

James J. Morris

Civil Engineer

Mr. Morris serves as a Civil Engineer and has experience with many aspects of stream and wetland restoration, construction management, mitigation plans, restoration project monitoring and adaptive management, and hydrodynamic modeling. He performs watershed assessments and fluvial geomorphology assessments of stream reaches utilizing EPA WARSSS methodology, computes engineering calculations and prepares plans, specifications, and cost estimates for a variety of civil and environmental engineering projects. Mr. Morris has prepared section 404 Joint Permit Applications, U.S. Army Corps of Engineers Nationwide 27 permits, erosion and sediment control permits, and various other permits, authorizations and waivers.

Professional Experience

Stream, Floodplain, and Wetland Restoration—

Design/build experience in stream restoration and assessment utilizing the Rosgen classification system and Watershed Assessment of River Stability and Sediment Supply methodology. Experience in analysis and assessment of watersheds, impaired reach prioritization, and environmentally sensitive design principles relating to preserving existing vegetation and enhancing habitat in severely impaired reaches. Has prepared mitigation plans in accordance with the 12 elements of the 2008 Final Mitigation Rule. Has designed and implemented multiple successful restoration and habitat enhancement projects using Rosgen and other methodologies of form, function and process, including in-field design change orders and adjustments due to severe flow events during construction. Restoration design experience includes concept to final design development; erosion and sediment control; grading plans; engineer's cost estimates; bid document preparation; sequences of construction suited specifically to constructability and cost effectiveness as well as environmental sensitivity and environmental site design; and details specific to stream restoration procedures, riparian buffer, and biological stabilization design techniques. Produced permitting and supporting documentation for Maryland and Pennsylvania Joint Programmatic 404 permits, as well as general permits for road crossings, bank stabilization, and fish habitat enhancement projects. Extensive experience with grant writing for funding agencies and regulators for project scope, design, and success. Has developed, conducted, and implemented restoration monitoring plans and adaptive management plans for compliance and evaluation of restoration design effectiveness in U.S. Environmental Protection Agency-targeted 303(d) listed watersheds and the meeting of total maximum daily load targets.

Construction Management and Inspection—Extensive experience in hands-on implementation and management of stream and floodplain restoration projects including implementation of log, sod, and rock grade control and habitat structures, erosion and sediment control devices, equipment suitability, facet feature creation, and in-field adjustments.

Coastal Protection and Modeling—Sized riprap armor on various coastal projects. Marina layout and design. Performed modeling analysis for currents, sedimentation, salinity, and water quality in RMA and Delft 3D modeling techniques.

Qualifications

Education

B.S.; Johns Hopkins University; Civil Engineering; 2003

Specialized Training

Fluvial Geomorphology for Engineers, (Rosgen Level I)

River Morphology and Application (Rosgen Level II)

River Assessment and Monitoring, (Rosgen Level III)

River Restoration and Natural Channel Design, (Rosgen Level IV)

Stream Restoration Construction Techniques, Elk River Construction

Delft 3D Hydrodynamic Modeling Short Course, University of Delft, Netherlands

Managing Utility Rights-of-Way for Wildlife Habitat, USFWS

Engineer-in-Training (EIT), Maryland, 2009

Maryland Erosion and Sediment Control Green Card Certification

EA Project Manager Training

Professional Affiliations/Appointments

Chesapeake Watershed Network, Member

Codorus Creek Watershed Association, Member

European Centre for River Restoration, Member

Keystone Stream Team, Member

Society for Ecological Restoration, Member

The Xerces Society for Invertebrate Conservation, Member

Eco-restoration Monitoring and Management—Monitoring of geomorphic properties and vegetation of completed eco-restoration projects and development of adaptive management plans for restoration projects, in accordance with the 2008 Final Mitigation Rule.

Erosion and Sedimentation Control—Provided design calculations and computer-aided design and drafting drawings for erosion and sedimentation control plans. Wrote successful erosion and sedimentation plans for restoration projects in Pennsylvania. Worked with clients and regulators to deliver practical and cost-effective erosion and sedimentation designs. Familiar with Maryland and Pennsylvania Erosion and Sediment Pollution Control Program Manuals. Used Best Management Practices to minimize erosion and to control sediment.

Stormwater Management—Designed and permitted farm ponds for utilization of stormwater for storage, stock, and irrigation purposes. Delineated stormwater drainage areas based on existing topography. Sized various outfall structures for stormwater systems. Design of Regenerative Stormwater / Step Pool Stormwater Conveyance systems, retrofit of existing stormwater systems utilizing environmental site design principles.

Cost Estimating—Utilized sources such as R.S. Means, MCACES, and vendor and supplier quotes to assemble construction cost estimates from design drawings and specifications. Performed quantity take-offs from drawings and electronically using AutoCAD to perform calculations. Provided estimates for projects including: port improvements, stream restoration, wetland restorations, floodplain restorations, coastal protection, stormwater management controls, and riparian buffer creation.

Bidding Services—Provided support for bidding construction projects, including interpreting the scope of work, performing quantity take-offs, identifying and contacting suppliers and subcontractors, and evaluating services and prices of suppliers and subcontractors. Provided bidding services for construction projects including: stream and floodplain restorations, wetlands restoration, stream relocation, stormwater retrofit and repair projects, riparian buffer, and Conservation Reserve Enhancement Program reforestation projects.

Computer-Aided Design and Drafting—Utilizes AutoCAD for civil schematic drawings on projects including erosion and sedimentation control plans, stormwater management plans, stream restorations, wetland restorations, floodplain restorations, and miscellaneous site development plans. Utilizes AutoCAD to generate topography from field survey data and calculate earthwork cut and fill volumes for cost estimating. Generated construction stakeout drawings for grading operations. Creates alignments, cross sections and profiles.

Database Design/Data Management—Designed Microsoft Excel and Rivermorph databases to manage environmental assessment data. Designed and created relationships to equate restoration data with construction data and environmental assessment, including regional curves, stone sizing curves, sediment rating curves, and watershed substrate curves.

Selected Publications and Presentations

Contributor and peer-reviewer of the *Codorus Creek Non-Point Source Pollution Control Watershed Implementation Plan*, Codorus Creek Watershed Association and York County (Pennsylvania) Conservation District, 2007.

Contributor to *Estimating Volume, Nutrient Content, and Rates of Stream Bank Erosion of Legacy Sediment in the Piedmont and Valley and Ridge Physiographic Provinces, Southeastern and Central PA*. Reported to the Pennsylvania Department of Environmental Protection, Robert Walter, Ph. D., Dorothy Merritts, Ph. D., and Mike Rahnis, M. Sc.

EA Project Experience

Midshore I Landfill Capacity Analysis; Talbot County, Maryland; Maryland Environmental Service; 2008; Project Engineer—Using provided topographic data from the client, landfill capacity analyses were performed to estimate the volume of waste placed in the landfill and the remaining airspace using various final cover schemes. AutoCAD Civil 3D surface utilities were employed for calculations.

Project Value - \$3,890; Contract Type – T&M; EA Project No. – 14584.01; EA Project Manager – Mark Gutherlet

Garland Creosoting Site Hazardous Waste Containment Cell; Gregg County, Texas; US EPA Region 6; 2008; Engineering Support – Provided design and technical support to the design of this hazardous waste containment cell near Longview, Texas. Technical support for plans, details, specifications, and construction cost estimate. Extensive design support for leachate collection and associated mechanical systems. Performed infiltration analysis using the Hydraulic Evaluation of Landfill Performance (HELP) Model, settlement and slope stability analysis, and prepared supporting documentation.

Project Value - \$458,000; Contract Type – T&M; EA Project No. – 14342.25; EA Project Manager – Sam Davis

Brown Station Road Landfill Area B Closure Design; Prince George’s County, MD, Prince George’s County Government; 2008-Present; Engineering Support - Provided design and technical support to the closure design of a municipal solid waste landfill. Technical support for plans, details, and specifications. Performed infiltration analysis using the Hydraulic Evaluation of Landfill Performance (HELP) Model, slope stability analysis, and prepared supporting documentation. Performed end of year volume calculations, capacity projections and closure grading plan production.

Project Value - \$249,000; Contract Type – T&M; EA Project No. – 61656.24; EA Project Manager – Sam Davis

Brown Station Road Landfill Operations and Maintenance Plan; Prince George’s County, MD, Prince George’s County Government; 2008-2009; Report Coordinator and Project Engineer, Task Manager and Engineering Support - Provided technical support and overall coordination of the update to the Brown Station Road Sanitary Landfill Operations and Maintenance Plan, Health and Safety Plan, and Facility Emergency Response Plan, Scale House Manual, Security Manual, Maintenance Garage Manual, Collections Manual, and Security Manual. The project also included updates to the operations and maintenance plans of the materials Recycling Facility, Sandy Hill Landfill, and the maintenance garage on site.

Project Value - \$160,000; Contract Type – T&M; EA Project No. – 61656.27; EA Project Manager – Sam Davis

Black Walnut Point Shoreline Stabilization; Tighlman Island, MD, Maryland Department of Natural Resources; 2008-2011; Project Engineer – Engineering, wave modeling support, armor stone sizing and analysis for approximately 2000 linear feet of shoreline stabilization on Black Walnut Point. Analysis includes the assessment of fetches, bathymetric and meteorological data using the standards for revetment design in the Coastal Engineering Manual. The project included support for the preparation of a Joint Permit Application, Erosion and Sediment Control Plan and permitting and Stormwater Management.

Project Value - \$53,551; Contract Type – LS; EA Project No. – 62094.02; EA Project Manager – Mark Gutherlet

East Stony Run Stream Stabilization; Baltimore City, MD, College of Notre Dame of Maryland; 2009; Project Engineer – Field data collection, survey, drafting, detailed assessment and concept plan development to stabilize / restore approximately 1600 linear feet of East Stony Run through the campus of the College of Notre Dame of Maryland. The design involved the placement of structures, channel sizing, wetland creation, stormwater management, floodplain restoration and sediment transport calculations in a highly urbanized reach beginning in culverts and starved of sediment. Dam removal and modification options were evaluated, as well as the riparian buffer community and fitting natural, habitat, and stabilization elements in with the College’s infrastructure master plan. A detailed concept design report was prepared

Project Value - \$35,544; Contract Type – T&M; EA Project No. – 1453801; EA Project Manager – Richard Pfingsten

Worcester County Central Landfill Cell 5 Design; Newark, MD, Worcester County Department of Public Works; 2009; Project Engineer – Phase III Design Permit report preparer, CAD manager and project design engineer / technical support for the reclamation of Cell 5 from a rubble landfill cell into a municipal solid waste landfill cell. The site practices leachate recirculation and operates as a bioreactor, with an active landfill gas extraction system and waste to energy facility. Cells are continually reused at the site, recycling decomposed waste into cover material. Prepared subgrade contours and conceptual final grades, prepared design calculations for veneer stability, geotextiles, and assisted in preparation of cost estimate.
Project Value - \$159,567; Contract Type – T&M; EA Project No. – 1060931; EA Project Manager – Darl Kolar

Atlantic Wood Industries (AWI) Tidal Wetland Mitigation Design; Portsmouth, VA, US EPA Region III; 2009; Project Engineer – Project engineer and designer for the one acre on-site wetland mitigation and 0.7 acres of riparian area as relating to Superfund cleanup activities on the site. Performed general project coordination and engineering technical support relating to sheet pile walls, erosion and sediment controls, plans and specifications.
Project Value - \$4.5 million; Contract Type – Cost Plus Fixed Fee; EA Project No. – 1453011; EA Project Manager – Pete Pellissier

Calvert Cliffs Nuclear Power Station Unit 3 Mitigation Plan; Lusby, MD, Unistar; 2009-Present; Project Engineer and Task Manager – Field data collection, survey, drafting, detailed assessment and Phase II mitigation plan design development to stabilize / restore approximately 10,236 feet of first, second and third order sand and silt bed creeks through the property of Calvert Cliffs Nuclear Power Station, preserve 930 feet of third order tributary, and design of the creation of 12.26 acres of forested wetland, 1.61 acres of emergent wetland, 0.9 acres of open water, and enhance 19.62 acres existing wetlands. The design involved the placement of riffle grade control structures, channel sizing, wetland creation, stormwater management, floodplain restoration and sediment transport calculations in sensitive, vegetated impaired reaches. Special consideration of preserving native vegetation was required. Special consideration of placement of woody debris and habitat elements to preserve and enhance native populations of American Eel. Adapted multiple established stream restoration methodologies to form the basis of new ecosystem restoration techniques to mimic the functions and values of beaver meadows and associated dendritic low-flow channels and connected floodplain wetlands as a centerpiece to the design strategy. The design blended conventional natural channel design techniques with practices of RSC design, and riffle grade control design to establish a stable system with multiple flow and sediment regimes. Developed an adaptive management and monitoring plan in accordance with new mitigation rule guidance and in accordance with the methodologies used on the site to assess, classify, and evaluate stream channel function and values. Performed agency coordination as a regular presenter at Joint Evaluation Committee (JEC) meetings in Annapolis, Maryland, including work for both tidal and non-tidal components of the mitigation.
Project Value - \$800,000; Contract Type – Lump Sum with T&M Phases; EA Project No. – 1462103, 1486303, 1486301; EA Project Manager – Richard Pfungsten (non-tidal) and Christine Papageorgis (tidal)

Center for Aquatic Life and Conservation, Baltimore City, Maryland; National Aquarium in Baltimore; 2009-2010; Project Engineer—Site reconnaissance and preparation of technical specifications, cost estimate, and design of environmental capping and revetment repair details relating to the Remedial Action Plan submitted to Maryland Department of the Environment for the brownfields redevelopment of a former industrial site into a waterside public park. Also, on-call assistance performed during the construction phase of the project. The site is part of the Voluntary Cleanup Program (VCP).
Project Value – \$152,600; Contract Type – Cost Plus Maximum; EA Project No. – 6187404; EA Project Manager – Jim Hulbert

Garrett and Potee Response Action Plan , Baltimore City, Maryland; Baltimore Development Corporation; 2010-2011; Project Engineer— Design/Build Site remediation. Activities included investigation, cost estimate, and design of environmental capping details relating to the Remedial Action Plan to be submitted to Maryland Department of the Environment for the redevelopment of a former dump site into a commercial / industrial development. Evaluation of an existing stream channel on the site for stability and human exposure hazard of banks and sediments, design of site fencing and perimeter capping detail. As well as construction submittals associated with the implementation.
Project Value – \$475,981; Contract Type – Cost Plus Maximum; EA Project No. – 14272.05-14272.06; EA Project Manager – Jim Hulbert

Andrews Air Force Base Joint Permit Support and Mitigation Plan Development; Joint Base Andrews, Maryland; Andrews Air Force Base / US Army Corps. of Engineers Planning; 2010; Project Engineer—Development of the Joint Permit Application, impact plates, and Phase I and II mitigation plans and wetland design assistance relating to the approximately 12 acres of permanent wetland impacts associated with the west runway repairs at Joint Base Andrews. Agency coordination performed as a regular presenter at JEC meetings in Annapolis, Maryland. Evaluated potential mitigation sites, developed monitoring well plan and adaptive management strategy for the success of a groundwater-driven mitigation wetland.

Project Value – \$258,876; Contract Type – Lump Sum; EA Project No. –6213253; EA Project Manager – Charles Leasure

Powder Mill Run Stream Restoration; Baltimore City, Maryland; City of Baltimore; 2009; Project Engineer—Peer-review and consultation of stream restoration design plans.

Project Value – \$339,153; Contract Type – Cost Plus Maximum; EA Project No. –1451302; EA Project Manager – Richard Pffingsten

Beaver Dam Creek #20 Watershed Restoration and BMP Design; Prince George’s County Government; 2010; Project Engineer—Watershed reconnaissance for the evaluation of structural and non-structural best management practices to improve stormwater quality and quantity control in the Beaver Dam Creek watershed, including evaluation of wetland creation and stream restoration. Fluvial geomorphic survey and WARSSS assessment of approximately 700 linear feet of first order entrenched stream was performed, as well as design and permit of a regenerative stormwater conveyance system to restore floodplain and ecological function of the stream and maintain existing forest vegetation through Maryland National Capitol Park and Planning property. Project goals include reducing sediment erosion and turbidity, maintaining and promoting riparian vegetation, and causing a large scale uplift of shallow groundwater to create connected floodplain wetlands along the reach, filtering stormwater.

Project Value – \$107,924; Contract Type – Cost Plus Maximum; EA Project No. –6165636; EA Project Manager – S. Ali Abbasi

ICC Hollywood Branch Stream Restoration; Montgomery County, Maryland; Maryland State Highway Administration; 2010; Project Engineer—Complete fluvial geomorphic assessment and analysis utilizing WARSSS methodology, natural channel design, and stabilization design assistance for 65% and 100% phases of approximately 8,100 linear feet of Hollywood Branch and a tributary, third order tributary to Paint Branch. Project goals / design elements include restoring fish passage through culverts, improving floodway conveyance, reducing sediment erosion through reaches entrenched in modern (Legacy) sediments, and preserving existing vegetation through Maryland National Capitol Park and Planning Property.

Project Value – \$1,000,000; Contract Type – Cost Plus Maximum; EA Project No. –1471601; EA Project Manager – Richard Pffingsten

Stormwater Retrofit and Bank Stabilization Concept Plan for Cromby Generating Station; Phoenixville, Pennsylvania; Exelon Corporation; 2010; Project Engineer—Development of concept designs and report for managing stormwater quantity and quality, as well as stabilizing the banks of the Schuylkill River adjacent to the Cromby Generating Station. Infiltration, bio-retention, and environmental site design techniques were employed in the plan development.

Project Value – \$9,600; Contract Type – Cost Plus Maximum; EA Project No. –1472001; EA Project Manager – Greg Gromicko

McDonogh Road Water Quality Retrofit; Randallstown, Maryland; Baltimore County Department of Environmental Protection and Sustainability; 2011-Present; Project Engineer—Complete fluvial geomorphic assessment and analysis utilizing WARSSS methodology, natural channel design, floodplain restoration, and stormwater / floodplain wetland design of approximately 1,500 linear feet of Scotts Level Branch and 600 linear feet of tributary referred to as Reach 5, third order tributaries to Gwynn’s Falls. Project goals / design elements include design of a stable channel and confluence, restoration of historical floodplain functions, implementation of wetlands with hydrology based in stream channel, groundwater, sheet flow and stormwater interactions, restoration and enhancement of existing wetlands on site, establishment of native vegetation and removal of invasive species and homogenous vegetation communities, development of micro-topography to foster diverse wetland and floodplain habitats. Served as lead designer, field effort leader, and task manager. Developed a design which employs traditional natural channel restoration structures, riffle grade control, and open water confluence techniques

/ channel self determination to meet the project goals. Assisted in joint permit application preparation, agency coordination, and natural resource studies and inventories. Assisted in the development of the planting and enhancement plans, selecting species of plants for habitat as well as functions, values, and aesthetics. Developed specifications, erosion and sediment control plans, and revised the existing mitigation plan for the site.

Project Value – \$273,054; Contract Type – Cost Plus Maximum; EA Project No. –1471601; EA Project Manager – Richard Pfingsten

Scotts Level Branch Restoration Prioritization Study, Baltimore County, Maryland; Baltimore County Department of Environmental Protection and Resource Management; 2011 Engineering and Site Assessment Support—Assisting in conducting an assessment of existing watershed data and reports, developing a restoration prioritization tool, and recommending specific stream and watershed restoration actions within the Scotts Level Branch Watershed, near Randallstown, Maryland. Conducted site assessments and concept designs for those selected sites. The prioritization tool will be used to rank watershed areas in order of impairment severity then to predict the overall pollutant/sediment load reductions based on recommended restoration actions. The overall goal of the County for this project is to attain measurable water quality improvements and pollution reductions within the Scotts Level Branch Watershed with consideration of specific total maximum daily loads and stream stability.
Project Value – \$149,966; Contract Type – Cost Plus Maximum; EA Project No. – 1463001; EA Project Manager – Richard Pfingsten

Permit Application; Lake Anna, Lake and Stream Studies; Virginia; Dominion Power Corporation; 2009-2011, Engineering Support—Preparation of Impact Plates and other permitting documents for the Joint Permit Application for impacts to wetlands and waters and for water withdrawal from Lake Anna. The Joint Permit Application was prepared for a proposed nuclear unit at North Anna Power Station, located in Mineral, Virginia. Design assistance for required wetlands and submerged aquatic vegetation restoration plans associated with the project and heavy haul route impacts associated with it.
Project Value – \$2,149,058; Contract Type – Cost Plus Maximum; EA Project No. – 14391.01 – 14391.02; EA Project Manager – Bill Rue

Alcoa Eastalco Closure Planning; Frederic, Maryland; Alcoa – Eastalco Works; 2011, Engineering Support—Preparation of groundwater contour maps, groundwater analysis and alternatives analysis for the closure of the Eastalco plant residuals landfill on the site.
Project Value – \$27,486.00; Contract Type – Cost Plus Maximum; EA Project No. – 1435902; EA Project Manager – Sam Davis

Pawtuxet River Restoration Partial Dam Removal; Pawtuxet River Authority; Warwick and Cranston, Rhode Island; 2010-2011 Engineering Support—Support for sediment transport analysis and exposure evaluation of bank treatment options for the Pawtuxet Falls Dam Fish Passage project in Warwick and Cranston, Rhode Island. The project proposes to remove part of the concrete dam spillway at Pawtuxet Falls at the mouth of the Pawtuxet River on Pawtuxet Cove. By removing a section of the dam on the Warwick side, the project will allow migratory fish to swim upstream and return more natural flow to the lower Pawtuxet River, restoring the historic ecological connection between the river and the Bay.
Project Value – \$157,573.11; Contract Type – LS; EA Project No. – 62277.01; EA Project Manager –Sam Whitin

Other Project Experience

East Branch Codorus Creek Phase V Stream Assessment, Restoration Design and Construction 2007-2008; Project Engineer—Project engineer, designer, and permit preparer for a 2,300-ft third-order reach of East Branch Codorus Creek and tributaries near Red Lion, Pennsylvania. The reach is classified as cold water stocked trout fishery and receives heavy recreational usage. The reach is severely impaired due to multiple dams installed for swimming and recreational usage. Part of the project involved the removal of dam remains and establishment of a floodplain in close quarters with existing residences and infrastructure. Prepared the Section 404 Joint Permit Application and agency negotiation and coordination. Developed a monitoring plan for compliance tailored to the budget of the volunteer sponsors. Was granted project approval and served as a construction oversight manager. This project was sponsored by the Izaak Walton League of America, York Chapter 67.

South Branch Codorus Creek Phase V Stream Assessment, Restoration Design and Construction 2006-2008; Project Engineer—Project engineer, designer, and permit preparer for a 3,150-ft third-order reach of South Branch Codorus Creek and tributaries near Glen Rock, Pennsylvania. The reach is classified as warm water stocked trout fishery and receives heavy recreational usage. The reach is severely impaired due to agricultural disturbance and the Larue mill dam installation which left 11-ft banks of fine sediment. A floodplain restoration with 14 acres of disturbance was approved. Prepared the Section 404 Joint Permit Application and agency negotiation and coordination. Developed a monitoring plan for compliance tailored to the budget of the volunteer sponsors. Was granted project approval and served as a construction oversight manager. This project was sponsored by the Izaak Walton League of America, York Chapter 67.

Loganville Bypass Stream Mitigation Assessment and Design Plan, 2007; Project Engineer—Project engineer design consultant to municipal engineer C.S. Davidson to mitigate for approximately 1,100 ft of first-order stream impacts due to the installation of new roadways. The project included more than 1,200 ft of enhancement, stabilization, riparian buffer planting, meadow restoration, wetland creation, and conservation easement in conjunction with a constructed greenway trail near Loganville, Pennsylvania. The project included special considerations for an existing wastewater treatment facility. Prepared bid documents, design, specifications, and assisted C.S. Davidson in preparation of permit waiver documents. Developed mitigation monitoring plan and received a USACE permit for the activities.

Chambers Road Stream Location Mitigation Re-Design, Construction and Monitoring Plan Development and Implementation, 2006; Project Engineer (Design / Build)—Project engineer for the assessment and re-design of a failed stream relocation under urban conditions for York Township, Pennsylvania. Approximately 290 ft of first order tributary, previously designed with concrete weir structures, was redesigned after approximately 3 ft of entrenchment occurred. Using natural channel design principles, an appropriate substrate size was designed and structures were added for scour pool development and energy dissipation. The system was created as a stable, but highly confined B stream type which accommodates two large stormwater culverts and existing infrastructure. A monitoring plan was implemented post-construction to satisfy permit compliance.

Main Stem Muddy Creek Woodbine Stream Restoration Re-Design, Construction and Monitoring Plan, 2006; Project Engineer (Design / Build)—This approximately 2,000-ft project on Main Stem Muddy Creek, Woodbine, Pennsylvania was previously designed but required re-design due to the non-cooperation of a critical landowner. The confluence of a third order tributary and Muddy Creek (100 mi² contributing drainage) was re-designed and a 70-ft fallen sycamore tree was incorporated into a habitat enhancement structure. New grading plans, monitoring plan, and agency coordination were performed. This project was sponsored by Muddy Creek Chapter Trout Unlimited. Construction management and assessment analysis were performed.

South Branch Codorus Creek Phase IV Stream Assessment, Restoration Design 2006-2008; Project Engineer—Project engineer, designer and permit assistance for a 14,000-ft first-through third-order reach of South Branch Codorus Creek and tributaries near Glen Rock, Pennsylvania. The reach is classified as cold water and warm water stocked trout fishery. The reach is severely impaired due to agricultural disturbance, mill dam installation, and legacy sediments resulting in high silt banks. A complete floodplain restoration with over 50 acres of disturbance was approved, though environmentally sensitive design techniques were employed to preserve the majority of existing vegetation. Received a Nationwide 27 permit and performed agency negotiation and coordination. Developed a monitoring plan for compliance tailored to the budget of the volunteer sponsors. This project was sponsored by the Izaak Walton League of America, York Chapter 67.

East Branch Codorus Creek Phase IV Stream Assessment, Restoration Design and Construction 2006-2007; Project Engineer & Manager—Project engineer and designer for 4,300-ft of third-order reach of East Branch Codorus Creek near Glen Rock, Pennsylvania in Spring Valley Park. The reach is classified as a high quality cold water fishery and stocked trout fishery. Years of prior agricultural disturbance and mill dam installation left the reach with high silt banks and severely impaired by sediment. Maintaining channel shade was imperative due to high quality cold water fishery status and native trout populations utilizing the reach. Special considerations during permitting developed the use of innovative fish habitat structures and log usage in the final construction. Multiple iterations of the design were created to best suit stocked trout needs as the site is under heavy recreational use. Assisted with preparation of the Section 404 Joint Permit Application and agency negotiation and coordination. Developed a monitoring plan for compliance tailored to the budget of the volunteer sponsors. Obtained approval for the project and was a construction oversight manager. This project was sponsored by the Izaak Walton League of America, York Chapter 67.

Hollow Tributary Stream Assessment, Restoration Design and Construction 2006-2007; Project Engineer—Project engineer and designer for a 4,500-ft second- and third-order reach of unnamed tributary in Springfield Township, York County Pennsylvania. This reach was part of a larger greenway project coinciding with the rapid residential development in the area. Coordination between the non-profit group which owned the land, the developers and their consultants building the greenway trail, and with regulators was essential for this project. Due to mature existing vegetation, several in-field design adjustments were made to accommodate. Assisted with preparation of the Section 404 Joint Permit Application and agency negotiation and coordination. Developed a monitoring plan for compliance tailored to the budget of the volunteer sponsors. Obtained approval for the project and was a construction oversight manager. This project was sponsored by the Izaak Walton League of America, York Chapter 67.

Spring Creek Phase III Stream Assessment, Restoration Design and Construction 2005-2007; Project Engineer—Project engineer and designer for an urbanized 2,200-ft third-order reach of Spring Creek in Harrisburg, Pennsylvania. This reach was characterized by constraints due to utility installation and high, silt banks with excellent riparian vegetation which was preserved. Maintaining channel shade was imperative due to cold water fishery status and native trout populations utilizing the reach. Assisted with preparation of the Section 404 Joint Permit Application and agency negotiation and coordination. Developed a monitoring plan for compliance tailored to the budget of the volunteer sponsors. Obtained approval for the project and assisted with construction management. This project was sponsored by the Doc Fritchey Chapter of Trout Unlimited.

Appell Stream Assessment and Restoration Design 2007-2008; Project Engineer & Manager—Project engineer and manager, designer, and permit preparer for a 1,200-ft first-order tributary to Tyler Run in York, Pennsylvania through a private estate. The reach had suffered significant erosion and down-cutting due to stormwater from Interstate 83. A thorough assessment and restoration design was created with flood storage wetlands to mitigate for stormwater flows and create unique habitat. Design considerations included a specialized approach which preserved and integrated existing mature landscaping with a manicured estate.

Pierceville Run, McClelland Pasture, Stream Restoration Implementation and Monitoring; Project Engineer & Construction Inspection 2006—Project engineer for restoration of approximately 2,134 linear feet of stream restoration and wetland creation on third order Pierceville Run, High Quality Coldwater Fishery, and an adjacent first-order tributary in Glen Rock, Pennsylvania. The reach was previously designed and permitted under the PADEP Watershed-wide permitting process (now defunct); however in-field design changes and modification were required due to errors and omissions by the previous designer, and due to a significant storm which occurred during construction. The reach had suffered significant erosion due to heavy agricultural use. Performed pre- and post-construction monitoring with the Non-profit sponsor, as-built survey and collected geomorphic information of the completed reach. Coordinated and assisted in a post-construction tour for PADEP officials. In-field design considerations included maintaining / restoring a previously-installed CREP riparian buffer project and grading of legacy sediment and lifting of the stream profile to restore a floodplain.

Oil Creek Phase I Stream Restoration Design and Permit; Project Engineer 2006-2008—Project engineer and permit preparer for restoration of approximately 2,700-ft of stream restoration and wetland creation on third order Oil Creek outside Hanover, Pennsylvania. The reach had suffered significant erosion due to heavy agricultural use. Performed pre-construction monitoring, collected geomorphic information of the completed reach, and construction inspection. The design included stream bank fencing and cattle crossing BMP design to coordinate restoration with an existing cattle operation. This project was sponsored by Codorus Creek Watershed Association.

East Branch Codorus Creek, Godfrey Pasture, Stream and Floodplain Restoration Design and Permit 2005-2008; Project Engineer—Project engineer and designer for 3,400-ft third-order reach of East Branch Codorus Creek and approximately 300-ft of unnamed tributary near Glen Rock, Pennsylvania immediately downstream of Spring Valley Park and East Branch Codorus Creek Phase IV project. The reach is classified as a high quality cold water fishery and stocked trout fishery. The reach was previously designed, but required a new grading plan and redesign due to inactivity of the project and severe erosion on the reach. Design included regarding of approximately 45,000 CY of Legacy Sediment and the removal of the remains of an existing breached mill dam. Coordination with Franklin and Marshall College for Legacy Sediment studies occurred prior to construction for two years. Assisted with preparation of the Section 404 Joint Permit Application and agency negotiation and coordination. Re-design of the reach included changes to the width depth ratio, addition of woody habitat features, development of the grading plan, and design of the confluence with Seaks Run and restoration design of an unnamed tributary to East Branch Codorus Creek. Developed a monitoring plan for compliance tailored to the budget of the volunteer sponsors. Obtained approvals for the project. This project was sponsored by the Izaak Walton League of America, York Chapter 67.

Unnamed Tributary to East Branch Codorus Creek, Brown Property, Stream Bank Stabilization and Floodplain Re-Connection Design and Permit 2007-2008; Project Engineer—Project engineer and designer for 120-ft of an unnamed tributary to East Branch Codorus Creek near Red Lion, Pennsylvania. The reach, due to sediment transport problems resulting from entrenchment and channel enlargement processes, threatened an adjacent home and could not access its floodplain during small flood events. Bank grading, planting of a riparian buffer, and bank protection were utilized to protect infrastructure, improve channel capacity and re-connect the floodplain. Performed all coordination and obtained all approvals for the project. Conducted pre-and post construction survey and assessment, managed construction, and conducted post-construction agency coordination.

Camp Sinoquipe Boy Scout Camp Sediment Forebay and Plum Run Fish Habitat Enhancement Design and Permit, 2007-2008; Project Engineer—Project engineer and designer for 250-ft of fish habitat restoration on Plum Run through the property of Mason-Dixon Council Boy Scouts of America, as well as the design of a sediment forebay within Lake Sinoquipe. The forebay we designed to trap bedload and suspended sediment, while retaining fish passage. The project goal was to decrease the area of the lake requiring dredging to decrease impact of dredging activities on their stocked and native fishery. All approvals were granted, including sanctioning for GP-1/Small Projects permitting from the Pennsylvania Fish and Boat Commission.

Bahia de Buenaventura, Columbia Modeling Study 2005; Modeler—Hydrodynamic modeling in RMA2 and RMA4 water quality constituent modeling for conceptual location of a major sewage outfall for the City of Buenaventura, Columbia. Project involved grid creation and modification, model processing, post processing, and report preparation.

Draft Environmental Impact Statement for the Proposed Masonville Dredged Material Containment Facility; 2005; Modeler—Delft 3D modeling, data collection, and data analysis for conceptual placement of a dredged material containment facility in Baltimore Harbor for Maryland Port Administration. Project involvement included analysis of existing and historical bathymetry and chart data, estimation of existing and proposed sedimentation, wave analysis, tidal prism analysis, and armor stone design.

Baltimore Inner Harbor Marina; Engineering Support — Layout of marina improvements at Baltimore Harbor Marina, Baltimore City, Maryland. The layout was redesigned to cater to more and larger vessels. Concept plans were developed with accepted codes and guidance from the client.

Shoreline Stabilization Design; Aberdeen Proving Ground, Maryland – Conducted wave hind casting, costs estimation and armor stone sizing for shoreline stabilization at multiple sites on Aberdeen Proving Ground, along the shoreline of the Chesapeake Bay.

Employment History

Years of EA Experience: 3+
Years w/Other Firms: 4

Employment History–Detailed

Employer—EA Engineering, Science, and Technology, Inc.

Dates of Employment—April 2008 – Present

Title—Engineer III

Employer—Aquatic Resource Restoration Company

Dates of Employment—November 2005 – April 2008

Title—Environmental Scientist / Restoration Engineer

Employer—Moffatt & Nichol

Dates of Employment—April 2004 – November 2005

Title—Staff Engineer

List of Technical Skills

- Literacy in many aspects of computers and software including AutoCAD Civil 3D 2009-2011, Microsoft Office Suite, HTML, Corel WordPerfect, Rivermorph 4.3 Professional, Surface Water Modeling System (SMS), Delft 3D Hydrodynamic Modeling, POWERSED/FLOWSED, RMA2, RMA4, SED2D, MathCAD, TDS Survey Tools, FastTABS, CORPSCON, and USACE Hydrologic Evaluation of Landfill Performance (HELP) Model, Wave modeling and armor stone sizing.
- MCACES cost estimating software

List of Specializations

- Water resources engineering (stream restoration, wetland restoration, watershed restoration, erosion and sediment control, stormwater management)
- Coastal engineering (shoreline stabilization, hydrodynamic modeling, wave hind casting, armor stone sizing)
- Grant writing (extensive successful experience in watershed restoration and enhancement grant preparation as funded by EPA 319(h) funding and Pennsylvania’s Growing Greener fund)
- Construction cost estimation, management, inspection and oversight of restoration and habitat enhancement projects
- Geomorphic and vegetation monitoring of completed eco-restoration projects
- Construction inspection and management of stream and wetland enhancement and restoration projects
- Propagation and installation of eastern united states native riparian, wetland, and coastal vegetation

