000.00
Total Labor and Direct Expenses (Without Map Production)						$11,530.00
2.4 Optional - Publication of Map/Guide						
Option 1 - 10,000 copies				Printing Cost		$2,070.00
				Option 1 Project Total Cost		$13,600.00
Option 2 - 20,000 copies				Printing Cost		$3,470.00
				Option 2 Project Total Cost		$15,000.00

SKELLY AND LOY, INC. QUALIFICATIONS

Corporate Capabilities Statement

Headquarters: 449 Eisenhower Boulevard, Suite 300, Harrisburg, PA 17111 • 800-892-6532 • Fax 717-232-1799

Established in 1969, Skelly and Loy is a privately owned, mid-sized corporation with 6 Mid-Atlantic offices. The firm provides a myriad of professional engineering and environmental services to various public and private sector clients throughout the United States and abroad. As trends change and markets emerge, Skelly and Loy continues to build on its strong foundation and enhances its offering of professional services of mining, civil, and environmental engineering; National Environmental Policy Act (NEPA) compliance studies (EISs, EAs, CEEs, etc.); natural resource management including wetlands, aquatic studies, and wildlife management; environmental, mining, and wastewater permitting; noise and air quality investigations; waste management investigations and remedial design; archaeological, cultural, and historical studies and documentation; digital information technology; and equipment sales, installation, operation, and maintenance of municipal, industrial, commercial, and private water, wastewater, and remediation treatment systems.

Experts with broadly based experience and sound technical skills work closely together to produce the superior work for which the firm is well known. Clients' requirements and desires are always kept foremost by working closely with them to develop the project. The cooperation between Skelly and Loy professionals and clients allows cross-pollination of ideas from many fields of expertise, as well as from the client's own particular insight and experience. In each task undertaken, project personnel are carefully chosen to encompass the full range of disciplines required to completely analyze a problem and provide the best practical solution.

At Skelly and Loy, you will find extraordinary people, and you can expect extraordinary results.

Our Services

Engineering

- **Mining Engineering**
  mineral processing, geology, mine development, feasibility evaluations
- **Civil Engineering**
  site development, construction stakeout, water management and treatment, permitting, and municipal services
- **Environmental Engineering**
  waste handling,wastewater engineering, water supply, watershed assessments, hydrology/hydraulics, and natural stream restoration

Geo-Environmental

- groundwater supply development and resource management
- hydrogeologic investigations
- site assessments
- industrial compliance issues
- underground storage tank management
- industrial hygiene studies
- remedial investigations
- feasibility studies
- remedial system design, installation, operation, and maintenance

Digital Technology

- CADD
- GIS
- software development
- Web site development/hosting
- surveying
- technical support
- graphics, word processing, and publishing

Environmental

- environmental planning, design, construction, and documentation
- noise and air quality
- wetlands, streams, and permitting
- threatened and endangered species
- Environmental Impact Assessments/NEPA
- environmental compliance monitoring
- planning
- field surveys
- technical writing
- interagency coordination
- public involvement

Cultural Resources

- geomorphological investigations
- archaeological survey, testing, and evaluation
- historic resource survey and Determination of Eligibility and Effects
- 4(f) evaluations
- HABS (Historic American Building Survey) and HAER (Historic American Engineering Record) Recordations

After Market Services

- equipment sales
- installation, operation, and maintenance of municipal, industrial, commercial, and private water, wastewater, and remediation treatment systems

PRINCIPALS

Sandra Loy Bell
Chief Executive Officer

Ms. Loy Bell is responsible for planning, directing, and supervising the activities of the firm on a daily basis. She is responsible for strategic planning as well as directing all business development programs. In this role, she provides directional guidance for the entire corporation. Ms. Loy Bell also oversees the Marketing Department, ensuring effective production of all firm materials.

John W. Gunnett, P.G.
President, Chief Operating Officer

Mr. Gunnett serves as Corporate Quality Manager and is ultimately responsible for quality management at Skelly and Loy. It is his responsibility to ensure that the Corporate Quality Management Program is successfully implemented and its goals achieved. His responsibilities include directing the development of project-specific QA/QC plans, establishing and monitoring performance indicators for technical reviews, overseeing the maintenance of a central record-keeping file of corporate QA/QC activities, and performing quality audits on selected projects. He is the authority for final resolution of all quality management activities.

Mark A. Williams
Executive Vice President
Engineering Services

Mr. Williams has been with Skelly and Loy since 1980. During this period, he has worked as a Senior Mining Specialist and Branch Office Manager. He has undertaken a variety of assignments in the coal, aggregate, and phosphate industries. Mr. Williams has worked in the capacity of Principal Investigator and Project Manager for various mine development projects, abandoned mine land reclamation projects, and reclamation planning for active operations. These projects have been performed throughout the United States and around the world. Mr. Williams has also worked for both electric utilities and mining companies in determining the financial impact of changing mining regulations to the respective industries.

Robert E. McClure
Executive Vice President
Environmental Services

Mr. McClure has more than 30 years of experience in managing environmental consulting investigations and compliance monitoring of water, wastes, and air. During this time, he has been involved in various aspects of environmental investigations including acting as Principal-In-Charge, Contract Manager, and Project Manager. He has served in this capacity for more than 200 transportation projects requiring environmental documentation.

Corporate Capabilities Statement

Our Management Team

Sandra K. Basehore
Vice President, Harrisburg Environmental

Ms. Basehore's 25-year career has concentrated on the assessment of environmental impacts and the development of cost-effective mitigation actions for all types of transportation projects ranging from simple bridge replacements and roadway widenings to new highways on new location. An experienced project manager, she has directed detailed natural, cultural, and socioeconomic studies in accordance with NEPA and applicable local, state, and federal regulations and requirements, resulting in the completion of all levels of environmental planning. Ms. Basehore is also skilled at coordinating large scale public involvement programs for transportation projects.

Mark B. Ioos, P.G.
Vice President, Geo-Environmental

With more than 18 years experience and a strong background in environmental compliance, Mr. Ioos has been primarily involved in multi-task projects involving geological studies and site characterization investigations for various industries and government. Projects have included performing RCRA and UST investigations; sampling soils, soil gases, surface water, and groundwater; installing monitoring wells; conducting aquifer tests and data analysis; and the design, installation, and operation of soil and groundwater remediation systems. His experience also includes conducting geotechnical investigations, fluorescent dye tracer tests, geochemical groundwater studies, and groundwater resource investigations for the development of public water supplies.

Gerald W. Longenecker, P.E.
Vice President, Environmental Engineering

Mr. Longenecker has 28 years experience with the regulatory approval process in the environmental consulting field. This experience has been gained through the management of a broad range of projects including stream restoration and relocation design; design of stormwater management runoff control facilities; design and remediation of sanitary wastewater systems; floodplain delineation projects involving both computerized flood elevation modeling and the mapping of alluvial soils; and the preparation of erosion and sedimentation control plans.

Donald W. Polly, E.I.T.
Vice President, Digital Technology

Mr. Polly has an impressive 42 years of civil and mining engineering project experience, including the design and preparation of construction and right-of-way plans for several interstate, state, and local highway projects. Mr. Polly's extensive mining and research project responsibilities include mine planning; preparation of reclamation plans; preparation of illustrative and technical mining manuals; coal property evaluations; assessment of geology and coal reserves quantity and quality; coal blending procedures; and preparation of mining and quarry permits.

Terry W. Schmidt, P.E.
Vice President, Engineering

With more than 24 years of diversified experience in engineering, Mr. Schmidt has served as Project Manager and Engineer-in-Charge of many complex projects. His fields of expertise include mining planning and analysis, mineral property reserve assessments, permit preparation, acid mine drainage evaluations and remediation, surface and groundwater hydrologic investigations and modeling, wastewater treatment systems evaluations, stormwater management, and NPDES permitting.

Our Projects

Investigations into Proposed Mining Operations, Reclamation Activities, Power Plant Waste Disposal Requirements, and Contract Negotiations
Public Service Company of New Mexico
Al Putzig, Director of Fuels (505) 855-6282

Wastewater Treatment
ORJMA Tammy Covert, Office Manager (814) 447-5414

Central Susquehanna Valley Transportation Project
Pennsylvania Department of Transportation, Engineering District 3-0
Eric High, Assistant District Executive, Design (717) 368-4372

Statewide Management Open-End Contract for Policy Development, Streamlining Initiatives, Cultural and Natural Resources Staffing Support, and Video Training Library Development
Pennsylvania Department of Transportation, Environmental Quality Assurance Division
Jack Rokavec, Division Chief (717) 787-1024

Embreeville Wetland Mitigation: Phase I Archaeological Survey
U.S. Department of Agriculture, Natural Resources Conservation Service
Bennett Horter, Cultural Resource Specialist/MidAtlantic IRT
(302) 678-4187

Statewide Web-Based Information Management System
Team Pennsylvania Foundation
Jim Neuschwander (717) 233-1375

Construction and Environmental Monitoring - Lang Superfund Site
Sevenson Environmental Services, Inc.
David Herwig, REM, CHMM Program Manager (856) 690-1758 ext 112

Repair and Maintenance of Electrical and Instrumentation at the Peach Bottom Atomic Power Station Wastewater Treatment Plant
Excelon Generation Company
James Gasper (717) 456-4396

Our Clients

Your advice and work product were just what we needed: they were expert, they were efficiently crafted, and they were delivered with a high degree of sensitivity to the needs (and whims) of your client. We are grateful for your help and look forward to working with you again. Thank you again for your efforts.
Mr. William D. Johnson, President and Chief Operating Officer, Progress Energy

What Skelly and Loy has developed with Team Pennsylvania Foundation puts the Commonwealth of Pennsylvania at the forefront of economic development. Now, when parties are interested in selecting a site where they can conduct business, with just the click of a mouse, the BRN provides them with invaluable statewide data. This significantly increases the likelihood that a Pennsylvania site will make their shortlist.
Mr. Rich Hudic, Executive Director of the Team Pennsylvania Foundation

I can always count on Skelly and Loy to provide suggestions, answers, and solutions to problems that arise. Working for the government, cost and budget control is a big issue. Skelly and Loy has done a great job in ensuring that jobs are done cost-effectively, within budget, and safely. These are just a few of the reasons that we go back to Skelly and Loy and recommend them to others.
Mr. Steve Gillespie, Sevenson Environmental Services

The Web-based uniform and equipment ordering system that Skelly and Loy designed for The City of Harrisburg Police Department is the best thing since sliced bread.
Officer R.B. Miller, Police Administrator, City of Harrisburg Police Department

It is a pleasure working with the Skelly and Loy team. They are conscientious, hard working, and excellent in all that they do. Creative, innovative, and fun! Thanks to one and all.
Mr. Kevin Cunningham, Delaware Department of Transportation

It has been a rare occasion in my working career when I have had the pleasure of working with such a fine, professional staff as employed by your firm. The efforts of your employees in the preparation of the Kentucky mining permit application were tremendous and the final work product was of the highest standards of technical excellence. Given that impending filing deadlines created extreme demands on everyone's time, I would like to personally thank all those involved for their dedication to the effort.
Mr. Russ Willard, Mining Engineer

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Geographic Information Systems

Skelly and Loy routinely assimilates many forms of spatial information including hard copy maps, existing graphics, and digitized data files. We are adept at manipulating spatial input and associated files to establish relationships among individual features and create new data sets for projects involving the following.

- Land Use Planning
- Infrastructure Management
- Probability Modeling
- Site Feasibility Evaluation
- Cost/Distance Assessment
- Natural Resources Management

Information Visualization

Integrating GIS with CADD and computer graphics, Skelly and Loy develops three-dimensional models to provide realistic visual representations. Applying today's advanced computer animation software, Skelly and Loy introduces motion and creates interactive visual screens - developing an easily understood display.

Software Integration

Skelly and Loy has expertise in ESRI's ARC GIS desktop, server, and moblie products as well as Bentley and AutoDesk Suite of CADD and Geospatial Technologies. Through routine integration and development of GIS communication tools and procedures, Skelly and Loy has formulated an objective integrated approach to GIS design consulting. By understanding the attributes of these systems, Skelly and Loy develops customized GIS applications that facilitate the seamless integration of the AutoDesk, Bentley, and ESRI products, allowing end users to efficiently use GIS in one system without loss of data integrity. We design such synergistic systems using the following programs and language scripts.

- Arc Macro Language (AML)
- Python
- Graphical User Interfaces (GUI)
- LISP Routines
- Visual BASIC Utilities

Web-Based Information Management

Skelly and Loy is working with the municipal sector to leverage the convenience and flexibility of the Internet to more effectively perform asset management, infrastructure planning, and economic development activities. Skelly and Loy leverages commercial and open source sever technologies to offer today's premier Web-based technology dedicated to improving the process of designing, building, and operating permanent assets.

- Buildings
- Roadways
- Manufacturing Facilities
- Utility Services
- Telecommunications Networks

For More Information Contact

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Cultural Resource Services

The Skelly and Loy team has significant experience in all aspects of Cultural Resource Management (CRM) from background research, sensitivity studies, and geomorphological investigations through mitigation of impacts to archaeological and historic structure resources and monitoring during project construction. Skelly and Loy is both sufficiently diversified to fulfill any required cultural resource investigation and specialized enough to concurrently address unique project-specific challenges using creative, pragmatic approaches. Skelly and Loy maintains its strong position as one of the leading cultural resource service providers to government agencies and private firms in the Mid-Atlantic region by providing cost-effective and timely cultural resources services through its highly qualified and experienced full-time staff.

The cultural resource services offered include both archaeological and historic structures studies, such as geomorphological investigations; GIS archaeological site predictive modeling; archaeological survey, testing, and data recovery; historic structures survey and determinations of eligibility and effect; Section 4(f) evaluations; HABS (Historic American Building Survey) and HAER (Historic American Engineering Record) recordations; Native American and public outreach and coordination; and cultural resource monitoring and report review. Skelly and Loy has taken the lead in the application of GIS to cultural resources studies during project planning and in innovative and effective public outreach during all phases of projects.

Representative Projects

Interstate 80 Bridge over the Susquehanna River, Phase I, II, & III Archaeology
Pennsylvania Department of Transportation

WV Route 2: Franklin to Woodlands Improvements, Phase III Data Recovery
West Virginia Department of Transportation, Division of Highways

U.S. 220 Corridor, Archaeological Predictive Model and Historic Structures Survey
West Virginia Division of Highways and Maryland State Highway Administration

Longvue Residential Housing Development Project Geomorphology Studies
One Hundred, Ltd.

Western Parkway Project Archaeological Predictive Model and Phase I and II Historic Structures Survey
Delaware Department of Transportation

N.Y. Route 17 Interchange Project, Historic Resource Survey and Determination of Eligibility
New York State Department of Transportation

Project Keystone: Stone Arch Bridge Management Plan and Maintenance Manual
Pennsylvania Department of Transportation

Pennsylvania Army National Guard Armories, Historic Structures Survey and Determination of Eligibility
Pennsylvania Department of Military and Veteran Affairs, Environmental Division

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Environmental Planning

With decades of experience, Skelly and Loy has developed a thorough understanding of the interrelationships among capital projects, land use, and environmental resources.

Environmental Documentation

Skelly and Loy has extensive experience authoring environmental documentation to achieve environmental clearance. With the increased focus on secondary and cumulative impacts, Skelly and Loy is adept at evaluating growth patterns, project needs, and environmental constraints on a regional level.

- NEPA Compliance
- NHPA - Section 106
- U.S. DOT - Section 4(f)
- Clean Water Act - Section 404
- Rare and Endangered Species Act

Innovative Mitigation Strategies

Skelly and Loy is a leader in developing and implementing innovative and cost-effective strategies for advancing capital projects in an environmentally responsible manner. We work closely with project engineers to facilitate context-sensitive designs.

- Perform Environmental Monitoring During Construction
- Develop Environmental Education Curriculum
- Apply Natural Stream Channel Design
- Create Cultural and Historical Artifacts Exhibits
- Design Wildlife Corridors and Crossings
- Establish Environmental Observation Facilities

Public And Agency Involvement

To facilitate communication and build consensus, Skelly and Loy's specially trained staff routinely plans and manages outreach activities.

- Webpage Development
- Meeting Facilitation
- GIS Computer Presentations
- Newsletter Production
- Three-Dimensional Renderings
- Conflict Resolution

In-House Technical Specialists

Skelly and Loy professionals are highly skilled in information collection, impact analysis, and data documentation for the wide range of cultural, natural, and community issues related to transportation projects.

- Wetlands Management
- Prehistoric and Historic Resources
- Farmland Issues
- Endangered Species
- Socioeconomic and Land Use Issues
- Noise and Air Quality Modeling

For More Information Contact

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Trail Planning

As recreation demands continue to grow, it is important to implement planning strategies in projects to conserve natural resources and expand access to recreational facilities to meet the needs of all recreational enthusiasts and local communities. Sometimes these projects entail issues that the sponsoring organizations are not able to address and complete in-house. Skelly and Loy can provide a full range of services for the planning and design of different types of recreational facilities. These services include environmental, engineering, and administrative support services that may be needed to successfully complete the desired project for the recreational facility.

Key Services

- Feasibility Studies
- Business Plan Development
- Public Involvement
- Trail Design
- Permit Preparation
- Construction Management

A sampling of the support services also available through Skelly and Loy that can contribute significantly to the success of a proposed recreational facility include the following.

- Master Planning of ATV/Multi-Use Facilities
- Wetland Identification, Delineation, and Functional Assessment
- Geographic Information Systems (GIS) Analyses
- Comprehensive Studies for Watersheds
- Threatened and Endangered Species Surveys
- Noise and Air Quality Analyses
- Global Positioning System (GPS) Data Collection
- Agency Coordination
- Cultural Resource Studies
- Hazardous Waste Assessments
- Abandoned Mine Drainage Studies and Remediation
- Design for Greenways/Bikeways Projects
- Evaluation, Permitting, Mitigation and Restoration
- Stream Restoration

Environmental Recreational Assessments

The environmental resources present on a site offer both opportunities and limitations for recreational facility development. Our staff's experience and depth of expertise enables us to effectively identify and evaluate a site's environmental characteristics, often resulting in the development of alternative recreational facility scenarios. Our environmental staff can play a key role in the entire process, from site selection to evaluation, design, permitting, and construction management. Once a scenario is selected, environmental documentation and/or permit applications are typically required when potential significant impact to environmental resources may occur or when state or federal funding is involved. Skelly and Loy has extensive experience preparing environmental clearance documentation and permit applications for a wide variety of agencies who have jurisdiction over the resources impacted by proposed recreational facilities.

For More Information Contact

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With branch offices in the following locations: Pittsburgh, PA • Port Matilda, PA • Hagerstown, MD • Morgantown, WV • Wise, VA
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JARRETT D. HANDY, GIS Director

EDUCATION:
A.S., Architecture, 1995, Stevens State College

Continuing Computer Science Degree

YEARS OF EXPERIENCE:
17 Years

Mr. Handy has more than 17 years of GIS experience implementing geographic information systems (GIS) within the fields of municipal government, infrastructure management, environmental management, transportation, mining, geo-environmental, and planning. He has played a key role in numerous projects involving GIS consulting, database design, data conversion, needs assessment, database administration, cartography, analysis, web application design, quality assurance, and GIS server development. Mr. Handy has extensive experience using the ESRI suite of GIS products, Bentley and Autodesk's CAD engineering products, and various web development tools.

In addition to his technical skills, Mr. Handy has successfully managed complex GIS implementation and migration projects and has supervised project teams. He currently serves as Skelly and Loy's GIS Director and oversees all GIS projects.

PROJECT EXPERIENCE

MD 5 Roadway Improvements, St. Mary's County, Maryland - Mr. Handy provides CADD and GIS services for the studies and documentation required for NEPA and related environmental statues and regulations. He also validated existing data to ensure that data were spatially consistent and valid. He developed a GIS model to perform the necessary spatial analysis to determine the relationships of the features within the study area.

Intercounty Connector Contract C (West of US 29 to East of I-95), Montgomery and Prince George's Counties, Maryland - The Intercounty Connector (ICC) is a new multi-model east–west highway that will link existing and planned development between the I-270 and the I-95/US1 corridors in Maryland, a distance of approximately 19 miles. Skelly and Loy is serving as the Environmental Compliance manager for the ICC Constructors A Joint Venture. In this capacity, we are responsible for the development and implementation of the Contract C Environmental Compliance Plan (ECP) that has been implemented under the direction of Skelly and Loy's Environmental Manager (EM) and supported by the Environmental Compliance Team (ECT). It is our responsibility to direct coordination/consultation with the ICC Team's Environmental Management Team (ICC-EMT) throughout the duration of the project. Mr. Handy is responsible for collecting, organizing, and appraising various data sets to perform analysis. He then uses these clean data to analyze the project during design and construction to explore additional avoidance and minimization measures.

Digital Infrastructure Management Security System (DIMSS), Pennsylvania - Mr. Handy's role in this project was to design and develop a software tool to help five pilot communities improve their ability to manage and protect their infrastructure. This application provides a comprehensive means for collecting data by incorporating GPS technology and tablet PC.

U.S. 322, Section 100 Needs Analysis, Environmental Studies and CMS Analysis, Delaware County (Philadelphia Metropolitan Area), Pennsylvania - Mr. Handy performed GIS impact analysis of environmental and cultural constraints for the U.S. 322 study area. U.S. 322 in this area serves as part of the regional network and as a local thoroughfare. Regionally, it connects I-95 to U.S. 1. Locally, it traverses three townships and serves multiple developed sites. It is an uncontrolled-access roadway that includes a variety of intersection controls (stop signs, signals, no direct access) and numerous driveways.

Central Susquehanna Valley Transportation Improvement Project Environmental Impact Statement, Snyder, Union, and Northumberland Counties, Pennsylvania - Mr. Handy performed GIS impact analysis of environmental and cultural constraints and information management services. Engineering and environmental studies for the Central Susquehanna Valley Transportation Improvement Project are being undertaken to evaluate options to improve safety and capacity on U.S. Routes 11/15, U.S. Route 11, and PA Route 147. The project tasks are related to the incorporation of modern technologies into the public and agency involvement programs such as project videos, interactive CD-ROM production, cable television broadcasts, and the establishment of a project homepage on the Internet.

Selinsgrove Center Site Natural Resources Mitigation Area, Snyder County, Pennsylvania - The work on this project included oversight on the development and design of a comprehensive mitigation site, the Selinsgrove Center site. The site included a total ecosystem approach to natural resource mitigation by incorporating elements of wetland replacement, reconstruction/restoration of streams, and terrestrial and wildlife habitat enhancement in a single multi-acre facility. Mr. Handy's role was to provide GIS and CADD services on this project.

City of Harrisburg, Asset Management Information Technology Services, Pennsylvania - Upon Skelly and Loy's initial startup of this project for the City of Harrisburg, Mr. Handy maintained the GeoMedia GIS that the City had in place. He then worked to update, manipulate, and migrate the extensive data to create the GIS that is currently used by the City of Harrisburg. Mr. Handy's responsibilities included the design, maintenance, enhancement, and support of the City's Asset Management Information Technology system. This system includes the inventory control for streetlights, street cuts, parcels, sewer, water, and signs. The system also incorporates the management of streetlight and street cut maintenance through the use of online permitting and Work Orders.

Mr. Handy's first task was to study municipal government policies and familiarize himself with each of the City staff responsibilities and needs. Based on that information, Mr. Handy designed a system that provides staff with a way to update and maintain GIS data. Mr. Handy used server and client-based technologies to make this user-friendly system easily accessible to all City personnel. This required importing and exporting of information among Oracle, Microsoft Access, and the IBM mainframe as well as GeoMedia, GeoGraphics, Intergraph MGE, and ArcInfo. Currently, Mr. Handy's management responsibilities include technical project coordination with City staff as well as training and managing City staff and interns in data collection, organization, and migration.

PennDOT Statewide Open End Contract for Management of Preliminary and Final Design Activities, Throughout Pennsylvania - The work and services provided under this 5-year, $3 million Statewide Open End Contract for the Management of Design Activities encompass a wide range of environmental and engineering studies on several different types of projects with concurrent schedules. Services provided to date include project scoping, document reviews, data collection and management, technical analysis activities and assistance in writing policy and procedural memo's/handbooks.

JARRETT D. HANDY, GIS Director

DENNIS W. LEWIS, GIS Analyst

EDUCATION:
A.A., Imagery Interpretation, and Intelligence Analysis, Community College of the Air Force, 1986

YEARS OF EXPERIENCE:
25 Years

Having retired from the U.S. Air Force, Mr. Lewis brings over 25 years of GIS experience with a unique safety/military perspective to the hazard mitigation planning process. He is experienced in capturing and analyzing geospatial data using GIS and applying proven analytical models to geographic data in order to provide project managers with clear assessments so that they in turn can develop strategies and solutions for project stakeholders. He is proficient with many ESRI GIS products and is Skelly and Loy's lead GIS analyst.

PROFESSIONAL EXPERIENCE

Bridge Replacement, S.R. 0035 over the Juniata River, Juniata County, Pennsylvania - Mr. Lewis was involved in the environmental and cultural mapping of this study area and the potential alternative impact analysis within the Mifflin and Mifflintown Boroughs of Juniata County, Pennsylvania.

MD 5 Roadway Improvements, St. Mary's County, Maryland - Mr. Lewis provided impact analysis within this project area which contained wetlands of "special state concern" and habitats of "state listed rare plant species."

Orbisonia-Rock Hill Joint Municipal Authority, Huntingdon County, Pennsylvania - Mr. Lewis is involved in the development of a potable water and a wastewater GIS database to provide these boroughs in Huntingdon County, Pennsylvania, with updated systems mapping and a system maintenance/incident reporting tool.

PA Route 23 Needs Analysis, Lancaster County, Pennsylvania - Mr. Lewis performed GIS impact analysis on environmental and cultural constraints for the PA Route 23 study area. Route 23 serves as an important east-west artery that passes through Lancaster County's agricultural and cultural heartland.

Corridor O, S.R. 322, Section B02, Centre and Clearfield Counties, Pennsylvania - Mr. Lewis conducted environmental and cultural mapping along with alternative construction impact analysis throughout this project area. U.S. 322 in this area provides an important link in the transportation network of Centre and Clearfield Counties.

Low-Level Radioactive Waste Storage Facility, Pennsylvania - Mr. Lewis led a wide ranging effort in environmental resource mapping of 25 separate categories in order to meet federal and state legislative guidelines to site a low-level radioactive waste storage facility within Pennsylvania.

RELEVANT TRAINING

"ARC/INFO" University of Georgia CRS
"Migrating from Arc View 3.2 to Arc GIS 8.1" ESRI
"Customizing ARC/INFO with AML" ESRI
"Advanced Image Processing" ERDAS

DENNIS W. LEWIS, GIS Analyst

DANIEL J. JOHNSTON, Senior CAD Designer

EDUCATION:
Continuing Graphic Design Degree

YEARS OF EXPERIENCE:
19 Years

Mr. Johnston has worked for Skelly and Loy for 19 years as a CAD Designer. His exceptional computer aptitude allows Skelly and Loy to diversify his knowledge among all types of computer applications. He is experienced in all CADD platforms as well as in most graphic software applications. He is proficient with Civil 3D, Carlson Civil and Mining, InRoad Design, AutoCAD, and MicroStation. Mr. Johnston is accustomed to applying his knowledge to overcome challenges presented by client demands. He is experienced in compiling and updating Planimetric and Topographic databases from orthophotography, and LIDAR. In addition to his CAD technical skills, Mr. Johnston is extremely knowledgeable in many of the ESRI GIS products.

PROFESSIONAL EXPERIENCE

Viewshed Analysis and Computer Rendering - Mr. Johnston is responsible for collecting and organizing project data and building the computer model for viewshed analysis for major infrastructure and development projects. He uses the latest software and technology in the industry.

- **Photographic Computer Renderings -** Project photographs of very important viewsheds can be modified to incorporate the proposed design. These illustrations are valuable for communicating the true impact of a proposed design to a viewshed. Mr. Johnston can also develop illustrations that require complete background reconstruction of the viewshed, which usually requires several photographs from different angle and positions. The photographs are then pulled apart and repositioned to proper angle and perspective for the final illustrations.

- **3D Computer Model Renderings -** For some projects a 3D computer model is required for the viewshed analysis. This type of model allows a complete 360° view of the project area plus the proposed project design. Mr. Johnston incorporates the CAD data from the design team and supplements the surrounding areas by incorporating GIS data (including DEM data). Once the model is built still images can be generated for any view for paper production and a computer animation file can be generated for replay on computer, web, or DVD. The animation may be a flyover of the site or follow a certain corridor path like a road, transmission line, or trail.

Project Mapping Coordinator - Mr. Johnston is responsible for organizing and cataloging various layers of project information. His coordination of projects allows seamless development of work between GIS Specialists and CADD Operators. This ensures quality control of data that is being developed in an organized and speedy process.

- **Central Susquehanna Valley Transportation Project - PennDOT -** The proposed highway was developed to cross Snyder, Union and Northumberland Counties. Mr. Johnston was in charge of all CADD file development and GIS integration. The project required development of approximately 60 different environmental constraint features, which were incorporated into GIS layers for impact analysis. Due to the large size of the study area, there were several different base mapping structures developed to present information at public events and in the project NEPA documents as clearly and accurately as possible.

- **Mining Permits - Mining Client in Central United States -** The client has several mining operations which require permitting for either new development or expansion of current operations. Mr. Johnston was directed to acquire, develop, and organize mapping from various available public or private sources. He uses the raw information and develops a uniform

mapping appearance that met governmental permit requirements.

- **Complete Design Packages - Various Clients -** Mr. Johnston's experience with CADD and various engineering software allows Skelly and Loy to develop complete sets of engineering packages, ranging from 15 to 60 different plan sheets per package.

Data Analyst - Mr. Johnston is a key person in developing different methods of data analysis for our engineering and environmental staff. His ability to integrate multiple computer applications allows him to develop new methods for old problems.

- **Valley Subsidence - Mining Client in Virginia -** Our client requested that we prepare subsidence mapping for an old gypsum mine. This mine consisted of 14 main levels with several offshoot sub-levels. Mr. Johnston, in coordination with other in-house GIS specialists, developed a model that accounts for existing terrain, sloping angle of existing subsidence, and elevations of individual levels. This model is capable of predicting future subsidence with a reasonably accurate location. Our GIS model was used to calculate and catalog all the affected items in the study area, which allowed our engineers to determine a cost of potential liability for our clients.

- **Coal Refuse Analyst - Coal Processor in Australia -** Our client requested Skelly and Loy to evaluate and determine if a coal refuse pile was suitable for power generation. Mr. Johnston was responsible for collating drill holes and surface sampling information. The uniqueness of the problem was that the hole depths varied depending on the locations of the hole on the pile. He developed a 3D model that illustrated the location of quality coal deposits and was able to generate volumes of these deposits.

- **Corridor O Project Potential Subsidence - PennDOT -** The proposed highway would connect State College to Interstate 80. Our engineering staff collected large amounts of mining data from various sources. Mr. Johnston, along with our GIS Specialist, and our engineering staff developed a method that accounted for all of the information collected. Mr. Johnston's role in the process was to develop a methodology to identify potential subsidence zones that were acceptable to our engineers and GIS Specialist.

- **Volumetric Analyst - Various Clients -** Mr. Johnston is capable of calculating volumes of materials of all types. His ability to apply software applications beyond their original designated use allows Skelly and Loy to determine numerous types of material volumes.

Graphics Coordinator - Mr. Johnston is responsible for coordinating all graphics for agency and public involvement activities. Graphics range from designing meeting displays to managing a dual-screen computer projection for meeting presentations.

- **Central Susquehanna Valley Transportation Project - PennDOT -** Mr. Johnston was responsible for developing a digital version of both the draft and final Environmental Impact Statements. The digital version was constructed using a web-based format that allowed distribution of the document on a compact diskette. This version also enabled the Environmental Impact Statements to function as searchable documents. As part of the project, Mr. Johnston also developed a 3D Animation of a proposed bridge overpass near a group of concerned citizens, and developed several before and after photographs of impacted view sheds in the study area.

- **Long Term AMD Treatment - Mining Client in Tennessee -** Mr. Johnston developed a valley dam to hold water for a low maintenance AMD treatment system. As part of the design process, earthwork volumes and incremental water volumes were calculated at different elevations. The client then directed us to produce a five-minute 3D animation showing what the potential lake would look like after completion. This animation was used to explain the idea to the client and other environmental state and federal agencies for approval.

- **Mining Permit - Mining Client in Central United States -** As part of the permit process, our client was required to have a public meeting. Mr. Johnston developed a 3D rendering of the proposed reclamation for this site. This rendering demonstrated alternative use of the property after the mining operation was completed.

- **Interstate 81, PA Exit 17 - PennDOT -** This proposed exit reconfiguration required impacting several historic farms in the area. Skelly and Loy was directed to develop a public display illustrating the history of farming in the area as mitigation for the impacted farms. Mr. Johnston created and produced the display, which incorporated historic maps, photos and text. The board is on display at the welcome center along Interstate 81 near Chambersburg.

DANIEL J. JOHNSTON, Senior CAD Designer

CHRISTOPHER M. IRELAND, Environmental Specialist

EDUCATION:
B.A., Environmental Geosciences, 2002, Slippery Rock University
Minor, Geographic Information Technology, 2002, Slippery Rock University

PROFESSIONAL REGISTRATIONS AND CERTIFICATIONS:
U.S. EPA Certified Asbestos Inspector, PA

U.S. EPA Certified Asbestos Supervisor, PA

OSHA HAZWOPER/40HR/8HR Refresher

American Red Cross CPR First Aid Training

YEARS OF EXPERIENCE:
8 Years

Mr. Ireland is a member of the Geo-Environmental Services group of Skelly and Loy. His responsibilities are focused on environmental site assessments (ESAs), site remediation, storage tank removal, asbestos inspections, lead based paint inspections, waste characterizations, and permitting.

PROFESSIONAL EXPERIENCE

Environmental Site Assessments - Mr. Ireland has been involved with many Phase I ESAs for public transportation projects as well as private clients. Some of these projects include the S.R. 2040 Curry Hollow Road Bridge Replacement Project and the S.R. 0051 West Carson Street Viaduct Replacement project.

Asbestos Inspections - Mr. Ireland is certified in Pennsylvania for asbestos inspections and supervisor oversight during abatement efforts. He has performed several asbestos inspections for public sector and private clients in the Pittsburgh area. Mr. Ireland has performed asbestos inspections for the Mon/Fayette, Uniontown to Brownsville, Transportation Project; the U.S. Army Reserves at Army Reserve Centers throughout western Pennsylvania; and at properties scattered throughout the City of Pittsburgh for the Urban Redevelopment Authority of Pittsburgh.

Mold/Mildew Investigations - Mr. Ireland has been involved with mold/mildew investigations of several highrises throughout the Pittsburgh area for the Pittsburgh Housing Authority.

Geoprobe Investigations - Mr. Ireland has been involved with several geoprobe subsurface investigations, such as the Mon/Fayette, PA Route 51 to I-376, Transportation Project, and the S.R.0286 East Clarksburg Bridge Replacement Project.

Permitting - Mr. Ireland has been involved with various permitting projects for the Pennsylvania Turnpike Commission. One such example was for Recycled Asphalt Pavement (RAP) permitting, which involved several counties in Pennsylvania, where the RAP material would be stored for upcoming road improvements and repairs.

RELEVANT TRAINING

American Red Cross CPR/First Aid
Fork Lift Operator
American Power Squadron – Safe Boating Course

SUBCONTRACTOR (MOORE DESIGN ASSOCIATES) QUALIFICATIONS

MOORE DESIGN associates

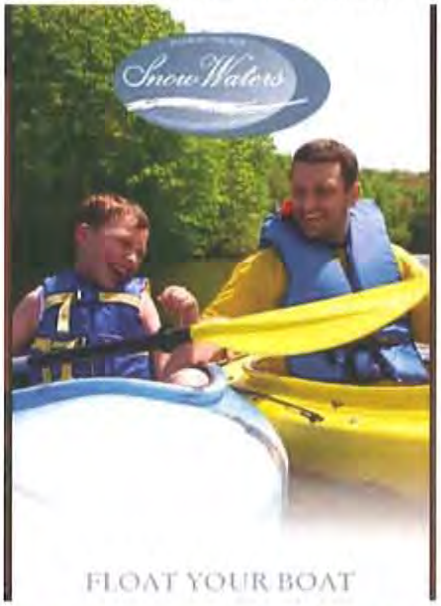
Landscape Architecture
Planning
Sustainable Design

Moore Design Associates (MDA) is a certified DBE-WBE, specializing in landscape architecture, planning and sustainable design. MDA leads and challenges clients with visioning exercises using a variety of traditional and digital media. Utilizing a "hands on" approach with client and stakeholder groups, MDA offers optimal efficiency and superior value in the delivery of design services to the client. MDA is committed to "connecting people, through nature." A simple yet frequently overlooked concept in today's technologically driven world.

MDA has over 25 years of planning and design with large and small-scaled projects with public and private clients both in the US and internationally. MDA's client-centric approach is focused to create human scaled, sustainable exterior environments accommodating a variety of uses and intensities with careful consideration given the existing landscape fabric and community context.

- Landscape architecture
- Educational outdoor environments
- Master Planning
- Parks, greenways and trails
- Strategic market positioning
- Branding
- Place making
- Urban parks and streetscapes
- Site feasibility and density studies
- Sustainable site design
- High performance site planning
- Permitting and entitlements
- Rooftop garden
- Green infrastructure
- Water feature design
- High efficiency site lighting design
- Construction administration and inspection
- Community outreach & facilitation
- Waterfront design
- Landscape planting and irrigation design
- Restorative landscape planning & design
- International perspective

Moore Design Associates, connecting people, through nature
Landscape architecture, planning and sustainable design



Snow Waters

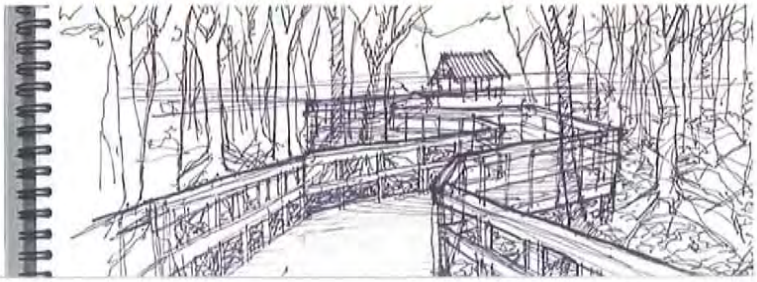
Color *Palette*

Pantone 471 C

Pantone 5415 C

Pantone 5757 C

PRODUCT DEFINITION
BRAND IDENTITY
EXHIBIT DESIGN
MERCHANDISING
MARKETING COLLATERAL
SIGNAGE
WEBSITE DESIGN
ADVERTISING CAMPAIGN
IDENTITY PACKAGE
PRODUCT LAUNCH



Jebel Ali Village Branding, Dubai UAE

2007 – Visioning, logo and brand development

Branding and logo development included product definition, brand identity, marketing collateral, wayfinding and signage, advertising campaign, identity package and product launch for Nakheel's Jebel Ali Village. The Jebel Ali Village logo connects the brand to the existing park and regal Royal Poinciana Tree and was chosen from ten concepts. The Royal Poinciana creates dappled shade, brilliant orange blossoms and animates the park as it sways in the wind. The branding vision is based on creating a sense of place and a sense of home. The Jebel Ali Village Brand represents: symbolic history, neighborhood connectivity, the central park, the family, heritage and longevity, growth, renewal and spirit of place. Work done while a Director with Burt Hill.

Jebel Ali Village Park Master Plan & Implementation, Dubai UAE

2007-2008 – 287 acre master plan, brand development, park and trail design, infrastructure construction documentation.

The master plan included a community development with over 20,000 residents; a central park, networked trails, pocket parks, schools, retail, office, mosque and multi-nodal transportation hub. The master plan of the village was designed with a discernible center, a 30 acre park. The Jebel Ali Park, a community green is interwoven with trails connecting the village to outdoor recreational enjoyment. Branded throughout, Jebel Ali Park offers active recreation along with passive interpretive trails with historic and cultural features integrated into the school system. Work done while a Director with Burt Hill.

Snow Waters Master Plan & Brand Development, Conneaut Lake, PA

2007 - Master planning and brand development. The vision plan of Snow Waters was to establish an all season's luxury resort community where one can live, play, explore and unwind. Water amenities included Conneaut Lake access for paddle sports, fishing, swimmers and anglers. A marina with full service slip was provided for sailors and motor boaters.

The design work included branding and logo development included logo design, product definition, brand identity, marketing collateral, wayfinding and signage, advertising campaign, identity package and product launch. Work done while a Director with Burt Hill.

Noisette Community Master Plan & Riverfront Park, Charleston, SC

2004-1005 - The Noisette master plan, encompasses 3,000 acres and is based on fundamental environmental principles for ecological restoration, conservation, native landscapes and management. Integral to the plan is the inventory and restoration of natural systems linking individuals, neighborhoods and community as stewards of the natural environment. Central to the implementation was the creation walking paths, water trails, greenways and an educational center for the City and greater region. The riverfront park now is home to various summer concerts under the new amphitheater and nestled along the river's edge. Work done while a Director with Burt Hill.

ASLA Award of Excellence – Analysis and Planning Category

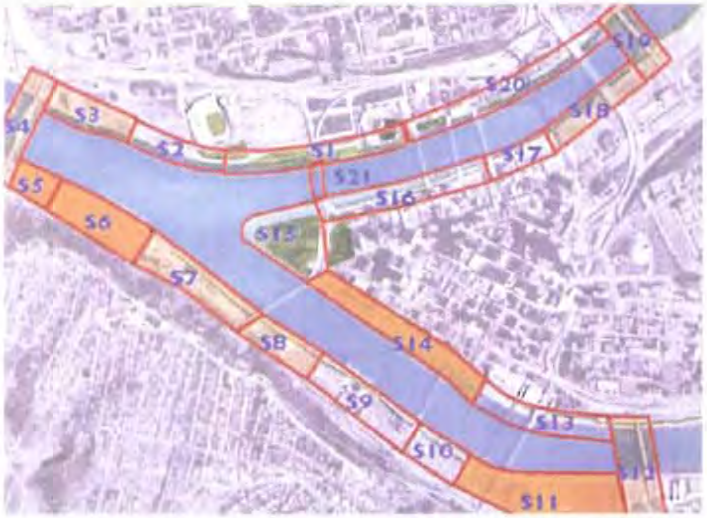
EXISTING TIDAL MARSH

WOODLANDS ALONG EDGE OF MARSH, WEST OF SOUTH RHETT AVENUE

THIS ABANDONED RAILLINE ALONG SPRUILL AVENUE COULD BECOME A RECREATIONAL TRAIL

Riverlife Task Force Master Plan, Pittsburgh, PA

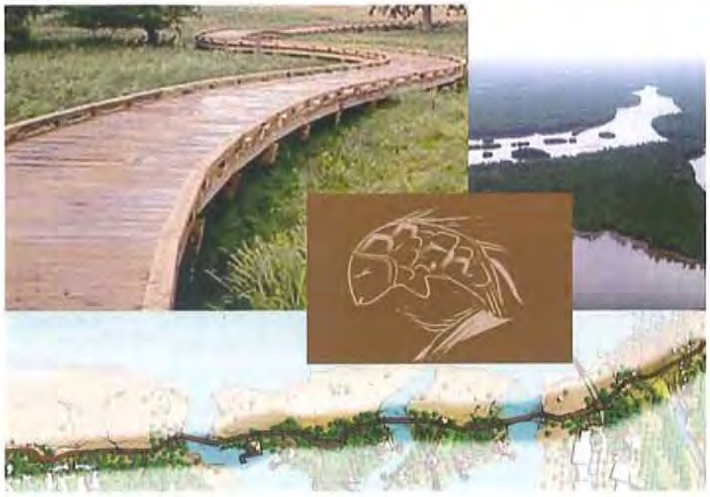
2004-2005 - Master Plan and Trail Mapping. In partnership with the Riverlife Task Force the concept of "connecting the loop" was developed as a long-range implementation strategy for the Three Rivers Trail System. The plan called for a transformation of the brownfield areas from a working river edge of the Allegheny, Monongahela and Ohio Rivers to a riverfront park connecting the people and visitors of Pittsburgh to enjoy the three rivers. The project included strategy, layout, cost modeling and implementation for the trail network. Work done while a Director with Burt Hill.



Shinas Resort & Reserve, Shinas, Oman

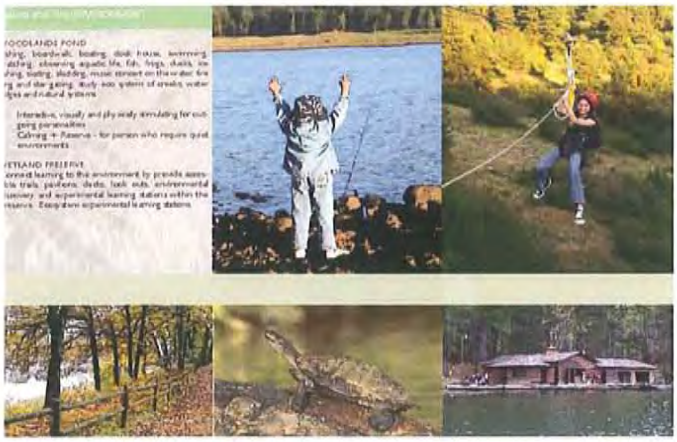
2007 – 1128 acre community and recreational master plan, logo and brand development, natural systems preservation.

Located on the Indian Ocean with plentiful Mangroves, Shina's resort and reserve is a planned as resort to preserve the natural systems and create recreational water trails, elevated walking paths, educational platforms, and seaside activities. The master plan and brand takes direct clues from the natural environment, a place of play and respite. Careful consideration and environmental field study helped to location the trail to protect the mangrove while creating an outdoor learning venue. Work done while a Director with Burt Hill.



Woodland's Foundation Master Plan & Brand Reinforcement, Pittsburgh, PA

2012 – 56 acre master plan, brand reinforcement, natural systems preservation. The primary goal of the master plan was to provide meaningful, joyful and rich experiences in a barrier-free environment. Two Indian trails, educational woodland walking trails, a restored pond and the Harmony Short Line are historic and cultural resources and features of the plan. The interpretive trails incorporate educational signing to demonstrate the importance of the wetland & natural system.



MOORE DESIGN associates

Sara Moore, RLA, ASLA, LEED AP

Landscape Architect & Master Planner

Sara Moore is the founder of Moore Design Associates, a certified DBE/WBE. Ms. Moore employs her contagious energy as an integral leader of vision and planning teams. With over 25 years of landscape architecture, planning and sustainable design experience, both domestically and internationally, Ms. Moore connects people, through nature with her work. Ms. Moore works easily with a broad range of clients to push the project possibilities and then brings the ideas to life through a variety of illustrative mediums.

Combining client direction and desires with historical and cultural context, Ms. Moore assists clients in imagining and defining highly marketable and unique end products. Ms. Moore works with the client and the architectural design team to create human-scaled, sustainable exterior environments. Ms. Moore's work includes interactive site assessment, due diligence, insightful planning, creative visioning and conceptual designs that responds to the Client's ad Communities specific needs and desires. Ms. Moore's designs accommodate a variety of uses and varied intensities with careful consideration to existing landscape fabric & community context. Some of the following projects represent work done while a director with Burt Hill.

EDUCATION

B.S. Landscape Architecture, The Pennsylvania State University, 1988

Harvard Graduate School of Design, Real Estate Analysis, 2003

REGISTRATIONS

Registered Landscape Architect in Pennsylvania, Ohio, West Virginia, Florida, Virginia

Leadership in Energy and Environmental Design, US Green Building Council, LEED AP

MEMBERSHIPS

American Society of Landscape Architects

PROJECT EXPERIENCE

Bayfront Highway Bike and Walking Trail – Design and implementation of the Erie Bayfront Highway Bike and Walking Trail, Erie, PA

BNY Mellon Green – Park design and streetscape, two city blocks in central business district. Park is designed and constructed over the subway and connected to retail, office and the parking garage, Pittsburgh, PA

City of Weston Master Plan & Community Recreation System - 9600 acres master plan and implementation, Storm water recreational ponds, interconnected to service the overall community, experience by paddlesports enthusiasts. Weston, FL

Cooper Valley Retreat Master Plan & Branding – 295 acre master plan and implementation strategy for naturalized reforestation, trail system, rain gardens, Millerstown, PA

Grant Street Streetscape Design – Recognized by American Planning Associates as one of America's 10 Great Streets in 2012, Pittsburgh, PA

LaClede Groves Environmental Trails & Campus Design - Community master plan, Stream restoration, Walking trails and bridge, naturalized planting strategy, St. Louis, MO

Jebel Ali Village Park Master Planning & Branding – Logo, brand development, master plan and implementation for Jebel Ali Village, Dubai, UAE

Noisette Sustainable Master Plan & Riverfront Park - 3,000 acres master plan based on fundamental environmental principles for ecological restoration, conservation, native landscapes and management Charleston, SC

Riverlife Task Force – Master trail plan connecting the loop of the Allegheny, Monongahela and Ohio Rivers, Pittsburgh, PA

Snow Waters Master Planning & Branding – Logo, brand development, master plan for Snow Waters, all season resort community, Conneaut, PA

The Woodlands Master Plan – Master vision plan for The Woodlands Foundation included fully accessible greenway and rail trail plan, Pittsburgh, PA

Shinas Resort & Reserve Master Plan & Branding - 858 acre master plan and resort community in a wetland and mangrove setting. Greenways, paddle trails and elevated walks along the Indian Ocean seaside, Shinas, Oman

Triology Environmental Center Plan, Wetland mitigation, infiltration basins, xeriscape plantings, greenway and trail system, Miramar, FL