



District Green Infrastructure Funding Programs Green Vendor Pre-Qualification List RFQ No. P-2634



To: Milwaukee Metropolitan Sewerage District

Date: April 1, 2015

From: Amec Foster Wheeler Environment & Infrastructure, Inc.

01 April 2015

Mr. James P. Morgan
Senior Contract Administrator
Milwaukee Metropolitan Sewer District
260 West Seeboth Street
Milwaukee, Wisconsin 53204-1446

Dear Mr. Morgan:

**District Green Infrastructure Funding Programs
Green Vendor Pre-Qualification List
RFQ No. P-2634**

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) is pleased to submit the attached Statement of Qualifications for design and engineering services with respect to implementation of green infrastructure projects. Amec Foster Wheeler is an international consulting engineering and environmental firm with substantial experience with successful projects to control excess surface runoff through green infrastructure in large metropolitan areas, including Philadelphia (PA), Cincinnati (OH), Indianapolis (IN), Nashville (TN), Fort Wayne (IN), and Peoria (IL). Projects have been designed to conform to Municipal Separate Storm Sewer System (MS4) stormwater permitting requirements, reduce flooding and increase level of service and reduce overflows from combined sewer service areas.

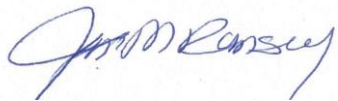
Brandon Koltz will serve as Amec Foster Wheeler's project manager. Located in Milwaukee, he has over 35 years' experience with Milwaukee Metropolitan Sewer District (the District) and its service area facilities planning including wet weather overflow control, runoff control and water quality improvements. He will organize experienced professionals from Amec Foster Wheeler to efficiently and effectively deliver innovative and effective green infrastructure solutions to the communities within the Milwaukee metropolitan area.

Amec Foster Wheeler is eager to share our extensive green infrastructure design and engineering experience with the Milwaukee area communities. If you have any questions regarding this qualifications statement, please call (414) 732-1280.

Yours respectfully



Brandon Koltz
Project Manager



Jean M. Ramsey, PE
Water Resources Branch Manager



amec
foster
wheeler

Request for Qualifications

District Green Infrastructure Funding Programs

Green Vendor

Pre-Qualification List

RFQ No. P-2634

Submitted to

Milwaukee Metropolitan Sewerage District

Submitted by

Amec Foster Wheeler Environment & Infrastructure, Inc.

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Firm History



Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler), started in 1946, is an environmental consulting, engineering and design, and construction company operating with more than 4,200 professionals in about 110 locations across the US. Serving the transportation, water, clean energy, federal, industrial/commercial, mining, oil & gas sectors, we provide services to both public and private clients worldwide.

As with much of the consulting community, Amec Foster Wheeler is a consolidation of people and firms that you have worked with under other names including MACTEC, PSI, Law Environmental, Ecology and Environment, AMEC, and others. These are all firms that have been located in the Midwest and have provided services to municipalities and businesses throughout our area for more than 30 years. We are now united as Amec Foster Wheeler Environment & Infrastructure, Inc., one of the larger environmental consulting firms in the nation. We have the ability to bring cutting edge technology from across the country and the world and deliver it with local and regionally based experts.

The strength of the Amec Foster Wheeler Team is the exceptional experience nationally and with regional offices in Illinois; Indiana; Ohio; Kentucky; Michigan; Missouri; Tennessee; and Pennsylvania which work closely together to perform services for local storm water and sewer districts. Our professionals have designed nearly 2 million lineal feet of sewer lines and appurtenant facilities over the past 5 years, making us a recognized leader in the areas of sewer system analysis, design, and construction phase services. We have been involved with sewer system capital improvement programs for decades, and have completed numerous projects for major systems including Cincinnati and Cleveland, OH; Louisville KY; St. Louis, MO; Peoria and Clinton, IL; Indianapolis, IN; Nashville, TN; Denver, CO; and Lake Havasu and Bullhead City, AZ.

Amec Foster Wheeler has been at the forefront of innovative technology design and review. Our experience includes green infrastructure design, sustainable watershed and site planning to minimize environmental impact, storm water issues, combined sewer separation inflow and infiltration (I&I) reduction, and combined sewer overflow (CSO) / sanitary sewer overflow (SSO) elimination; water efficiency management through landscaping, storm water storage and reuse, and water reduction technologies; storm water separation, watershed assessments, storm water best management practices (BMP)s, and a host of other technologies associated with this field. We currently provide these services for Cincinnati, St. Louis, Peoria, Indianapolis, Atlanta, Nashville, Philadelphia, Los Angeles, and other major cities across the US.



Regional offices providing Green Infrastructure

Organizational Chart



Key Personnel



The District and its partners have access to a full cadre of Amec Foster Wheeler personnel to provide Green Infrastructure Design and Engineering Services.

The core team identified below can be supplemented as needed to allocate additional resources in the case of multiple project assignments, accelerated schedules, or to address complex issues. Resumes delineating education, technical training, and experience are attached.

Individual	Education	Years Experience	Expertise
Brandon Koltz Project Manager	BA, Biology, Carthage College, Kenosha, WI USA, 1972 MS, Environmental Engineering, University of Iowa, Iowa City, Iowa, USA, 1982	37	Project Management, water quality assessment, facilities planning, environmental assessment and regulatory compliance, sustainability, stakeholder engagement
Greg Asbury Project Principal	Master of Science, Environmental Biology, Ball State University, 1981 Bachelor of Arts, Zoology, DePauw University, 1976	37	Water and infrastructure planning; CSO abatement; Environmental impact analysis and compliance; Project management; Public outreach; EPA Consent Decree Negotiation including Green Infrastructure
Andrew Reese, LEED AP, PE Green Infrastructure Technical Advisor	MS, Business Administration, Boston University, 1980 MS, Hydraulic Engineering, Colorado State University, 1977 BS, Civil Engineering, Cornell University, 1975	35	Recognized national leader in developing local storm water programs, LID design, GI, and financing studies for local government including managing development of more than 25 storm water utilities. Stormwater and Green Infrastructure policy implementation, Water Sector Nationwide Lead for Amec Foster Wheeler

Individual	Education	Years Experience	Expertise
Jean Ramsey, PE, LEED AP Technical Lead	BS, Civil Engineering, Michigan Technological University, 1989	25	Municipal sewer system evaluation & design for overflow abatement with Green Infrastructure including modeling, permitting, and EPA negotiations; Storm water management, sustainable sites and green infrastructure master planning and design, project management, and quality assurance review. Utility and infrastructure design, development of bid documents, construction inspection, site evaluation and master planning,
Heather N. Williams, EI, LEED AP	BS, Civil Engineering, Purdue University, West Lafayette, Indiana, 2003	10	Policy development, public education and outreach, technical design standard creation, and overall program implementation for municipal sustainable infrastructure initiatives and programs combining and evaluating municipal wet weather programs including NPDES storm water permit, long term control plan, green infrastructure master plan, and capital improvement projects
Daniel Ketzer, PE	MS, Food, Agricultural, and Biological Engineering, Ohio State University, Columbus, Ohio, 2010 BS, Food, Agricultural, and Biological Engineering, Ohio State University, Columbus, Ohio, 2007	11	Green infrastructure, stream geomorphology, bankfull identification, self-forming channel design, two-stage channel design, natural channel design, groundwater modeling, watershed delineation, model in-stream processes, qualitative stream assessment, field soil sampling, soil analysis, hydrometer method, HY-8, XPSWMM, EPA SWMM 5.0, ArcMap, AutoCAD Civil 3D, , HEC-RAS, MATLAB
Brian Merritt, PE	MS, Civil Engineering, Lehigh University BS, Civil Engineering, Lehigh University	12	Green Infrastructure, Stormwater Planning and Design, Stormwater Program and Finance Strategies, Regulatory Impact Analysis, Stormwater Ordinance Development Site/Civil Engineering, Flood Protection System Evaluation, Stormwater Compliance and Permitting.
Jay Kessen, PE	BS, Civil Engineering, University of Iowa, Iowa City, Iowa, 1988.	25	Hydrologic and Hydraulic Simulation, Watershed Planning, Flood Plain Mapping Flood Control / Stormwater Master Planning, Local, State and Federal Stormwater Permitting, Stormwater Ordinance and Technical Guidance Manual Preparation

Individual	Education	Years Experience	Expertise
Kip Smith, PE	BS, Mining Engineering, University of Wisconsin, Platteville, WI, 1986	29	Civil & Mining Engineering, Engineering Plan Development, Environmental Permitting, Construction Specifications, Construction Inspection & Administration Services
Chris Prosperi, PE	BS, Civil Engineering, Marquette University, 2000	14	MicroStation, Geopak, roadway design, alignment and profile design, maintenance of traffic, pavement marking and signing, construction cost estimates, QA/QC procedures, project management, subconsultant management, procurement, subsurface utility engineering and utility coordination.
Ron Huffman, ASLA, AICP	<p>Master of Community Planning, Auburn University, School of Architecture and Fine Arts, 1984</p> <p>Master of Arts, History, with a concentration in Historic Preservation, Auburn University, College of Liberal Arts, 1984</p> <p>Bachelor of Landscape Architecture, Auburn University, School of Architecture and Fine Arts, (ASLA – Certificate of Honor for Academic Excellence), 1983</p>	31	Landscape architecture, master planning, design, redevelopment plans, historic design, bridge/overpass enhancements, LED lighting, signage enhancements
Warren High	<p>MS, Environmental Management, University of Findlay</p> <p>BS, Fisheries & Wildlife Biology, Iowa State University</p> <p>Rosgen Stream Restoration Training Level IV</p>	32	Watershed Management, Green Infrastructure, and Ecological Restoration; Design, management, permitting, installation, and monitoring of storm water management practices and wetland and stream restoration projects. public funding; public education; resource agency permitting; preparing cost estimates, specifications, vegetation lists, and bid packages; construction inspection; monitoring; and all other aspects of restoration



Past Performance

Amec Foster Wheeler has successfully managed and completed Green Infrastructure projects as well as other similar complex stormwater capital improvement programs for municipal and utility clients throughout the midwest. We will bring this same level of connected excellence to the District Green Infrastructure Funding Programs.

Following are examples of Amec Foster Wheeler projects requiring related skills:

Amec Foster Wheeler Green Infrastructure Experience Matrix										
Project Experience	Green Roofs	Stormwater Trees	Native Landscaping	Porous Pavement	Constructed Wetlands	Cisterns	Soil Amendments	Rain Gardens	Bioswales	Stream Restoration Integrated SW Management
Carson Skateboard Park and Stream Restoration			X		X					X
Clermon Elementary School Low Impact Development Retrofit		X	X					X	X	X
Currie Barracks LID Stormwater Management Plan			X					X	X	X
Dover Air Force Base Stream Restoration			X							X
Enhanced High Rate Treatment Facility Werk Westbourne MSDGC Green Infrastructure	X		X				X	X		X
McLean Boulevard Fen Porous Pavement				X						
Mill Creek Confluence Restoration at Twin Creek Preserve		X	X		X		X			X
Norwado Phase II Section 55th Street Drainage Improvements			X	X			X	X		X
Runnymede Bioretention and Stormwater Facility			X					X	X	X
Stormwater BMP System Demonstration Project, Elmer Avenue Neighborhood Retrofit, Sun Valley			X					X	X	X
City of Cincinnati Stormwater Management Utility Guerley Road Flood Control Facility		X	X				X	X	X	
Mill Creek Supplemental Environmental Projects - Caldwell Park		X	X		X		X	X	X	
City of Peoria, IL Green Infrastructure Design for CSO Abatement		X	X	X			X	X	X	
Channel and Habitat Restoration Holt Road Site 4			X							X
Lanterns Residential Stormwater Design			X						X	X
Low Impact Development Streetscape Plan			X					X	X	X
Blue highlight indicates Projects included on Experience Attachment A pg. 14										

Carson Skateboard Park and Stream Restoration



Client/Customer:
Greenwood Village

Contact:
Jim Sanderson
6060 S. Quebec Street,
Colorado 80111-4591
303-773-0252

Location:
Greenwood Village, Colorado

Dates/Timing:
2004-2007

Project value:
\$1,800,000

Amec Foster Wheeler value:
\$200,000

Project description

Carson Park is a highly visible urban park adjacent to Greenwood Village City Hall. Wetlands in the drainage way were being lost due to erosion caused by an increase in urban runoff. Greenwood Village proposed to build a skateboard park in Carson Park adjacent to the Gulch's floodplain. The skateboard park was a high priority for the community's youth and business interests. This project provided an opportunity to apply the NUW (Natural Urban Waterway) drainage methods of Amec Foster Wheeler.

Scope of work

- ▶ Design erosion control structures to enhance wetlands in Greenwood Gulch
- ▶ Design a drainage system to protect the skateboard park from high groundwater levels and increased surface runoff
- ▶ Design drainage systems that are sensitive to wetlands and enhance water quality

Project highlights (key service(s) provided)

- ▶ Designed drop structures to control urban runoff, mitigate erosion, and enhance wetlands. Designed perimeter drainage system that intercepts and redirects surface runoff from areas upslope of the skateboard park
- ▶ Designed drainage system to direct rainwater in the skateboard park to a detention pond in a timely manner to control increased runoff, meet water quality standards, and maintain the function of the skateboard park without extraordinary maintenance
- ▶ Designed under-drain system to drain groundwater from beneath the skateboard park and prevent buoyancy pressures from damaging the park's concrete structure as a result of high groundwater conditions
- ▶ Designed a detention pond to help collect rainwater while meeting water quality standards before discharging to Greenwood Gulch

Project Relevance

- ▶ Constructed Wetlands
- ▶ Native Landscaping
- ▶ Integrated Stormwater Management

Key team member(s)

- ▶ Bob McGregor
- ▶ Aaron Murray
- ▶ Tim Axley

Clermont Elementary School Low Impact Development Retrofit



Client/Customer:

Fairfax County DPWES

Contact:

Craig Carinci
10635 West Dr, Fairfax, VA
22030
703-934-2800

Location:

Fairfax County, VA

Dates/Timing:

2007-2009

Project value:

\$2,000,000

Amec Foster Wheeler value:

\$44,000

Project Relevance

- ▶ Native Landscaping
- ▶ Stormwater Trees
- ▶ Bioswales
- ▶ Rain Gardens

Project description

This project was identified in Cameron Run Watershed Management Plan for Fairfax County, Virginia. The elementary school site was constructed before stormwater management requirements and hence was proposed to retrofit using low impact development (LID) techniques such as bioretention and tree box filters. Another goal of the project was to provide educational opportunities through signage describing stormwater features for school students.

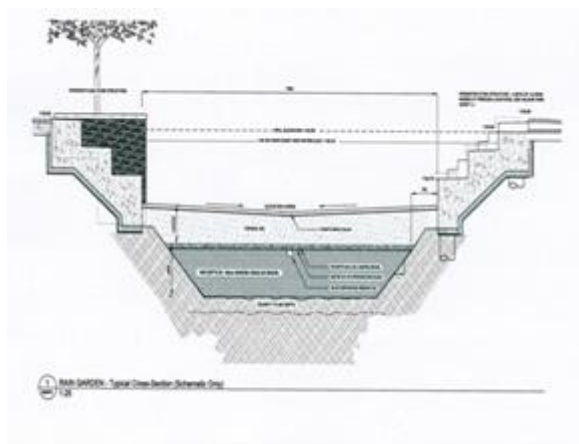
Scope of work

- ▶ Sustainable and green design process
- ▶ Low Impact Development (LID)
- ▶ Public education and outreach
- ▶ Enhance water quality

Project highlights (key service(s) provided)

- ▶ Sustainable layout of Low impact development (LID) retrofits design options.
- ▶ Control and treatment of stormwater runoff from school site.
- ▶ Preparation of construction documents.

Currie Barracks LID Stormwater Management Plan



Project description

The Currie Barracks project is Phase I of the redevelopment of the CFB Calgary lands. The existing site is surrounded by Calgary communities and is serviced by City of Calgary stormwater utilities. Redevelopment of this brownfields site to a mix of high and low density residential and commercial land uses. Strict stormwater management controls were required to meet low discharge targets in the existing downstream storm sewers. Source control facilities were designed to reduce peak storm flows and enhance water quality. Low Impact Development techniques such as infiltration trenches, bio-swales, rain gardens and grass swales were designed throughout the site to meet the discharge requirements. Infiltration of underground storage was also included in the design to further reduce peak flows.

Scope of work

- ▶ Pilot program for LEED Neighbourhood Development (ND) receiving Gold Certification
- ▶ Low Impact Development Best Management Practices to restore and/or maintain natural hydrologic function
- ▶ Restoration of Brownfield site
- ▶ Stormwater controlled at source to meet discharge restrictions on existing downstream infrastructure
- ▶ Impervious areas disconnected from the storm sewer system
- ▶ Pollutant loads treated at source
- ▶ Pre-development drainage divides maintained
- ▶ Preliminary and Detailed Design of LID BMPs
- ▶ Construction Inspection

Project highlights (key service(s) provided)

- ▶ Preliminary and final design of Low Impact Development (LID) features
- ▶ Detailed hydrologic and hydraulic modelling of the LID features and inlet/outlet controls
- ▶ Construction inspection services
- ▶ Optimization of LEED credits for Green Construction and Technology Credit 9
- ▶ Preferred concept plan presented by the City of Calgary at Public Meeting.

Client/Customer:

Canada Lands Company

Contact:

Assad Niazi, Peng, MBA
3951 Trasimene Crescent SW
Calgary, AB T3E 7J6, Canada
+1 403-292-5809

Location:

Calgary, AB

Dates/Timing:

2007-Present

Project value:

\$2,000,000

Amec Foster Wheeler value:

\$600,000

Project Relevance

- ▶ Native Landscaping
- ▶ Rain Gardens
- ▶ Bioswales
- ▶ Integrated Stormwater Management





Dover Air Force Base Stream Restoration

Client/Customer:

Dover AFB

Contact:

Steven Seip
442 13th Street,
Dover, DE 19902
302-677-3000

Location:

Dover Air Force Base DE

Dates/Timing:

2010-2011

Amec Foster Wheeler value:

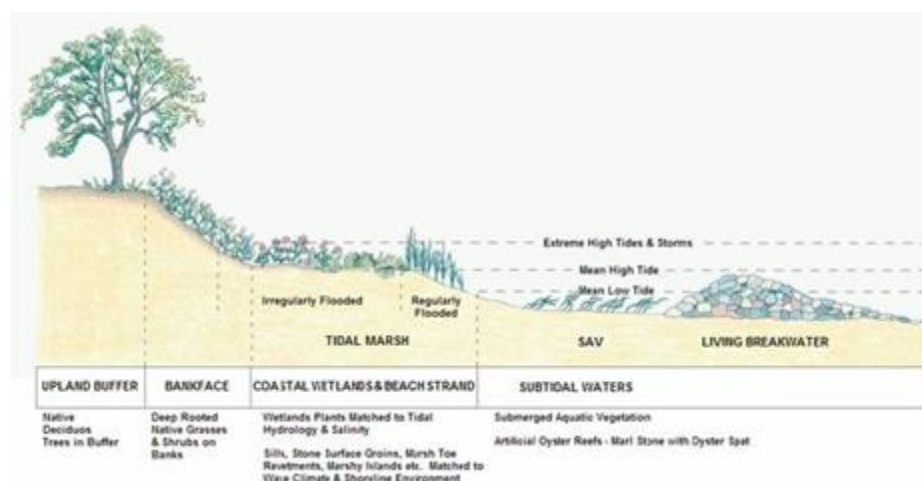
\$600,000

Project Relevance

- ▶ Native Landscaping
- ▶ Stream Restoration

Key team member(s)

- ▶ Jeff Wright – Engineer of Record
- ▶ Matt Lehrer – Lead Engineer
- ▶ Brian Merritt – Peer Review
- ▶ Mohamed Agnaou – Engineer Design
- ▶ Steve Mazza – CAD/Drafting



Project description

The left bank of the St. Jones River is experiencing moderate to severe erosion, threatening and potentially damaging over 13 acres of important Native American and prehistoric cultural resources and a former landfill, as well as adversely impacting the conveyance of stormwater runoff and degrading stormwater quality

Amec Foster Wheeler designed restoration measures along approximately 2,500 feet of the St. Jones River bank, and for stabilization of two stormwater outfalls. The restoration and stabilization design incorporates natural and bioengineered slope stabilization methods, including living shorelines (construction of marshlands), soil lifts with live stakes, and green gabions, as well as the design of riprap energy dissipaters and stabilization for two existing stormwater outfalls.

Scope of work

- ▶ Feasibility study
- ▶ Conceptual Design
- ▶ Modeling
- ▶ Restoration practices-including bank stabilization, riparian corridor revegetation, aquatic habitat enhancements, and engineering improvements

Project highlights (key service(s) provided)

- ▶ Hydrologic and Hydraulic analysis
- ▶ Scour Analysis
- ▶ Riprap Sizing Analysis (HEC-11)
- ▶ Energy Dissipater Design
- ▶ Subsurface Investigation
- ▶ Slope Stability Analysis
- ▶ Ecosystem Assessment
- ▶ Plant Specification
- ▶ Grading Design
- ▶ Erosion and Sediment Control
- ▶ Permitting
- ▶ Construction Oversight
- ▶ Design-Build





Enhanced High Rate Treatment Facility Werk Westbourne MSDGC Green Infrastructure



Project description

The MSDGC Wet Weather Improvement Program is pursuing reduction of the annual overflow volume at CSO #522, located in Green Township, Ohio, through construction of an Enhanced High Rate Treatment Facility (EHRTF) using GI methods, including building enhancements, structures, and landscaping to imitate pre-development site hydrology. A portion of the facility roof will support a fully integrated multi-layer intensive vegetated (green) roof system. Amec Foster Wheeler selected and designed the single-supplier system and coordinated the design with the structural engineer.

A significant aspect included mitigation and permitting for impact to over 1200 feet of Schaible Creek and its tributaries. Complexities included bedrock at the channel bed, structural retaining walls constricting the flow channel, variable flow volumes and velocities impacted by the release rate of the facility, and concurrent design of a replacement interceptor sewer within the creek. Design elements incorporate the use of bank treatments including rock riffles, step pools, rock toe, coir fabric steep slope treatment, and articulated concrete block mat channel reinforcement.

Amec Foster Wheeler team members were responsible for development of plans, specifications, and cost estimates for all aspects of sustainable design, including the bioretention pond green roof, stream mitigation design and USACE 404 and OEPA 401 permitting. Team members spearheaded ongoing coordination with USACE to obtain approval for temporary crossing impacts, stream re-alignment and mitigation including design refinements from concept to construction documents.

Scope of work

- Sustainable Site and Stream Restoration Design
- AutoCAD Drafting
- Specialized Permitting
- Regulatory & Environmental Permitting
- Construction Documents, Cost Estimating, Technical Specifications

Client/Customer:

Metropolitan Sewer District of Greater Cincinnati (MSDGC)

Contact:

Sid Sengupta, PE
Black & Veatch
513-936-5121
senguptaS@bv.bom

Location:

Cincinnati, Ohio

Dates/Timing:

2012 - 2015

Project value:

\$31,000,000

Amec Foster Wheeler value:

\$120,000

Project Relevance

- Green Roof Design
- Rain Garden Design
- Stream Restoration Design
- Integrated Stormwater Mgmt

Key team member(s)

- Jean Ramsey, PE, LEED AP
- Warren High
- Daniel Ketzer, EI

Construction documents were submitted, the project underwent value engineering review, redesign is underway and construction is slated for 2015.

McLean Boulevard Fen Porous Pavement



Client/Customer:

Kane County Division of
Transportation

Contact:

Ken Mielke,
Project Manager
41W011 Burlington Road
St. Charles, Illinois 60175
Phone: 630-406-7172
Fax: 630-885-3139

Location:

South Elgin, IL

Dates/Timing:

2/2012 - 7/2013

Project value:

\$1,146,283

Amec Foster Wheeler value:

\$127,000

Project Relevance

- Porous Pavement Design

Key team member(s)

- Douglas Milligan
- Fred Nazar, PE
- Jake Nardulli, EI

Project description

Construction Management Services for the McLean Fen Adaptive Management Plan in accordance with the Kane County Division of Transportation and the Illinois Department of Transportation requirements. The Project consists of grading, construction of a driveway and porous concrete parking lot, nature trail installation, construction of a boardwalk, seeding, planting, and erosion control to preserve and enhance the natural recharge area associated with the McLean Fen located northwest of the McLean Boulevard and Stearns Road intersection in South Elgin.

Scope of work

- Restoration of Wetlands and Uplands
- Parking lot and walking path construction

Project Highlights

- Restoration of wetlands
 - Removal of invasive materials through herbiciding, handwork removal work, and wetland burning
 - Placement of approx..7 acres of Class 4 & 5 wetland seeding
 - Planting of approx. 30,000 perennial wetland plugs
 - Protection of Wetland Fen throughout duration of construction activities
- Restoration of uplands
 - Removal and clearing of underbrush and non-native vegetation
 - Herbiciding throughout upland areas
 - Seeding of forested areas as well as former farmland with approx. 40 acres of Class 4 & 5 seeds
 - Protection of higher quality oak trees
 - Installation of approx. 230 new trees and shrubs
- Erosion and Sediment Control
- Sign, Bike Rack, and Bench Installations

Mill Creek Confluence Restoration at Twin Creek Preserve



Project description

This project included solicitation of grant funding, design, permitting, and construction of a 30-acre park that supports over 5 acres of wetland, more than 4,000 linear feet of restored stream, floodplain benches, oxbow lakes, Newbury riffles, and planting over 6,000 native trees and shrubs. The project creates high quality pool / riffle / run complexes, increases water quality, increases aquatic habitat, reduces flooding, increases groundwater recharge, provides passive recreation and education, and acts as a seed bank for the rest of the watershed. The project was performed for the Mill Creek Watershed Council of Communities and stakeholders included the Metropolitan Sewer District of Greater Cincinnati, Butler County Water and Sewer, Sharonville, and others. This project is the largest demonstration of its kind in the region, and is successfully functioning and fulfilling all of the intended goals. AMEC was responsible for project identification, concept design, grant application support, design, permitting, construction, and monitoring.

The project was funded in January of 2011 and was performed as a design/build project. Construction occurred concurrent with design and permitting

This project was selected as the "Project of the Year by a Non Profit Group" by the Ohio Stormwater Association and received the "Innovation in Floodplain Management" award from The Ohio Floodplain Management Association.

Scope of work

- ▶ Grant Application & permitting assistance
- ▶ Stream bank restoration & channel design
- ▶ Wetland mitigation & created wetland design
- ▶ HECRAS modeling & stormwater management design
- ▶ Construction services

Client/Customer:

Mill Creek Watershed Council
of Communities

Contact:

Jennifer Eismeier
1223 Jefferson Ave,
Cincinnati, OH 45215
513.563.8800
jeismeier@millcreekwatershed.
org

Location:

Sharonville, Ohio

Dates/Timing:

2011-2012

Project value:

\$2,250,000

Amec Foster Wheeler value:

\$2,250,000 Design Build

Project Relevance

- ▶ Constructed Wetlands
- ▶ Stream Restoration
- ▶ Native Landscaping
- ▶ Stormwater Trees
- ▶ Greenway Trails
- ▶ Public Education

Key team member(s)

- ▶ Warren High
- ▶ Wayne Ingram, PE
- ▶ Danny Ketzer, PE
- ▶ John Mueck

Norwalo Phase II Section II

55th Street Drainage Improvements



Project description

Norwalo Phase II Stormwater Improvement Initiative addressing drainage, flooding, and water quality concerns along almost 4 miles of roadways in the northeast portion of Indianapolis. The residential neighborhood experienced extensive road, yard, basement and garage flooding on a periodic basis and wetland areas and stormwater ponds downstream have been encumbered with increased inundation and water quality degradation.

Preliminary scoping documents included hydrologic analyses of existing watersheds conditions, evaluation of the potential use of GI techniques to provide required water quality control. The team identified the use of permeable pavement, sub-surface storage, and bio-infiltration basins within the project area to reduce peak runoff and function as sustainable residential neighborhood BMPs.

As part of Phase II, the 55th Street Drainage Improvement project addressed 2,000 feet of sustainable storm drainage improvements and pavement resurfacing along an urban residential street. The drainage improvement included installation of an enhanced drainage shoulder using the PaveDrain® Permeable Articulating Concrete Block/Mat product in conjunction with a subsurface stone storage and infiltration gallery as a pilot project application for water quality and reduction of flow to the inundated downstream storm sewer system. The typical proposed section matched the existing roadway width with a two foot pavedrain infiltration shoulder on each side. The overall project included detailed design plans, specifications and bid documents, bidding assistance and recommendation, Amec Foster Wheeler coordinated SBE subconsultant participation and public information and outreach activities, as well as neighborhood information meetings.

Scope of work

- ▶ AutoCAD Drafting
- ▶ Comprehensive Utility & Stakeholder Coordination
- ▶ Detailed Maintenance of Traffic Planning
- ▶ Construction Documents, Cost Estimating, Technical Specifications

Client/Customer:

City of Indianapolis DPW

Contact:

Rachel Wilson, PE, Project Manager
1200 Madison, Suite 200
Indianapolis, IN 46225
(317) 327-2304
Rachel.wilson@indy.gov

Location:

Indianapolis, Indiana

Dates/Timing:

07/2012 – 12/2013

Project value:

\$350,000

Amec Foster Wheeler value:

\$71,500

Project Relevance

- ▶ Green Infrastructure Design
- ▶ Porous Pavement
- ▶ Integrated Stormwater Mgmt

Key team member(s)

- ▶ Jean Ramsey, PE, LEED AP
- ▶ Heather Williams, EI, LEED AP
- ▶ Daniel Ketzer, PE

Runnymede Bioretention and Stormwater Facility



Project description

Runnymede Park is the Town of Herndon's community nature park. It provides recreational opportunities and conservation of 58 acres along Sugarland Run upstream of Chesapeake Bay. In response to an erosion issue at an outfall in Runnymede Park, Amec Foster Wheeler investigated options to alleviate the erosive flows at the outfall without impact to the flora and fauna of the park. A vacant lot owned by the Virginia Department of Transportation (VDOT) is located upstream of the problem area and Amec Foster Wheeler conducted a conceptual study of options for using the site for detention to reduce the flow at the downstream outfall. Based on this conceptual study, VDOT granted the Town use of the site for stormwater management purposes.

The design includes low impact development by incorporating bioretention areas on the site. Instead of a traditional dry pond, a series of bioretention areas or a combination of a small detention area in combination with a bioretention area provide a more innovative approach to improving water quality.

Because of the close proximity to Runnymede Park and residential areas, the bioretention areas also serve as an educational tool for the community and an opportunity to inform the public about alternative approaches to stormwater management and the impact of stormwater runoff on Runnymede Park and the Chesapeake Bay.

Scope of work

- ▶ Stormwater Management Conceptual Design
- ▶ Bioretention Area Design
- ▶ Stormwater Retrofit
- ▶ Public Education and Outreach
- ▶ Outfall Analysis

Project highlights (key service(s) provided)

- ▶ Sustainable and green design process
- ▶ Using Low Impact Development to address erosion in sensitive environmental area
- ▶ Retrofitting to provide water quality treatment for area that was constructed without stormwater controls
- ▶ Design to incorporate public education and outreach component

Client/Customer:

Town of Herndon DPW

Contact:

Zoran Dragacevac
777 Lynn Street,
Herndon, VA 20170

Location:

Herndon, Virginia

Dates/Timing:

04/2011 -11/2011

Project value:

\$367,000

Amec Foster Wheeler value:

\$50,000

Project Relevance

- ▶ Native Landscaping
- ▶ Bioswales
- ▶ Rain Gardens
- ▶ Integrated Stormwater Management



Stormwater BMP System Demonstration Project, Elmer Avenue Neighborhood Retrofit, Sun Valley



Project description

The purpose of this CASQA Award-winning project was to demonstrate the feasibility of installing a comprehensive stormwater BMP system retrofit in an existing neighborhood. Amec Foster Wheeler designed this project in a developed neighborhood in Sun Valley, an area that did not have a storm drain system and historically flooded during even moderate rainfall. In addition to flood control, project objectives included:

- ▶ Improvement of surface water quality
- ▶ Sustainability
- ▶ Water conservation
- ▶ Habitat restoration
- ▶ Enhancement of neighborhood aesthetics, utility, and safety

Amec Foster Wheeler's design utilized a variety of sustainable storm water BMPs, including an infiltration gallery, dry wells, rain gardens, vegetated swales, native plants, drought tolerant plants, and shade trees.

The success of this innovative design was recognized by CASQA with its **2010 Outstanding Storm Water BMP Implementation Award**.

Project highlights (key service(s) provided)

- ▶ Award-winning design of storm water treatment BMPs
- ▶ Sustainable and green design process that reduces flooding
- ▶ Small surface footprint does not negatively impact desired land use
- ▶ Cost-effective alternative to traditional storm sewers.

Client/Customer:

Council for Watershed Health

Contact:

Mike Antos
Research Manager
700 N. Alameda Street
Los Angeles, CA 90012
213-229-9945

Location:

Sun Valley, California

Dates/Timing:

2009-2010

Project value:

\$2,000,000

Amec Foster Wheeler value:

\$300,000

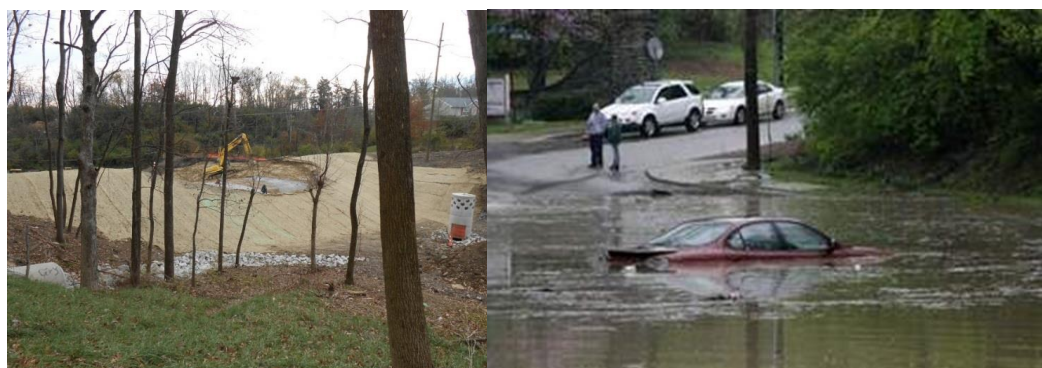
Project Relevance

- ▶ Integrated Stormwater Management
- ▶ Bioswales
- ▶ Rain Gardens
- ▶ Native Landscaping

Key team member(s)

- ▶ Marty Sponberg, PhD, PE, PG
- ▶ Craig Stewart, PG, CEG, CHG
- ▶ Daney Saylor, PE
- ▶ Katherine Howe, PG

Stormwater Management Utility Guerley Road Flood Control Facility



View of dam with spillway under construction

Flood event downstream of the detention basin site on Guerley Road.

Project description

Under an indefinite delivery contract for Green Infrastructure, Amec Foster Wheeler performed planning, design, and construction management services associated with the Guerley Road Detention Basin for the City of Cincinnati Stormwater Management Utility (SMU). The main facility is a 20 foot tall dam that extends over 200 feet across a valley within an intensely urbanized area in Cincinnati and serves to mitigate flooding of the significant thoroughfare and associated safety and quality of life issues.

Guerley Road has long been an area of significant flooding hazard. The Guerley Road area is served entirely by combined sewers and is located along the bottom of a ravine system. Almost all storm events result in runoff exceeding the capacity of the sewer system which causes roadway flooding. The contributing area is approximately 200 acres and the maximum practical detention basin storage capacity was determined to be 13 acre-feet. This constraint made it particularly important to identify and rank the goals and objectives for the project, which were identified as combined sewer system flow control, flood mitigation, and water quality improvement as well as minimizing facility maintenance needs.

Numerous measures to reduce flooding were considered and a retention pond was the selected alternative. SMU teamed with the Metropolitan Sewer District to develop an alternative that would separate stormwater from the combined sewer, retain stormwater to the maximum extent possible, and improve water quality. The design components were daylighting and disconnecting stormwater sewers from several different sources, creating surface drainage and bioretention ponds that would improve water quality, and design a dam that would fit into a valley between an existing park and two housing subdivisions. Key considerations were maintaining recreation, safety, health, no inundation of existing structures, maximizing storage, and aesthetics.

Client/Customer:

City of Cincinnati
Stormwater Management Utility

Contact:

City of Cincinnati
Stormwater Management Utility
Wesley Wimmer
(513)557-7129

Location:

Cincinnati, OH

Dates / timing:

May 3, 2010 - present

Project Relevance

- ▶ Bioswales
- ▶ Native Landscaping
- ▶ Soil Amendments
- ▶ Integrated Stormwater Management
- ▶ Constructed Wetland

Amec Foster Wheeler

personnel:

- ▶ Warren High
- ▶ Daniel Ketzer, PE

The design included the actual dam, spillway, intake structure, keyway, internal sand diaphragm, bioretention ponds, storm sewer separation and daylighting, fences, signage, and utility relocation. An ADA approved trail system was also designed around the detention basin site and connected to an adjacent recreational facility.

Design issues included a large number of utilities located within the footprint of the dam including a gas transmission pipe, 138 kV electric transmission line, an electric distribution line, phone, cable, and a 54 inch combined sewer. Amec Foster Wheeler worked with all the utilities to have them relocated or encased.

The auxiliary overflow spillway maximizes storage utilization prior to large flow release as well as providing extended detention for a small water quality volume. Fencing was incorporated to control access along the area of inundation. Amec Foster Wheeler developed a planting plan that used native vegetation to restrict unauthorized access, screen the project, and to improve water quality.

Amec Foster Wheeler hosted a public participation program that included holding public information meetings in the neighborhood community center, the use of enhanced graphic renderings to show before and after views of the dam, and vegetative screening to reduce visual impacts. The result of the public program was widespread support. During construction, several adjacent property owners objected to the project because it changed the flow of foot traffic in the area by opening up the vegetation for the dam. Amec Foster Wheeler worked with the city and property owners to modify fence locations and the planting of vegetation to satisfy the concerned parties.

Amec Foster Wheeler's design maximized the benefits from the prioritized objectives for the facility while working with SMU staff to minimize anticipated long term maintenance efforts. Amec Foster Wheeler is currently overseeing the construction of this project.





Mill Creek Supplemental Environment Projects – Caldwell Park



Client/Customer:

MSDGC-Cincinnati

Contact:

Wes Wimmer
513.557.7129
WesleyWimmer@cincinnati-oh.gov

Location:

Cincinnati, Ohio

Amec Foster Wheeler value:

\$2,250,000 Design Build

Project Relevance

- ▶ Constructed Wetlands
- ▶ Stream Restoration
- ▶ Native Landscaping
- ▶ Stormwater Trees
- ▶ Greenway Trails
- ▶ Public Education

Key team member(s)

- ▶ Warren High
- ▶ Wayne Ingram, PE
- ▶ Danny Ketzer, PE

Project description

As part of a compilation of supplemental environmental activities in conjunction with the Metropolitan Sewer District of Greater Cincinnati's EPA Consent Decree, Amec Foster Wheeler performed a series of improvements on the Mill Creek, which flows through the center of the City of Cincinnati. A combination of projects was undertaken in the vicinity of Caldwell Park at Seymour Avenue to improve water quality and habitat in the Mill Creek and surrounding riparian corridor. Project components included stream channel and bank stabilization to address channel incision and widespread streambank erosion, riparian habitat restoration, storm water management practices to demonstrate water quality improvement, design and installation of a greenway trail and signage for public information, and demonstration and education of the project benefits. Each of these projects used multiple client-selected contractors.

The project included stormwater BMPs for improved water quality, including bioretention swales along the greenway trail at the top of the stream banks. These bioretention features are designed to capture stormwater runoff from streets and other impervious surfaces and provide infiltration to groundwater. They improve water quality in Mill Creek by intercepting storm water runoff and removing contaminants before the water enters the stream. Construction included excavating the basins; installation geotextile linings and bedding matrix; and planting with a flood tolerant mix of native grasses, sedges and flowering perennials.



Green Infrastructure Design for CSO Abatement

Client/Customer:

City of Peoria

Contact:

Ms. Jane Gerdes, PE
Civil Engineer
City of Peoria Public Works
309-494-8819
jgerdes@peoriagov.org

Location:

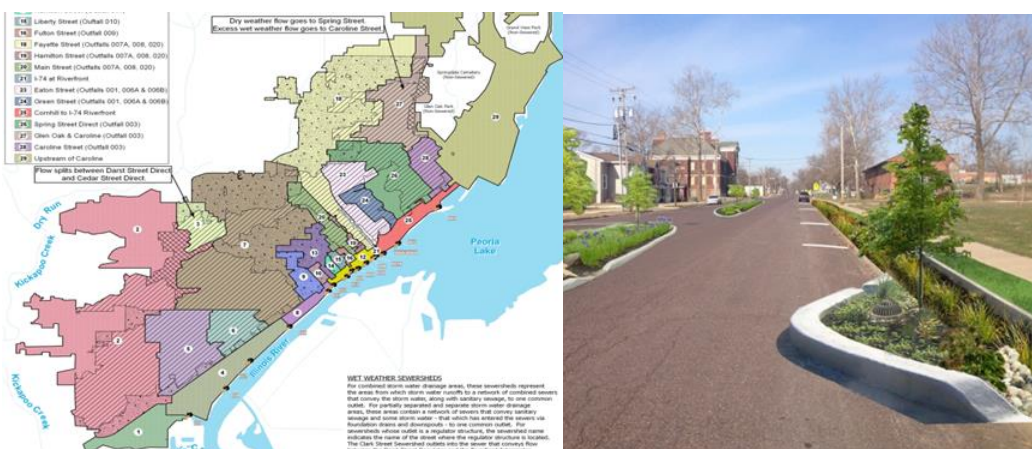
Peoria, IL

Dates / timing:

1986 - present

Project Relevance

- ▶ Porous Pavement
- ▶ Native Landscaping
- ▶ Bioswales
- ▶ Stormwater Trees
- ▶ Rain Gardens
- ▶ Integrated Stormwater Design
- ▶ **Amec Foster Wheeler personnel:**
- ▶ Greg Asbury
- ▶ Jean Ramsey, PE, LEED AP
- ▶ Eric Carlson, PE
- ▶ Greg Myroth, PE
- ▶ Doug Noel, PE
- ▶ Brandon Koltz
- ▶ Heather Williams
- ▶ Matt Faulkner



Krause Avenue Pilot Project Concept Rendering

Project description

Facilities Plan

The City of Peoria retained the services of AMEC Foster Wheeler to prepare a Step 1 Facilities Plan that included design improvements to control discharges from its combined sewer system, which encompasses about 5,300 acres and had 19 overflow points discharging into the Illinois River. AMEC Foster Wheeler assisted the City in successfully petitioning the Illinois Pollution Control Board for an exception to reduce the level of control required, and then designed a combination of improvements to provide cost effective controls. The regulator modifications, controls, and treatment plant improvements were designed jointly with the local Sanitary District's consultants. The improvements included:

- ▶ Sewer separation in eight drainage basins, with construction of either new sanitary or storm sewers to separate the combined flows.
- ▶ Swirl concentrators to remove floatables and heavy solids from overflows to the Illinois River at two locations.
- ▶ Inline storage using a mile long 36 inch and 48 inch large diameter sewer to store excess flows until downstream capacity is available in the interceptor.
- ▶ Regulator modifications, including new locations above the 25 year flood level, installation of gates to control the amount of flow which is discharged to the interceptor sewer, and backflow valves to prevent the river from flowing into the interceptor sewer during flood conditions.
- ▶ Treatment plant improvements including installation of additional pumping facilities and central telemetry facilities.
- ▶ Telemetry including remote monitoring and control units that transmit and receive data from the central station to the sanitary district.

As a result of this project direct bypasses of sewage during floods were eliminated entirely up to a 25-year flood level; overflows during storms were reduced substantially; pollution of the Illinois River was reduced; compliance requirements met; needs for future downtown development addressed; and long-term operation

and maintenance costs in the collection system and at the wastewater treatment plant were minimized.

Long Term Control Plan Development

Amec Foster Wheeler is currently assisting the City of Peoria with ongoing CSO control work. Amec Foster Wheeler has developed a long-term control plan (LTCP), as required by USEPA and IEPA, to abate the number and volume of combined sewer overflows (CSOs) into the Illinois River from 7-9 square miles of the oldest developed areas of the City of Peoria. Development of the LTCP included a review of collection system components and collection system hydraulics; correlation and review of data collected from temporary project instrumentation, local weather, and river conditions; and field activities involving river and collection system sampling.

Components included in the preparation of the LTCP were development of an integrated hydrologic and hydraulic computer model of the combined sewer system; identification and evaluation of CSO abatement alternatives; preparation of a financial capability analysis and listing of funding options; drafting an implementation staging timeframe for abatement options; execution of a community involvement plan and preliminary design engineering for the project.

Services also included extensive meetings, correspondence, and negotiations with City, USEPA and IEPA officials. The entire planning process was conducted with ongoing stakeholder involvement. Stakeholders included various political and economic interests as well as citizen, neighborhood and advocacy groups with informational stakeholder meetings held throughout the process. The completed LTCP was submitted in early spring 2010 and negotiations are ongoing.

LTCP Consent Decree Green Infrastructure Solutions

As Green Infrastructure technologies have emerged as viable, cost effective solutions to municipal CSO problems, Peoria has chosen to implement GI stormwater management as the primary solution to address the City's 160 million gallon annual combined sewer overflow events in its LTCP.

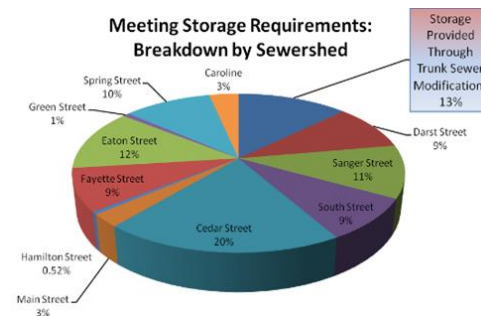
Amec Foster Wheeler team members are working with the City and EPA to finalize a primary Green Infrastructure solution including design and implementation of Green practices within the right-of-way and on publicly owned property across the 8 square mile combined sewer district. The team is working closely with USEPA to ensure compliance with Clean Water Act requirements.

Early Action Project Identification and Pilot Project Design

Amec Foster Wheeler identified several locations within the combined sewershed areas and prepared concept plans and graphics for City Council selection of potential pilot projects. The Krause Avenue Pilot Project design and preparation of bid documents is underway with bidding and construction slated for fall of 2015.

Scope of work

- ▶ Green Infrastructure Alternatives Development and Evaluation
- ▶ GI Early Action Project Identification and Pilot Project Design
- ▶ Public Relations, Education and Outreach
- ▶ CSO System modeling for GI solutions
- ▶ Existing collection system flow monitoring and analysis
- ▶ Refinement and negotiation of the LTCP
- ▶ Implementation Plan Refinement
- ▶ Negotiation with USEPA and IEPA
- ▶ Economic Analysis
- ▶ Project Management



Channel and Habitat Restoration Holt Road Site 4

Project description



This project was part of a multi-year contract to provide assistance to Metro Nashville with their stormwater management program. Several roadway culverts were replaced under Holt Road due to roadway flooding. The existing roadway culvert at this location was replaced with a bottomless CONSPAN structure. The channel was widened at the structure and allowed to naturalize and provide habitat for aquatic life. Additionally, Holt Road is located within the Mill Creek watershed, which is home to the endangered species *Orconectes Shoupi* (Nashville Crayfish). Nashville Crayfish are susceptible to the chemicals in herbicides, so eliminating the need to apply herbicides along the stream bank was beneficial to their environment.

Scope of work

- ▶ Hydrologic/Hydraulic Modeling of Urban Streams
- ▶ Endangered Species Survey and Assessment
- ▶ Environmental Permitting
- ▶ Preliminary and Detailed Design Drawings, Specifications and Cost Estimate
- ▶ Construction Management and Project Close Out

Project highlights (key service(s) provided)

- ▶ Sustainable and green design process
- ▶ Natural channel design techniques
- ▶ Habitat restoration
- ▶ Eliminated need for herbicide application.

Client/Customer:

Metropolitan Nashville Water & Sewer Department

Contact:

1700 3rd Avenue N.
Nashville, TN 37208
615-862-4600

Location:

Nashville, Tennessee

Dates/Timing:

2005-2006

Project value:

\$500,000

Amec Foster Wheeler value:

\$50,000 approx., design was done under an annual T&M contract, not project specific

Project Relevance

- ▶ Stream Restoration
- ▶ Integrated Stormwater Management
- ▶ Native Landscaping

Key team member(s)

- ▶ Byron Hinchey, PM
- ▶ Lorie King, Task Mgr
- ▶ Michael Orr, Design Engineer

Lanterns Residential Stormwater Design



Client/Customer:

Village Homes

Location:

Castle Rock, Colorado

Dates/Timing:

2004-2007

Project value:

\$2,000,000

Project Relevance

- ▶ Native Landscaping
- ▶ Bioswales
- ▶ Integrated Stormwater Management

Key team member(s)

- ▶ Bob McGregor
- ▶ Aaron Murray
- ▶ Tim Axley

Project description

The Lanterns is an 850-acre, 550-unit residential site with extensive open space and an overall development concept of minimizing the disturbance of the natural landforms. The drainageways and detention basins also should appear aesthetically pleasing to enhance the value of the development.

Scope of work

- ▶ Prepare a drainage plan that reduces peak stormwater flows to pre-development levels and complies with the Town of Castle Rock's drainage standards.
- ▶ The drainage plan should also preserve and enhance natural features to the greatest extent practical.
- ▶ Treat stormwater as an asset

Project highlights (key service(s) provided)

- ▶ Utilized 36 check structures to minimize disturbance to existing channel while still providing protection from channel erosion.
- ▶ Designed three detention basins using existing stock pond locations to detain stormwater runoff close to its source, thus reducing flows and the stabilization required in downstream channels.
- ▶ Provided three water quality basins to improve stormwater runoff from site.
- ▶ Designed over 8,000 feet of infiltration swales to allow runoff to infiltrate into the ground water, enhancing the water supply from which the Town draws its water and reducing the size of the detention and conveyance facilities.

Low Impact Development Streetscape Plan



Client/Customer:

City of Calgary

Location:

Calgary, AB

Dates/Timing:

2006-2007

Amec Foster Wheeler value:

\$70,000

Project Relevance

- ▶ Native Landscaping
- ▶ Rain Gardens
- ▶ Bioswales
- ▶ Integrated Stormwater Management

Project description

Amec Foster Wheeler assisted the City of Calgary (Alberta, Canada) in advancing their standards for water quality management and improving water conservation practices. The intent of the Calgary Streetscape low impact development (LID) project was to more closely match a natural water balance by managing precipitation runoff near the source through LID feature implementation and, landscape design. This design philosophy would effectively reduce the transportation of contaminants and suspended sediments to receiving waters and reduce the need for additional irrigation and stormwater management.

Scope of work

- ▶ Sustainable and green design process
- ▶ Development of prototype designs and concept plans for future LID projects in the City of Calgary

Project highlights (key service(s) provided)

- ▶ Selected a suitable demonstration site for LID features.
- ▶ Developed a prototype design which considered potential LID features and landscape design approaches.
- ▶ Generated preliminary design concepts for selected site.
- ▶ Preferred concept plan presented by the City of Calgary at Public Meeting.

Customer Service Approach



Conflicts and Special Challenges Resolved during the Mill Creek Confluence Project

In order to complete the project, a portion of the stream alignment encumbered property owned by Norfolk Southern Railroad. Initially, the railroad denied the request to cross their property. The ensuing negotiations delayed the project, and during the delay, the cost of diesel fuel tripled, further complicating the ability to deliver a successful project.

Leveraging an existing relationship with the Ohio-Kentucky-Indiana Regional Council of Governments, the project team obtained access to the Vice President of Operations for Ohio and successfully negotiated donation of 3 acres of land to be donated by Norfolk Southern in exchange for 35,000 cubic yards of soil compacted to 100 percent to be placed adjacent to the existing tracks for a future rail bed. In addition to obtaining the land required to make the project viable, the money saved by keeping the excess material on site was added back into the project to partially mitigate the higher fuel costs.

The project involved numerous stakeholders with variable priorities and desired design elements and project features. In an attempt to generate enough money to construct the project to the level the stakeholders wanted, the Amec Foster Wheeler team sought out a buyer for the excess excavated material and coordinated the sale of 35,000 cubic yards of soil to GE Aviation for more than \$250,000. This injection of cash made up for the increase in diesel fuel costs and allowed purchase of signature trees, construction of a gravel nature trail, and purchase of materials for a pavilion. .

Another large hurdle was that each stakeholder had different goals and priorities for the project ranging from water quality and habitat, to recreation, to flood control. Amec Foster Wheeler initiated weekly meetings to iron out the differences as the project was being put on the ground.

Qualification Worksheet



**REQUEST FOR QUALIFICATIONS
DISTRICT GREEN INFRASTRUCTURE FUNDING PROGRAMS
GREEN VENDOR PRE-QUALIFICATION LIST
RFQ No. P-2634**

ATTACHMENT A

QUALIFICATIONS WORKSHEET

VENDOR INFORMATION

Vendor Name:

Amec Foster Wheeler Environment & Infrastructure, Inc.

Address:

4927 W. Washington Blvd, Milwaukee, Wisconsin, 53208
8745 W. Higgins Road, Suite 300, Chicago, Illinois 60631

Tax Identification #:

91-1641772

Year Established:

1946

VENDOR's CONTACT PERSON:

Name:

Brandon Koltz

Title:

Senior Project Manager

Telephone #:

414-732-1280

Email:

Brandon.koltz@amecfw.com

RESOURCE INFORMATION

Scale of Work *(check all that apply)*

- ☒ Commercial / Industrial
- ☒ Multifamily
- ☐ Residential

Specialties *(check all that apply)*

- ☒ Design
- ☒ Engineering
- ☐ Construction
- ☐ Downspouts and Gutters
- ☐ Landscaping
- ☐ Maintenance
- ☐ Plumbing

GI Type *(check all that apply)*

- ☒ Green Roofs
- ☒ Stormwater Trees
- ☒ Native Landscaping
- ☒ Porous Pavement
- ☒ Constructed Wetlands
- ☒ Other stream restoration, integrated storm-water management
- ☒ Cisterns
- ☒ Soil Amendments
- ☒ Rain Gardens
- ☒ Bioswales

SWMBE Certified?

- ☐ Yes
- ☒ No

TECHNICAL QUALIFICATIONS AND EXPERIENCE

Project Descriptions

Include one to three (1-3) project descriptions per type of GI that your Vendor has experience with. If your Vendor has experience in only one (1) type of green infrastructure please provide three (3) examples for that type of green infrastructure. Projects must have been completed within the last seven (7) years, or may be ongoing projects that are more than 50% complete.

Fill out this form for each project to demonstrate your Vendor's experience on specific green infrastructure installations.

Type of Green Infrastructure(s): Constructed Wetlands, Native Landscaping, Integrated Stormwater Design

Project Information:

Project Name: Carson Skateboard Park and Stream Restoration

Address/City/State/Zip: 6000 S. Quebec Street, Greenwood Villiage Colorado 80111

Project Owner Information:

Owner's Name: Greenwood Village

Address/City/State/Zip: 6060 S. Quebec Street, Colorado 80111-4591

Phone: 303-773-0252

Email: jsanderson@greenwoodvillage.com

Project Construction Information:

Construction Management Vendor: Amec Foster Wheeler (formerly Amec)

Project Manager Name: Robert McGregor

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: Robert.mcgregor@amecfw.com

Contract information (if applicable): Construction by American Civil Constructors, Construction Engineering by Amec Foster Wheeler (formerly Amec)

Final Contract Amount (contracted and amended if applicable): \$1,800,000 construction, \$200,000 engineering

Construction Start date (contracted): 2007

Construction Start date (actual): 2007

Construction End date (contracted): 2007

Construction End date (actual): 2007

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Stormwater Trees, Native Landscaping, Rain Gardens, Bioswales, Integrated Stormwater Management

Project Information:

Project Name: Clermont Elementary School Low Impact Development Retrofit

Address/City/State/Zip: 5720 Clermont Drive, Alexandria, VA

Project Owner Information:

Owner's Name: Fairfax County Department of Public Works and Environmental Services

Address/City/State/Zip: 10635 West Dr, Fairfax, VA 22030

Phone: 703-934-2800

Email: craig.carinci@fairfaxcounty.gov

Project Construction Information:

Construction Management Vendor: NA

Project Manager Name: Troy Biggs

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: Troy.Biggs@amecfw.com

Contract information (if applicable): NA

Final Contract Amount (contracted and amended if applicable): NA

Construction Start date (contracted): 7/1/2009

Construction Start date (actual): 7/1/2009

Construction End date (contracted): 9/30/2009

Construction End date (actual): 9/30/2009

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Native Landscaping, Rain Gardens, Bioswales, Integrated Stormwater Management

Project Information:

Project Name: Currie Barracks LID

Address/City/State/Zip: 2640 and 3920 Sarcee Road S.W.; 3815 and 4225 Crowchild Trail Street, Calgary, AB Canada

Project Owner Information:

Owner's Name: Canada Lands Company

Address/City/State/Zip: 3951 Trasimene Crescent SW Calgary, AB T3E 7J6, Canada

Phone: + 1 403-292-5809

Email: aniazi@clc.ca

Project Construction Information:

Construction Management Vendor: [Click here to enter text.](#)

Project Manager Name: Kerri Robinson

Project Manager's Vendor history: ☐ currently employed ☒ no longer employed ☐ other [Click here to enter text.](#)

Email: NA

Contract information (if applicable): NA

Final Contract Amount (contracted and amended if applicable): CDN \$600,000

Construction Start date (contracted): NA

Construction Start date (actual): NA

Construction End date (contracted): NA

Construction End date (actual): NA

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Native Landscaping, Stream Restoration

Project Information:

Project Name: Dover Air Force Base Stream Restoration

Address/City/State/Zip: 442 13th Street, Dover, DE 19902

Project Owner Information:

Owner's Name: Dover Air Force Base

Address/City/State/Zip: 442 13th Street, Dover, DE 19902

Phone: 302-677-3000

Email: steven.seip@dover.af.mil

Project Construction Information:

Construction Management Vendor: Amec Foster Wheeler

Project Manager Name: Jeff Wright

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: jeff.wright@amecfw.com

Contract information (if applicable): NA

Final Contract Amount (contracted and amended if applicable): \$600,000

Construction Start date (contracted): 2010-2011

Construction Start date (actual): 2010-2011

Construction End date (contracted): 2010-2011

Construction End date (actual): 2010-2011

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Green Roofs, Native Landscaping, Soil Amendments, Stream Restoration, Integrated Stormwater Management

Project Information:

Project Name: Enhanced High Rate Treatment Facility Werk Westbourne MSDGC Green Infrastructure
Address/City/State/Zip: 1035 Woodrow St. Cincinnati, OH 45204

Project Owner Information:

Owner's Name: MSDGC Subcontract to Black and Veatch (Black and Veatch contact: Sid Sengupta.

Address/City/State/Zip: 1035 Woodrow St. Cincinnati, OH 45204

Phone: 513-936-5121

Email: senguptaS@bv.bom

Project Construction Information:

Construction Management Vendor: NA

Project Manager Name: Jean Ramsey

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: jean.ramsey@amecfw.com

Contract information (if applicable): NA

Final Contract Amount (contracted and amended if applicable): \$Project is currently undergoing value engineering review by MSDGC

Construction Start date (contracted): Delayed by Owner

Construction Start date (actual): TBD

Construction End date (contracted): TBD

Construction End date (actual): TBD

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Porous Pavement

Project Information:

Project Name: McLean Boulevard Fen Porous Pavement

Address/City/State/Zip: South of IL 137 Buckley Road, Village of South Elgin, IL

Project Owner Information:

Owner's Name: Kane County Division of Transportation

Address/City/State/Zip: 41W011 Burlington Road, St. Charles, IL 60175

Phone: 630-406-7172

Email: mielkeken@co.kane.il.us

Project Construction Information:

Construction Management Vendor: Amec Foster Wheeler Environment & Infrastructure, Inc.

Project Manager Name: Fred Nazar, PE

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: Frederick.nazar@amecfw.com

Contract information (if applicable): [Click here to enter text.](#)

Final Contract Amount (contracted and amended if applicable): 127,000

Construction Start date (contracted): 2/1/2012

Construction Start date (actual): 2/1/2012

Construction End date (contracted): 7/31/2013

Construction End date (actual): 7/31/2013

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Native Landscaping, Constructed Wetland, Stream Restoration, Integrated Stormwater Management

Project Information:

Project Name: Mill Creek Confluence Restoration at Twin Creek Preserve

Address/City/State/Zip: I-275 West after Mosteller Road exit, Sharonville, OH

Project Owner Information:

Owner's Name: Mill Creek Watershed Council of Communities

Address/City/State/Zip: 1223 Jefferson Avenue, Cincinnati, OH 45215

Phone: 513-563-8800

Email: jeismeier@millcreekwatershed.org

Project Construction Information:

Construction Management Vendor: Amec Foster Wheeler (formerly Mactec)

Project Manager Name: Warren High

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: warren.high@amecfw.com

Contract information (if applicable): NA

Final Contract Amount (contracted and amended if applicable): 2,250,000

Construction Start date (contracted): 1/1/2011

Construction Start date (actual): 1/1/2011

Construction End date (contracted): 1/1/2012

Construction End date (actual): 1/1/2012

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Native Landscaping, Porous Pavement, Soil Amendments, Rain Gardens, Integrated Stormwater Management

Project Information:

Project Name: Norwladlo Phase II Section II 55th Street Drainage Improvements

Address/City/State/Zip: 55th Street Norwladlo Neighborhood, Indianapolis, IN

Project Owner Information:

Owner's Name: City of Indianapolis DPW

Address/City/State/Zip: 1200 Madison, Suite 200, Indianapolis, IN 46225

Phone: 312-327-2304

Email: Rachel.wilson@indy.gov

Project Construction Information:

Construction Management Vendor: NA

Project Manager Name: Jean Ramsey

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: Jean.Ramsey@amecfw.com

Contract information (if applicable): NA

Final Contract Amount (contracted and amended if applicable): \$71,500

Construction Start date (contracted): 9/3/2013

Construction Start date (actual): 9/3/2013

Construction End date (contracted): 12/30/2013

Construction End date (actual): 11/22/2013

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Type of Green Infrastructure(s): Native Landscaping, RainGardens, Bioswales, Integrated Stormwater Management

Project Information:

Project Name: Runnymede Bioretention and Stormwater Facility

Address/City/State/Zip: 195 Herndon Pkwy, Herndon, VA 20170

Project Owner Information:

Owner's Name: Town of Herndon Department of Public Works

Address/City/State/Zip: 777 Lynn Street, Herndon, VA 20170

Phone: 703-435-6853

Email: Zoran.dragacevac@hendron-va.gov

Project Construction Information:

Construction Management Vendor: NA

Project Manager Name: Troy Biggs

Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)

Email: Troy.Biggs@amecfw.com

Contract information (if applicable): NA

Final Contract Amount (contracted and amended if applicable): \$50,000

Construction Start date (contracted): 4/1/2011

Construction Start date (actual): 4/1/2011

Construction End date (contracted): 11/1/2011

Construction End date (actual): 11/1/2011

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

S

Type of Green Infrastructure(s): Native Landscaping, RainGardens, Bioswales, Integrated Stormwater Management

Project Information:

Project Name: Stormwater BMP System Demonstration Project, Elmer Avenue Neighborhood Retrofit
Address/City/State/Zip: Elmer Avenue Neighborhood, Sun Valley, CA

Project Owner Information:

Owner's Name: Council for Watershed Health, Contact: Mike Antos
Address/City/State/Zip: 700 N. Alameda Street, Los Angeles, CA 90012
Phone: 213-229-9945
Email: info@watershedhealth.org

Project Construction Information:

Construction Management Vendor: NA
Project Manager Name: Marty Spongberg
Project Manager's Vendor history: ☒ currently employed ☐ no longer employed ☐ other [Click here to enter text.](#)
Email: martin.spongberg@amecfw.com
Contract information (if applicable): [Click here to enter text.](#)
Final Contract Amount (contracted and amended if applicable): 300,000

Construction Start date (contracted): 2009-2010
Construction Start date (actual): 2009-2010
Construction End date (contracted): 2009-2010
Construction End date (actual): 2009-2010

Was the project completed on-time? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)
Was the project completed on-budget? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)
Was the project completed to the owner's satisfaction? ☒ Yes ☐ No; Explanation: [Click here to enter text.](#)

Experience

Project #1:

Property Owner's: Greenwood Village

Address/City/State/Zip: 6060 S. Quebec Street, Colorado 80111-4591

Type of green infrastructure installed (check all that apply):

- | | | |
|--|---|---|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input checked="" type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Integrated Stormwater Design |
| <input type="checkbox"/> Porous Pavement | <input type="checkbox"/> Bioswales | |

Project #2:

Property Owner's: Fairfax County DPWES

Address/City/State/Zip: 10635 West Dr, Fairfax VA 22030

Type of green infrastructure installed (check all that apply):

- | | | |
|--|--|---|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input checked="" type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input checked="" type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Integrated Stormwater Design |
| <input type="checkbox"/> Porous Pavement | <input checked="" type="checkbox"/> Bioswales | |

Project #3:

Property Owner's: Canada Lands Company

Address/City/State/Zip: 3951 Trasimene Crescent SW, Calgary, AB T3E7J6, Canada

Type of green infrastructure installed (check all that apply):

- | | | |
|--|---|---|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input checked="" type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Integrated Stormwater Design |
| <input type="checkbox"/> Porous Pavement | <input checked="" type="checkbox"/> Bioswales | |

Project #4:

Property Owner's: Dover AFB

Address/City/State/Zip: 442 13th Street, Dover, DE 19902

Type of green infrastructure installed (check all that apply):

- | | | |
|--|---|---|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Stream Restoration |
| <input type="checkbox"/> Porous Pavement | <input type="checkbox"/> Bioswales | |

Project #5:

Property Owner's: Metropolitan Sewer District of Greater Cincinnati (MSDGC)

Address/City/State/Zip: 1035 Woodrow St. Cincinnati, OH 45204

Type of green infrastructure installed (check all that apply):

- | | |
|--|---|
| <input checked="" type="checkbox"/> Green roofs | <input type="checkbox"/> Bioswales |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Greenways |
| <input checked="" type="checkbox"/> Native Landscaping | <input checked="" type="checkbox"/> Rain Gardens |
| <input type="checkbox"/> Porous Pavement | <input checked="" type="checkbox"/> Other, Stream Restoration, Integrated Stormwater Management |
| <input type="checkbox"/> Rain Barrels | |
| <input type="checkbox"/> Cisterns | |
| <input type="checkbox"/> Stormwater Trees | |

Project #6:**Property Owner's:** Kane County Division of Transportation**Address/City/State/Zip:** 41W011 Burlington Road, St. Charles, IL 60175**Type of green infrastructure installed (check all that apply):**

- | | | |
|---|---|--|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input type="checkbox"/> Rain Gardens |
| <input type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input type="checkbox"/> Other, Click here to enter text |
| <input checked="" type="checkbox"/> Porous Pavement | <input type="checkbox"/> Bioswales | |

Project #7:**Property Owner's:** Mill Creek Watershed Council**Address/City/State/Zip:** 1223 Jefferson Avenue, Cincinnati, OH 45215**Type of green infrastructure installed (check all that apply):**

- | | | |
|--|---|---|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input checked="" type="checkbox"/> Greenways |
| <input checked="" type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Stream Restoration |
| <input type="checkbox"/> Porous Pavement | <input type="checkbox"/> Bioswales | |

Project #8:**Property Owner's:** City of Indianapolis**Address/City/State/Zip:** 1200 Madison, Suite 200, Indianapolis, IN 46225**Type of green infrastructure installed (check all that apply):**

- | | | |
|--|---|--|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input checked="" type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Integrated Storm-water Management |
| <input checked="" type="checkbox"/> Porous Pavement | <input checked="" type="checkbox"/> Bioswales | |

Project #9:**Property Owner's:** Town of Herndon DPW**Address/City/State/Zip:** 777 Lynn Street, Herndon, VA 20170**Type of green infrastructure installed (check all that apply):**

- | | | |
|--|---|--|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input checked="" type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Integrated Storm-water Management |
| <input type="checkbox"/> Porous Pavement | <input checked="" type="checkbox"/> Bioswales | |

Project #10:**Property Owner's:** Council for Watershed Health**Address/City/State/Zip:** 700 N. Alameda Street, Los Angeles, CA 90012**Type of green infrastructure installed (check all that apply):**

- | | | |
|--|---|--|
| <input type="checkbox"/> Green roofs | <input type="checkbox"/> Rain Barrels | <input type="checkbox"/> Greenways |
| <input type="checkbox"/> Constructed wetlands | <input type="checkbox"/> Cisterns | <input checked="" type="checkbox"/> Rain Gardens |
| <input checked="" type="checkbox"/> Native Landscaping | <input type="checkbox"/> Stormwater Trees | <input checked="" type="checkbox"/> Other, Integrated Storm-water Management |
| <input type="checkbox"/> Porous Pavement | <input checked="" type="checkbox"/> Bioswales | |

Resumes





Brandon J. Koltz

Senior Environmental Engineer

Current projects

- ▶ City of Peoria CSO Long Term Control Plan
- ▶ Water Environment Federation "Nutrient Roadmap" Co-author

Core skills

Project Management, water quality assessment, facilities planning, environmental assessment and regulatory compliance, sustainability, stakeholder engagement

Professional summary

Mr Koltz has been a senior project manager, environmental engineer, associate and Vice President within consulting engineering firms since 1978. He brings experience in environmental management, environmental assessment, water resources planning, facilities planning, regulatory compliance, CSO control, wastewater treatment evaluation, surface water nutrient criteria, and remedial investigations and corrective actions. He has served numerous clients in responding to compliance issues, negotiating technical issues for consent decrees, and mitigating potential enforcement actions. Mr Koltz served as adjunct professor at Carthage College, teaching a course in Environmental Management during the January terms in 2014 and 2015.

Representative projects

Combined Sewer Overflow Long Term Control Plans, Peoria CSO Long Term Control Plan, City of Peoria, Peoria, Illinois USA. Project Manager. Development and execution of water quality and collection system monitoring plan, SWMM hydraulic modelling calibrated and validated to reflect antecedent moisture conditions, wastewater treatment system capacity and performance analysis, alternative control measure level of service and costs (including green infrastructure options) and implementation options. Water quality CSO impact analysis was conducted in accordance with a U.S EPA Region 5 approved work plan and Quality Assurance Project Plan (QAPP). Mr Koltz has participated in negotiations with U.S. EPA with respect to a consent decree for completion of CSO control projects. Peoria has chosen to use green infrastructure as the primary control mechanism.

Rock Island CSO Long Term Control Plan/City of Rock Island, Illinois. Project Manager. Preparation of CSO Long Term Control Plan prepared to meet requirements of U.S. EPA consent decree from 2003 - 2008. Assisted City with technical aspects of develop and implement consent decree negotiations and directed the plan development that met a mandated schedule. The plan was delivered within the \$3.5 million budget and included system collection system documentation, monitoring and SWMM model development, calibration and verification, a water quality monitoring in the Rock and Mississippi Rivers for determination of water quality impacts, dye studies to determine plume dispersion study document. All data collection, management and analysis was completed in conformance with a U.S. EPA approved Quality Assurance Project Plan. The overall value of the constructed project is over \$60 million and includes enhanced primary treatment and disinfection discharging through a new outfall through a levee to the Mississippi River, a 260 MGD pump station, remote store treat basins, relief sewers and remote storage facilities.

Education

BA, Biology, Carthage College, Kenosha, WI USA, 1972

MS, Environmental Engineering, University of Iowa, Iowa City, Iowa, USA, 1982

Experience

Amec Foster Wheeler: 2013
(Year started)

Industry: 1978 (Year started)

Continued.

Milwaukee Water Pollution Abatement Program (MWPAP), Program Management Office, Milwaukee Metropolitan Sewerage District, Milwaukee, WI

Member of the Program Management Office of the Milwaukee Water Pollution Abatement Program for 10 years. Staff engineer for the South Shore WWTP Facilities Plan. Provided the water quality analysis for the CSO Facilities Plan, assisted with Jones Island outfall relocation evaluation, environmental assessment of the South Shore WWTP facilities plan element and served as team leader of the Environmental Assessment portion of the Inline Storage Facilities Plan. Managed Site Specific Analysis to site a wastewater sludge monofill. Participated in update of Solids Handling Facilities Plan. Prepared plans of operation interfacing with MMSD operations and maintenance staff for start-up implementation (Facilities Delivery) for all EPA grant funded projects including inline storage system. The overall value of the MWPAP was \$2.8 billion. Mr. Koltz subsequently managed the Environmental Assessment portions including a water quality improvement update for the 2010 MMSD Facilities Plan (1998 – 2002) and participated in the strategic planning portion of the MMSD 2020 Facilities Plan (2004-2009). The 2020 Facilities Plan identified facilities, programs, operations and policies on a watershed basis to achieve water quality objectives.

Professional Society Participation

- ▶ Participant in the Wet Weather Work Group of the Water Environment Federation.
- ▶ Participant in the Water Environment Federation Community of Practice for Compounds of Emerging Concern; authored a white paper regarding source control of these substances.
- ▶ Member Water Environment Federation Government Affairs, Stormwater, Industrial, and Sustainability Committees
- ▶ Member Water Environment Federation Nutrient Issues Workgroup. Co-author of Water Quality Impacts Section of Technical Submission to EPA: Removal of Nutrients with Currently Available Secondary Treatment Technologies provided to U.S. EPA during review of the NRDC petition to incorporate nutrient removal into the definition of secondary treatment. Coauthor “Nutrient Roadmap” scheduled for publication 2nd quarter 2015.
- ▶ Member Water Environment Federation, Central States, Wisconsin Section (past chairman), and Indiana Water Environment Associations Government Affairs Committees
- ▶ Trustee for Central States Water Environment Association Wisconsin Section
- ▶ Past Chairman Environmental Engineering in the Food Processing Industry Conference (2001) and member of the steering committee until 2001 - 2006.
- ▶ Past Board Member Chicago-Milwaukee Chapter Project Management Institute

Publications and presentations

Storm Water Permitting for Industry,” Central States Pollution Control Association/Federation of Environmental Technologists Seminar on Storm Water Regulations, April 1991.

“Preparation of Storm Water Pollution Prevention Plans” Engineering Foundation Conference on Energy and Environmental Engineering in the Food Processing Industry, March 1993.

“Pollutant Reduction for the Milwaukee Water Pollution Abatement Program”, Indiana Water Environment Association Annual Conference, November 2003.

“Determining Water Quality Impacts of CSO on the Mississippi River using Full Factorial Analysis”, WEFTEC 2006.

“Nutrient Criteria: Current Status for the Central States, TMDL Development and New Tools for Nutrient Reduction Evaluation” Central States Water Environment Association Annual Conference, May 2012

“Surface Water Phosphorus Criteria: The Wisconsin Experience – Development, Permitting, Compliance Options, and Initial Permitting Experience” Indiana Water Environment Association “All About Watersheds: a Permittee’s Perspective” Seminar, September, 2012

“Sustainability Issues for Wastewater Treatment Plants”, Indiana Water Environment Association Annual Conference, November, 2013



Andrew Reese, PE, D. WRE, LEED-AP

Water Practice Lead – Americas

- ▶ Atlanta, GA Green Infrastructure – assistance in development of GI policy, design of greens street, ordinance, criteria manuals, and mixed wastewater/stormwater funding policies and approaches
- ▶ Nashville Green Infrastructure – comprehensive policy, infill analysis, criteria development, incentives, stormwater utility rate structure modifications
- ▶ Peoria, IL CSO – assistance in development of GI approach to overflow abatement through consideration of high infiltration rate injection approach and street ROW bio-swale approaches

Core skills

All facets of comprehensive stormwater management, green infrastructure, and related including policy, design, technical analysis, funding and organizational effectiveness.

Professional summary

Andrew J. Reese has over 35 years experience in a wide variety of stormwater management, water resources, hydraulic and hydrologic engineering research and management roles. Mr. Reese is a recognized national leader in the development of local stormwater programs, LID design, green infrastructure, and financing studies for local government including participating in and managing the development of over 25 stormwater utilities. He also has extensive experience in channel stability assessment and remediation having served with the Corps of Engineers Waterways Experiment Station in the development of stable stream assessment tools and bank protection design criteria. His responsibilities have included management of large and complex municipal stormwater program developments, hydraulic engineering research, teaching at Vanderbilt University, conducting short courses nationally on stormwater management, performing water quality studies and regulatory compliance, serving as an instructor for Corps of Engineers training in computer modeling, channel design, spillway design and other subjects, performing financial studies for development of stormwater utilities, developing ordinances and regulations, facilitating discussions, developing and executing public awareness programs, software development, and computer modeling and design. He is also a popular writer, speaker and meeting facilitator having delivered a number of keynote speeches across the United States, and having facilitated more than 25 citizen groups on various subjects

Representative projects

Atlanta Regional Commission, GA. Project Manager and Principal Investigator in the development of a partially state funded (Sec. 319 grant) statewide stormwater manual (<http://www.georgiastormwater.com/>). A multi-city and county project team made up of the leading cities and counties in the state joined together in series of over 20 meetings to develop statewide policy guidance, technical approaches to LID-related BMP design and application, stormwater quantity design and regional applications. Mr. Reese led the team through a logical roadmap approach to development of the various parts of the over 500 page manual. The manual and its approach has become a national model imitated by several locations including the DFW area, Nashville and Wichita, KS.

Stormwater Design Criteria Manual, Wichita, KS. Technical Director. Served as technical director in the development of a stormwater design criteria manual for the City of Wichita, KS. Key responsibilities included citizen technical meetings,

Education

Master of Science, Business Administration, Boston University, 1980

Master of Science, Hydraulic Engineering, Colorado State University, 1977

Bachelor of Science in Civil Engineering, Cornell University, 1975

Professional qualifications/registration(s)

Professional Engineer, OH, PE59783, 2012

Professional Engineer, TN, 018516, 1986

Professional Engineer, CO, 17749

Professional Engineer, MS, 8965

Professional Engineer, NC, 15571

Professional Engineer, GA, PE023433, 1997

Professional Engineer, TX, 112428

Certifications and training

LEED Accredited

Experience

Amec Foster Wheeler: 1984 (Year started)

Industry: 1981 (Year started)

Memberships/affiliations

Water Environment Federation

Continued.

development of localized rainfall and hydrology approach, and direction and review of technical content.

iSWM Program, North Central Texas Council of Governments – Dallas-Fort Worth, TX. Project Director for the development, and subsequent modification of the iSWM program for the greater DFW metroplex (<http://iswm.nctcog.org/>). Efforts included technical leadership, development of design standards, development of the concept for the new web-based approach to serving data and information, directed policy development, and review and input on all aspects of the design details.

Fayetteville, AR. Project Senior Principal. Served as project senior principal in the development of a Green Infrastructure/LID manual and process for the city. The manual integrated several LID/GI methods into a coherent package of design approach options suitable to the local situation.

Metro Water Services, Nashville, TN. Project Director in the development of a green infrastructure master plan and associated products. The plan includes: continuous simulation modeling to establish volume-based BMP design standards, assessment of the ability of trees and green roofs to treat stormwater and remove runoff volume through complex GIS analysis, assessment of the impacts of green infrastructure and LID in downtown Nashville, development of preliminary designs for ten green infrastructure projects including green roofs, cisterns, bioretention areas, porous pavement, and tree planter boxes, development of an incentives program for the use of green infrastructure, and various policy issues.

Philadelphia Water Department, PA: Andy Reese led efforts to assist the PWD in assessing its current stormwater/Green Infrastructure program and leading staff and citizens through a process that resulted in significant changes and improvements in both the perceived equity of its stormwater user fees and the overall effectiveness of its stormwater and Green Infrastructure programs. Efforts included:

- ▶ User fee, rate payer, and credit application analysis and tool development
- ▶ Strategic and tactical planning with staff
- ▶ Complex financial and economic analysis of scenario impacts on various classes of business and residential land uses
- ▶ Development of “horizon study” of types of incentives and applicability to current and future PWD Green Infrastructure programs
- ▶ Assessment of various credit approaches tied to Green Infrastructure objectives, customer attractiveness, and financial impacts
- ▶ Development and facilitation of a multi-meeting stakeholder process
- ▶ Development of policy documents, informational pieces, public outreach execution and support, and comprehensive report

Stormwater Program Assessment and Action Plan, Knox County, TN – stormwater program assessment and action plan development, master planning, ordinance development, stormwater maintenance program assessment, and citizen group facilitation. Additional efforts included leading the County citizen’s group through a process of developing and adopting a stormwater quality integrated development approach that incorporated site design credits, stormwater controls, Better Site Design and other concepts. Provided input and technical quality assurance in the design of channel improvements and modeling for several creeks experiencing flooding.

Department of Engineering; Charlotte, NC. Project Manager in the planning, design and development of a large section of bio-engineering and toe stone combination to protect caving banks and correct stream instability for a major stream in Charlotte, NC. Efforts included coordination with the neighborhood and city staff, engineering analysis and review and management of the design process.

US Army Corps of Engineers, Waterways Experiment Station; Vicksburg, MS. Project Engineer in the development and publication of a Corps wide stream stabilization guidance document and flood control channel design document. Efforts included traveling to over twenty-five states and working with other Corps of Engineers experts in the assessment of stream stabilization problems and solutions. Efforts also led to the development of several hybrid approaches to assessing stream stability and stable channel design.



Gregory Asbury, MS

Project Principal

Current projects

- ▶ Peoria CSO LTCP
- ▶ Peoria Storm Water Utility Master Services

Core skills

Water and infrastructure planning; CSO abatement; Environmental impact analysis and compliance; Project management; Public outreach

Professional summary

Mr. Asbury has over three decades managing engineering and environmental projects involving water, wastewater, and hazardous materials. He has successfully negotiated settlements with federal and state authorities, testified at administrative and civil proceedings, and represented his clients at public meetings and hearings.

Office Manager and Vice President. Full operating authority and overall profit and loss responsibility for Amec Foster Wheeler's Peoria office of more than 30 professional personnel. He also provides technical oversight and peer review of contracts and technical documents provided to clients of the Peoria office. Mr. Asbury directs project scoping and negotiation in support of Peoria's senior client managers.

Representative projects

Project Scientist and Project Manager, MMSD Facilities Plan, Milwaukee, Wisconsin. Provided technical support for the environmental assessment of the MMSD's Master Facilities Plan prepared as part of the Water Pollution Abatement Program. Analysis of alternative impacts and implantation options were included in the development of the Master Facilities Plan. The Environmental Impact Statement prepared by US EPA Region 5 was also reviewed. Expert testimony was provided for implementation features of the South Shore WWTP under the direction of MMSD legal managers.

Program Director: City of Peoria Combined Sewer Overflow (CSO) Long-Term Control Plan Development, Peoria, Illinois. Development of long-term control plan (LTCP) to abate the number and volume of combined sewer overflows (CSOs) into Illinois River from 7-9 square miles of oldest developed areas of Peoria. Amec Foster Wheeler identified existing options, developed financing options, constructed timeframe / staging, provided a community involvement component and design engineering, and provided construction oversight. Responsible for principal-level relationship with client, public and regulatory agencies; developed and executed overall strategy for CSO abatement and represented that strategy to stakeholders.

Project Manager: Samuels Recycling Company, PCB Remediation of Industrial byproducts and Adjacent Properties, Madison, Wisconsin. Managed technical and client aspects of PCB investigation and remediation of industrial residues resulting from metal recycling operation. Adjacent properties were also remediated from transport of contaminated sediments into wetlands located adjacent to industrial activity. Wisconsin DNR oversight was provided during all phases of work plan development and implementation. Public meetings were required and expert testimony was provided in support of client's program to remediate PCBs.

Education

Master of Science,
Environmental Biology, Ball
State University, 1981

Bachelor of Arts, Zoology,
DePauw University, 1976

Experience

Amec Foster Wheeler: 1995

Industry: 1978

Continued.

Project Manager: Industrial Client, Numerous Site Investigations and Remedial Measures, Janesville, Madison, Portage, Eau Claire, and Green Bay, WI. Scoped and directed all phases of site investigation, design and clean-up at numerous facilities of an industrial client. These facilities were located within Southern, Central, Lake Michigan and Northern Districts of Wisconsin DNR. Projects involved UST spill response, waste site management and clean-up conducted under appropriate state authority. Risk assessments and negotiated clean-up levels were established on a site-to-site basis.

Principal: City of LaSalle Water Treatment Plant Design / Build and Drinking Water Improvements, LaSalle, Illinois. Design / build services for upgrades and expansion to municipal water treatment plant from 3.21 MGD to 4.82 MGD, to improve treatment system capability, to remove manganese from water in compliance with IEPA acceptable levels, and to remove carbon dioxide gas from raw water prior to processing. Provided project planning services and conducted treatability assessment, which included sampling of both raw and finished, implementing and operating pilot scale system, compiling sampling data, summarizing findings and making recommendations. Responsible for review of project approach and strategy; completed design and design-related studies and gained IEPA approval for construction.

Project Manager: Waste Management, Remedial Investigation, Feasibility Study, Design and Construction, Hagen Farm, Stoughton, WI. Managed all phases of landfill investigation engineering analysis, design and construction. Project involved risk assessments for soil, air, surface water and groundwater pathways, including analysis of alternative risk-based clean-up levels. Site is located near Stoughton, WI, and is in an area typified by agricultural land use and onsite water supply wells. This multi-year project involved onsite pump testing to establish groundwater control design parameters. The final remedy included elements of waste consolidation, landfill cover construction and groundwater pumping and treatment.

Principal: CONFIDENTIAL CLIENT, Wastewater Treatment Improvements Design / Build and Project Management Mossville, Illinois. Design-build and project management services for multiple upgrades for the wastewater treatment system and operation and maintenance services to meet and maintain a superior performance level. Included conceptual layout, preliminary engineering, final design, permitting coordination, assistance with capital budgeting, equipment ordering, and work scheduling and sequencing for the upgrade of this industrial wastewater facility. Responsible as Principal for overall budget, schedule and client satisfaction; with successful execution saving the client several million dollars; created a positive cash flow on an environmental project.

Project Manager: Muskego Landfill RI/FS, Muskego, WI- Managed all aspects of Work Plan development for the investigation and remediation of a closed landfill. The landfill is located in a complex geologic setting involving glacial and lacustrine deposits, and is near multiple sources of contamination from industrial and municipal sources. Contaminants included heavy metals and solvents. Contaminant transport modelling was needed to distinguish source impacts and phase the design and construction of remedial measures to avoid impacting local water supply wells.

Principal: Dynegy Midwest Generation, Inc. Section 316(b) Environmental and Engineering Services, Various State Locations, Illinois. Environmental and engineering services to support compliance with new 316(b) rules for Illinois generating stations. Developed PICs for three generating stations; currently implementing impingement sampling programs. Additional work included S.122.21(r) studies, agency coordination, aquatic biological data reviews and assessments, restoration analyses and technological assessments. Responsible for health and safety planning and execution, and quality assurance of field phase of the sampling and analysis program; ensured availability and assignment of qualified and trained staff, health and safety and field equipment.



Jean M. Ramsey, PE, LEED AP BD+C

Water Resources Branch Manager

Current projects

- ▶ Peoria, Illinois Combined Sewer Overflow (CSO) Long Term Control Plan Implementation
- ▶ Monroe County, Indiana Long Range Storm Water Improvement Plan
- ▶ City of Atlanta, Georgia Permeable Streets for CSO Control
- ▶ WWEH RT

Core skills

Green Infrastructure Design, Alignment planning, Sewer detailed design, Utility and stakeholder coordination, Specialized permitting, Regulatory and environmental permitting, Construction documents, cost estimating, technical specifications

Professional summary

Ms. Ramsey has been involved with procurement, planning, and design of a wide range of civil engineering projects for more than 24 years. She was born and raised in the Milwaukee area, and is a 1985 graduate of New Berlin West High School. Her background includes all aspects of public and private utility and infrastructure design, construction inspection, site evaluation and master planning, storm water management, sustainable sites and green infrastructure master planning and design, project management, and quality assurance review. She has designed public street and highway improvements, water distribution systems, wastewater collection systems, sanitary lift stations, and commercial, educational, and health care facilities and has supervised engineering design, construction materials testing, and construction activities for projects throughout the Midwest. She is familiar with obtaining site approvals and utility permits at the local and state levels and has secured grant and loan funding for projects from various state and federal sources. She is proficient coordinating with architects and contractors to meet specialized requirements of various types of buildings including Leadership in Energy and Environmental Design (LEED) certification.

Representative projects

Master Service Agreement, Metropolitan Sewer District of Greater Cincinnati (MSDGC), Cincinnati, Ohio/USA. Project manager responsible for integrating green infrastructure measures associated with design and construction of an Enhanced High Rate Treatment Facility within the MSDGC Combined Sewer District at Overflow #522. Project required low-impact sustainable storm water management design for the 7-acre site, along with design and permitting for mitigation of more than 1,000 feet of Schaible Creek disturbed by the facility development. Coordination with multiple team members and specialty disciplines was essential to ensure disruption to the natural hydrologic regime was limited and flows introduced to the creek by the new facility did not alter the existing natural resources and habitat.

Long Term Control Plan Consent Decree Green Infrastructure Solution, City of Peoria, Peoria, Illinois/USA. Development of a primary green infrastructure solution to eliminate Peoria's 160-million-gallon annual combined sewer overflow events. Solutions include design and implementation of green practices within the right-of-way and on publicly-owned property across the eight-square-mile combined sewer district. The team is working with U.S. Environmental Protection Agency to ensure compliance with Clean Water Act requirements.

Education

BS, Civil Engineering, Michigan Technological University, 1989

Professional qualifications/registration(s)

Professional Engineer, Ohio No. E-63611, 1996

Professional Engineer, Michigan No. 39132, 1993

Professional Engineer, Indiana No. PE10504962, 2004

U.S. Green Building Council (USGBC) LEED Building Design & Construction (BD&C) Accredited Professional, 2009

Experience

Amec Foster Wheeler: 2012 (Year started)

Industry: 1989 (Year started)

Memberships/affiliations

American Society of Civil Engineers
Engineers without Borders
USGBC
White River Alliance Board of Directors

Continued.

Fort Wayne On-call Green Infrastructure Services, City of Fort Wayne, Fort Wayne, Indiana/USA. Project manager coordinating green infrastructure feasibility study and design services on a project-by-project basis under an on-call services agreement with the City of Fort Wayne. This includes assigning appropriate staff, evaluating traditional and green alternatives, concept-to-construction document level design, and contract coordination.

Southeast Atlanta Green Infrastructure Initiative, Phase 1 – Permeable Pavers, City of Atlanta, Atlanta, Georgia. Water Resources Engineer. Supporting the Design/Build team providing green infrastructure improvements for three neighborhoods located in the Southeast Atlanta. The project consists of installing approximately 867,500 square feet of permeable pavers and subsurface storage on streets ranging from flat to 20 percent grade within the three neighborhoods. In order to optimize the storage provided, the subsurface storage was segregated into stepped storage cells and methodology for modeling was developed using XPSWMM.

North Street Reconstruction and Integrated Storm Water Management, City of Lafayette, Lafayette, Indiana/USA. Project manager for historic brick street improvements using integrated storm water management practices to minimize short- and long-term infrastructure costs while creating an aesthetically-pleasing urban greenway using functional integrated storm water management practices. The 2,700-linear-foot project included replacing approximately 11,000 square yards of existing impervious brick roadway surface with permeable pavers and subsurface storm water storage and infiltration. Other elements included deconstruction and material salvage, street surface reconstruction, new sidewalk and Americans with Disabilities Act (ADA) ramps, replacing existing sewer laterals and existing water services, and downspout disconnection. The purpose of the design was to minimize wet weather flows to the combined sewer system. Detention and treatment of post-development runoff was achieved using pervious concrete and permeable paver systems along with curb turnouts, sidewalk runnels, and distributed subsurface stone storage and infiltration. The integrated system has the potential to prevent up to 80 percent of the project area's annual storm water runoff from entering the combined sewer system, providing additional capacity within the system downstream of North Street and reducing overflow events into the Wabash River. Deliverables included complete bid documents, maintenance of traffic plans, engineer's estimate, and recommendation of award.

55th Street Drainage and Water Quality Improvements, City of Indianapolis, Indianapolis, Indiana/USA. Project manager for developing detailed design plans, specifications, and bid documents for 2,000 feet of sustainable storm drainage improvements and pavement resurfacing along an urban residential portion of 55th Street in Indianapolis within the combined sewer district. The drainage improvement portion of the project included installing an enhanced drainage shoulder using the PaveDrain Permeable Articulating Concrete Block / Mat product in conjunction with a subsurface stone storage and infiltration gallery as a pilot project application for water quality and reduction in flow to the combined sewer system.

Reservoir Pollution Reduction, City of Columbus, Columbus, Ohio/USA. Project manager. Oversaw preparation of a feasibility analysis, project prioritization, cost estimating, and development of construction documents for implementing green infrastructure best management practices on city-owned property to improve and protect water quality of the three drinking water reservoirs in Columbus. The \$4.5 million project was funded through the American Recovery and Reinvestment Act of 2009.

Central Greens Boulevard CSO Storm Water Management, City of Indianapolis, Indianapolis, Indiana. Project manager for developing construction documents for a public boulevard and related sanitary sewer, water, gas and storm water utilities built by the city as part of a mixed-use redevelopment project. Responsible for design of an integrated storm water management system incorporating pervious concrete, permeable pavers, storm water planters, and a boulevard storm water swale within the public right-of-way to collect, convey and infiltrate adjacent runoff. The integrated system eliminated discharge to the combined sewer for 90% of annual storm events.

Bond Avenue and Trowbridge Street Reconstruction, City of Grand Rapids, Grand Rapids, Michigan/USA. Project manager. Provided detailed design, design supervision, and project coordination for complete reconstruction of 2,000 feet of city street including sanitary sewer, water main, storm sewer, related street lighting; telecommunications, gas main, engineered retaining wall and streetscape work associated with an urban renewal project comprised of two residential high rise condominium buildings and adjacent retail. The project required significant coordination of utility conflicts and permitting in a historic urban corridor containing brick arch sewer, wooden water main. Scheduling was critical and was driven by the related urban renewal project.



Heather N. Williams, EI, LEED-AP

Senior Project Manager

Current projects

- ▶ Louisville MSD Map Modernization
- ▶ Muddy Fork Conservation District
- ▶ SD1 Stormwater Utility Review
- ▶ Fort Wayne Riverfront Development Project
- ▶ Monroe County Long Range Drainage Plan Study

Core skills

Alignment planning, Utility and stakeholder coordination, specialized permitting, construction documents, cost estimating, technical specifications

Professional summary

Ms. Williams has 10 years of professional environmental consulting experience. She has played a key leadership role in developing a Municipal Sustainable Infrastructure Initiative and Program for the City of Indianapolis. Ms. Williams has been pivotal in policy development, public education and outreach (internal city staff, external design community, schools and general public), technical design standard creation, and overall program implementation. Program implementation involves combining and evaluating several municipal wet weather programs (National Pollutant Discharge Elimination System [NPDES] storm water permit, long term control plan [LTCP], GI master plan, and capital improvement projects, etc.). She has a unique set of technical skills, passion, and energy that enables her to communicate, collaborate, and coordinate with City officials, local environmental groups, design community, and others to foster and drive change at many levels. She has planned, organized, and implemented several green infrastructure public information sessions.

Representative projects

Fort Wayne Riverfront Study, City of Fort Wayne, Fort Wayne, IN. Project Manager. Engineering services for the Riverfront Study in Fort Wayne, IN, which will be the first comprehensive look at enhancing the use of the city's rivers; it is intended to provide the road map to world class investment. Specifically, AMEC Foster Wheeler prepared a Utility Inventory Analysis and Green Infrastructure Analysis for the Riverfront Development Study Area. The Utility Inventory Analysis was completed to provide technical data, outline the potential opportunities and constraints, and to inform and steer the planning team's design. Once the preliminary design was completed, Amec Foster Wheeler completed preliminary utility removal/replacement/relocation cost for the Riverfront Study Area. In addition, a Green Infrastructure Stormwater evaluation was completed for the Riverfront Study Area. Green Street design and specifications were incorporated into the overall Master plan and preliminary water quality volume calculations were completed.

Municipal Green Infrastructure Integration, City of Fort Wayne, Fort Wayne, Indiana/USA. Project manager. The City of Fort Wayne is evaluating several departments and programs NPDES storm water, LTCP, parks, transportation, etc.) for integration of green infrastructure. Amec Foster Wheeler is working with a team of consultants on this project focused on quantifying the environmental, social, and economic benefits of integrating green infrastructure into LTCP and other city programs. A comprehensive incentive and policy review is being completed to determine how green infrastructure can be integrated into private and public projects.

Education

BS Civil Engineering, Purdue University, West Lafayette, Indiana, 2003

Professional qualifications/registration(s)

Engineer in Training (EIT), Indiana, ET30810201, 2008

Leadership in Energy and Environmental Design (LEED AP), USGBC, 2009

Experience

Amec Foster Wheeler: 2006 (Year started)

Industry: 2003 (Year started)

Memberships/affiliations

United States Green Building Council

Green Roofs for Healthy Cities
Indiana Water and Environment Association

Upper White River Watershed Alliance BMP Technical Committee

Indianapolis Chapter-American Society of Civil Engineers-Pilot Rain Garden Program Technical Committee

Continued.

IndyRezone City of Indianapolis Department of Metropolitan Development, Indianapolis, Indiana/USA. Project manager. The City of Indianapolis selected Amec Foster Wheeler to manage and implement the Indy Rezone Project with funding from a \$1.1M U.S. Department of Housing and Urban Development (HUD) Community Challenge Planning Grant. The three-year project will update ordinances, regulations, and design practices at a county-wide level, nuanced with neighborhood-specific approaches that improve sustainability and livability while providing a foundation for vibrant communities. The Indy Rezone work consisted of a dual-track approach: 1) review of development regulations from a county-wide perspective, and 2) review zoning and building regulations from a localized, neighborhood level using three consecutive prototype areas to address their situation-specific issues. There was extensive public education and outreach and more than 100 neighborhood meetings and workshops.

Storm Water Green Infrastructure Design Standards Update, City of Fort Wayne, Fort Wayne, Indiana/USA. Project manager. The project includes creating a Green Infrastructure Storm Water Manual, internal and external training, creation and interpretation of an ordinance, policy, incentive checklist, and a complete review and update to the City of Fort Wayne's storm water design manual.

NPDES Storm Water Permit Management and Compliance, City of Indianapolis, Indianapolis, Indiana/USA. Project manager. Assisted the city with management and implementation of its NPDES storm water permit. This involved extensive coordination with the Department of Public Works, the Department of Metropolitan Development, the Parks Department, Marion County Soil and Water Conservation District, University of Indianapolis, Butler University, Marian College, Indiana University Purdue University at Indianapolis, and local watershed groups for annual reporting, staff training, and implementation of permit requirements.

Storm Water Green Infrastructure Design Standards Update and Ordinance, Policy, Incentive Review and Update, Metro Water Services Nashville, Nashville, Tennessee/USA. Project lead and meeting facilitator for completing the U.S. Environmental Protection Agency (USEPA) Water Quality Scorecard for the City of Nashville. The USEPA Water Quality Scorecard is divided into 5 primary categories with 21 main topic questions addressing possible approaches, design specifications, or documentation to support low-impact development or green infrastructure.

Municipal Sustainability Integration, City of Indianapolis, Indianapolis, Indiana/USA. Project manager. Assisted and played a key leadership and facilitator role to the City of Indianapolis Office of Sustainability, Department of Public Works-Engineering, and Department of Metropolitan Development in developing the Sustainable Infrastructure Program. This involves extensive coordination among multiple city departments, programs, contractors, neighborhood groups, watershed organization, and nonprofit organizations. Below are the various program components:

- ▶ City of Indianapolis Ordinance / Policy / Incentive Review Scorecard
- ▶ Municipal Rain Garden Program Development (continued contract through Urban Conservationist)
- ▶ Municipal Green Infrastructure Web Resource Center Development
- ▶ Draft City of Indianapolis Green Streets Design Standards
- ▶ City of Indianapolis Green Infrastructure Supplemental Storm Water Document
- ▶ City of Indianapolis Municipal Green Infrastructure Geographic Information System (GIS) Tracking Process

Green Infrastructure Design Manual for Small Commercial Sites, City of Atlanta, Atlanta, Georgia/USA. Assisted the City of Atlanta with developing and implementing a green infrastructure manual to help comply with new volumetric requirements from the state. The city wanted to create a user-friendly manual for smaller sites that would not have to meet the state requirements, but would still meet the intent of the volumetric requirement. The manual consisted of easy-to-use design tables, best management practice typical details, and example calculations. Ms. Williams also provided two training sessions on the manual to the design community. She also assisted with detailed specifications and typical details.

Storm Water Retrofit Manual, City of Philadelphia, Philadelphia, Pennsylvania/USA. Assisted the City of Philadelphia with developing a storm water retrofit manual. The manual is intended to provide property owners with sufficient information to evaluate retrofitting their properties with storm water management practices to better manage storm water runoff and potentially receive credits toward their storm water user fee. The manual consisted of easy-to-use design tables, best management practice typical details and renderings, and example calculations. Ms. Williams also provided two training sessions on the manual to the design community.



Daniel T. Ketzer, PE

Water Resources Engineer

Current projects

- ▶ Southeast Atlanta Green Infrastructure Initiative, Phase 1 – Permeable Pavers
- ▶ Railroad Jack and Bore Culvert Replacements
- ▶ Monroe County, IN Long Range Drainage Improvement Plan

Core skills

Green infrastructure, stream geomorphology, bankfull identification, self-forming channel design, two-stage channel design, natural channel design, groundwater modeling, watershed delineation, model in-stream processes, qualitative stream assessment, field soil sampling, soil analysis, hydrometer method, HY-8, XPSWMM, EPA SWMM 5.0, ArcMap, AutoCAD Civil 3D, HEC-RAS, MATLAB

Professional summary

Mr. Ketzer has worked on projects ranging in scale from single stream restoration and relocation to watershed-scale assessment and storm water management. His responsibilities have included green storm water best management practice (BMP) design; modeling combined sewer networks, combined sewer overflow (CSO) projects, and BMPs in XPSWMM and USEPA SWMM 5.0; presentations and workshops on green BMPs and urban watershed assessment; watershed delineation and mapping; designs for stream restoration; stream geomorphology surveys; biological and habitat monitoring; and spatial data analysis and mapping for watershed studies.

Representative projects

Fort Wayne Riverfront Study, City of Fort Wayne, Fort Wayne, IN. Project Engineer. Engineering services for the Riverfront Study in Fort Wayne, IN, which will be the first comprehensive look at enhancing the use of the city's rivers; it is intended to provide the road map to world class investment. Specifically, Amec Foster Wheeler prepared a Utility Inventory Analysis and Green Infrastructure Analysis for the Riverfront Development Study Area. The Utility Inventory Analysis was completed to provide technical data, outline the potential opportunities and constraints, and to inform and steer the planning team's design. Once the preliminary design was completed, Amec Foster Wheeler completed preliminary utility removal/replacement/relocation cost for the Riverfront Study Area. In addition, a Green Infrastructure Stormwater evaluation was completed for the Riverfront Study Area. Green Street design and specifications were incorporated into the overall Master plan and preliminary water quality volume calculations were completed.

Southeast Atlanta Green Infrastructure Initiative, Phase 1 – Permeable Pavers, City of Atlanta, Atlanta, Georgia. Water Resources Engineer. Amec Foster Wheeler is responsible for providing design verification and construction management on thirteen streets being replaced with permeable pavers and subsurface stormwater storage. The streets receiving pavers are steeply sloped and the project team was asked to modify the design to maximize storage while returning to the dry storage volume within 48-hours. The design team utilized a permeable paver system with stepped underground storage divided by an HDPE liner and connected with orifices and weep holes. Responsible for modeling the watershed and permeable paver storage in XPSWMM as well as designing and sizing the orifices, weep holes, underdrains, and outfalls.

Education

M.S., Food, Agricultural, and Biological Engineering, Ohio State University, Columbus, Ohio, USA, 2010

B.S., Food, Agricultural, and Biological Engineering, Ohio State University, Columbus, Ohio, USA, 2007

Professional qualifications/registration(s)

Professional Engineer, State of Ohio No. 78480, 2013

Rosgen Level 1, 2012

Certifications and training

XPSWMM Stormwater and 2D Modeling (2010),

HAZWOPPER 40 Hr (2010),

E-Rail (2013)

Experience

Amec Foster Wheeler: 2009 (Year started)

Industry: 2005 (Year started)

Continued.

Werk-Westbourne Enhanced High Rate Treatment Facility, Metropolitan Sewer District of Greater Cincinnati, Cincinnati, Ohio. Water Resources Engineer. Amec Foster Wheeler designed a low impact, sustainable stormwater management solution for the 7-acre site of the proposed Enhanced High Rate Treatment (EHRT) Facility that is eliminating Combined Sewer Overflow (CSO) #522 in Green Township. The low impact design included a partial green roof, bioretention facility, and the restoration of 1,000 feet of Schaible Creek which was disturbed by the facility development. Responsible for assisting with the restoration of Schaible Creek to ensure there was limited impact to the flow regime and existing habitat as well as producing the engineering design drawings.

Norwaldo Storm Water Improvements, City of Indianapolis, Indianapolis, IN. Water Resources Engineer. The 55th Street Drainage improvement project is the Phase II portion of a larger regional drainage improvement initiative addressing flooding concerns along almost 19,000 linear feet of roadways within the Norwaldo neighborhood. Amec Foster Wheeler analyzed the existing watershed conditions and performed necessary hydraulic and hydrologic analysis to determine the extent of flooding throughout the overall project area and the capacity of the existing infrastructure. Preliminary scoping documents included evaluation of the potential use of green infrastructure techniques to provide required water quality control and identified the use of permeable pavement, sub-surface storage, and bio-infiltration basins within the project area to reduce peak runoff and function as sustainable residential neighborhood BMPs. Amec Foster Wheeler designed street-side pave drains to reduce street flooding and standing water for a residential neighborhood within the city of Indianapolis. Responsible for assisting with addressing client comments and producing a final plan set for construction and for creating maintenance of traffic plans.

Lexington County Rapid Stream Assessment, Lexington County, Lexington County, SC. Water Resources Engineer. Rapid watershed analysis of the county, prioritized restoration efforts, and produced a watershed action plan. Amec Foster Wheeler also conducted workshops to train county personnel on how to perform the Rapid Stream Assessment Technique in the field and how to interpret the results to expand on the initial watershed action plan. Responsible for preparing presentations and handouts for the training classes, leading field teams to perform the in-field stream assessment, compiling and analyzing field data, and summarizing the data to support a watershed action plan.

Guerley Road Drainage Improvements, Metropolitan Sewer District of Greater Cincinnati, Cincinnati, Ohio. Water Resources Engineer. Planning, design, permitting and construction management services associated with the Guerley Road Detention Basin for the City of Cincinnati Stormwater Management Utility (SMU) under an indefinite delivery contract for green infrastructure. Am utilized HEC-HMS and HEC-RAS to analyze the watershed and discharges from the detention basin, including a HEC-RAS unsteady model for dam breach analyses and flood inundation area as required for a dam permit from the Ohio Department of Natural Resources (ODNR). All of the baseline data had been modeled with the SWMM model, which required careful calibration of the different models to meet both MSDGC and ODNR requirements. The main facility is a dam that is 20 feet tall and 200 feet long located in a valley within an intensely-urbanized area in Cincinnati. Responsible for reviewing and editing design drawings for constructability and consistency and producing a final plan set for construction and for aiding in the development of the emergency action plan in case the dam was breached.

CSO #024 Stream Separation Planning, Metropolitan Sewer District of Greater Cincinnati, Cincinnati, Ohio. Water Resources Engineer. The CSO #024 Watershed Assessment was implemented in an effort to eliminate CSOs from 7 overflow locations within the Ludlow Run drainage basin. Mixed storm water and wastewater exceed the existing combined sewer system's capacity and discharge directly to Ludlow Run, a tributary to the Lower Mill Creek, during periods of heavy rainfall or snowmelt. Amec Foster Wheeler provided alternatives to MSDGC for eliminating the CSO events. The alternatives examined the use of green BMPs, traditional storm water infrastructure, and a combination of green and traditional practices. Responsible for BMP suitability analysis of the project watershed using geo-spatial analysis; field assessments to validate BMP suitability and existing conditions; selection, design, and placement of green BMPs in the project watershed; calculating storm water volume reductions provided by each BMP and cumulative total for each alternative; modeling the watershed and each BMP alternative using XPSWMM and USEPA SWMM 5.0; analyzing each alternative based on cost per gallon of CSO eliminated, environmental benefit and impact, and social benefit and impact; and preparing and presenting data on the function and performance of green BMPs to the client and the public. The SWMM models were created based on existing GIS data, design drawings, and field measurements and validated using sewer flow monitoring data.



Brian Merritt, LEED-AP, CFM

Water Resources Engineer

Current projects

- ▶ Girard College Green Infrastructure Area Opportunity Analysis, Philadelphia Water Department, City of Philadelphia, Pennsylvania
- ▶ Stormwater Program and Fee Implementation, White Township, Pennsylvania
- ▶ Stormwater Program Needs Assessment, South Fayette Township, Pennsylvania
- ▶ York County Stormwater Authority Feasibility Study, York County, Pennsylvania

Core skills

Green Infrastructure, Stormwater Planning and Design, Stormwater Program and Finance Strategies, Regulatory Impact Analysis, Stormwater Ordinance Development Site/Civil Engineering, Flood Protection System Evaluation, Stormwater Compliance and Permitting.

Professional summary

Mr. Merritt has over 12 years of experience specializing in hydrologic and hydraulic engineering, watershed planning, site/civil engineering including green infrastructure and low-impact development site design and Leadership in Energy and Environmental Design (LEED®) certified projects. Mr. Merritt served as AMEC's project manager on the recent Stormwater Fee and Credit Consultation project. Beyond the stormwater fee and credit program analysis, tasks included the development of a stormwater retrofit guidance manual, program and planning support services related to the implementation of both recently approved Act 167 watershed plans as well as updates to PWD's stormwater management guidance, intended to better align development requirements with PWD's COA. Mr. Merritt also has served as the assistant project manager on both the Temple SMED and Girard College AOA projects supporting the planning level evaluation of GI opportunities throughout key areas of Philadelphia.

Representative projects

TMDL Strategy and Plan for MS4 Permit (PAG-13) Renewal, Mt. Lebanon Township, Allegheny County, Pennsylvania - Technical Advisor for the revised preparation and resubmission of the Township's Sawmill Run TMDL Strategy and Plan in support of its MS4 permit renewal under PAG-13. The purpose of the Strategy and Plan were to develop a reasonable and achievable, long-term TMDL implementation strategy that is consistent with PADEP requirements and meets EPA mandated Waste Load Allocations (WLA) for the Sawmill Run Watershed TMDLs. The goal of the plan was to work towards and attain Nutrient and Sediment reductions to meet water quality standards consistent with the Sawmill Run TMDLs through reasonable and cost-effective efforts by the Township. Key Plan elements include: Review of Previous Studies and Data Compilation; Public Involvement / Stakeholder Input; Watershed Characterization and Evaluation; Watershed Management Strategies; Watershed Monitoring; and, TMDL Strategy & Implementation Plan Development.

Germantown Friends School New Science Building, City of Philadelphia, Pennsylvania - Project Manager and Lead Civil Engineer for the preparation of land development plans for this new educational facility. An existing parking area was redeveloped to be the location of the new facility and grounds. Multiple best management practices were incorporated into the site, including rain gardens, bio-infiltration areas, green roofs and cisterns, to be integrated with the facilities curriculum. The project was designed utilizing LEED development standards.

Education

MS, Civil Engineering, Lehigh University

BS, Civil Engineering, Lehigh University

Certifications and training

LEED® AP

Certified Floodplain Manager

Experience

Amec Foster Wheeler: 2007
(Year started)

Industry: 2003 (Year started)

Memberships/affiliations

Delaware Valley Green Building Council

Pennsylvania State Association of Floodplain Managers

Pennsylvania Environmental Council (PEC)

Continued.

Temple University Stormwater Management Enhancement District, Philadelphia Water Department, City of Philadelphia, Pennsylvania - Assistant Project Manager and Senior Technical Lead for the development of a comprehensive Green Stormwater Infrastructure plan, in support of the City of Philadelphia Water Department's (PWD) Green Cities, Clean Waters Plan. PWD identified Temple University's Main Campus as having opportunities for implementation of stormwater management improvements, with an emphasis on GI. The University is an important landowner along the North Broad Street corridor whose academic mission and vision for long-term environmental sustainability mesh well with the goals and objectives of Green City, Clean Waters. AMEC's worked to identify potential opportunities for stormwater management improvements in the Temple University Stormwater Management Enhancement District (Temple SMED). Project tasks included data collection and mapping; stakeholder involvement planning; meetings, and community outreach; GSI alternatives analyses; development of a comprehensive Stormwater Improvements Plan; and development of conceptual level designs for select GSI locations.

Stormwater Fee and Credit Consultation Study, City of Philadelphia, Pennsylvania - Project Manager, to assist PWD in assessing its current stormwater fee and credit program, leading staff and citizens through a process that has helped to identify potential changes and improvements in both the perceived equity of its stormwater user fees and the overall effectiveness of its credit mechanisms as they apply PWD's stormwater and Green Infrastructure programs. The project included the development of a Stormwater Retrofit Guidance Manual, which provides engineering background and design guidance to allow property owners to take full advantage of PWD's credit and customer assistance programs such as the Stormwater Management Incentives Program (SMIP) and Greened Acre Retrofit Program (GARP). Mr. Merritt was responsible for the oversight of the team's scope, schedule and budget as well as managed contracting obligations, billing and invoicing as well as the management of project team members.

Act 167 Regulatory Implementation Support, Philadelphia Water Department, City of Philadelphia, Pennsylvania - Project Manager supporting the implementation of Act 167 Watershed Plans as well as the incorporation of updated city-wide GI design requirements to better align with PWD's COA. This support included outreach support related to the PWD's ongoing Development Services Committee (DSC) committee, analysis of Licenses & Inspections (L&I) data, technical analysis of proposed stormwater regulatory updates to assess impact on site design and layout within the context of development, peer community research, incentives program development, etc. The project resulted in a series of recommendations for the overall implementation and roll-out of the updated stormwater management requirements designed to improve GI performance across the City.

Overbrook Environmental Education Center, Jastech Development, City of Philadelphia, Pennsylvania - Project Engineer for the preparation of land development plans for this Pennsylvania Governor's Award Project. The proposed project was redevelopment of an abandoned warehouse site that incorporated several low impact development techniques to serve as demonstration projects and promote education and awareness.

Norwaldo Drainage Design, City of Indianapolis, Indianapolis, Indiana - Peer reviewer for the development of green infrastructure design plans for a residential neighborhood that experiences extensive road, yard and house flooding on a periodic basis. Water can stand for many days after storm events. The project addresses flooding concerns along almost 19,000 linear feet of roadways. Work included analysis of existing watershed conditions included hydrologic analyses necessary to determine the discharges for each of the sub-basins throughout the project area. Multiple solutions were evaluated including traditional storm water management with manufactured BMPs to meet the water quality requirements and the alternative use of green infrastructure techniques to provide the required water quality control for the project and the use of permeable pavement on two streets in the project area to reduce peak runoff.



James Kessen, PE

Senior Water Resources Engineer

Current projects

- ▶ Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Streambank Stabilization
- ▶ Illinois Department of Transportation (IDOT) US34 Phase I Engineering
- ▶ Illinois Tollway I-90 Reconstruction / Design

Core skills

Hydrologic and Hydraulic Simulation, Watershed Planning, Flood Plain Mapping, Flood Control / Stormwater Master Planning, Local, State and Federal Stormwater Permitting, Stormwater Ordinance and Technical Guidance Manual Preparation

Professional summary

Mr. Kessen has over 25 years of experience and serves as a project manager and project engineer on a wide variety of stormwater management projects, with an emphasis on the development of watershed plans, stormwater master plans, and drainage investigations. In addition, he supervises and provides quality oversight to the stormwater staff in the Chicago office. Typical projects include stormwater management system simulation, riverine system modeling, flood plain mapping, green infrastructure simulation and master planning, stormwater regulation compliance and stormwater ordinance and guidance development. Mr. Kessen's experience in the public and private sectors provide him with a clear understanding of the technical, social and political drivers impacting a wide variety of stormwater management projects. He is well-acquainted with the applicable modeling tools and regulatory requirements that must be applied in order to meet local, state and federal permit requirements in a variety of locales. His modeling expertise includes the use of FEQ (Full EQUations one-dimensional unsteady flow modeling program), HEC-RAS (steady and unsteady), HEC-2, EPA SWMM, XP-SWMM, PCSWMM, WSP2, WSPRO, HEC-HMS, HEC-1, TR-20 Win and DOS, WinSLAMM and DEC-2.

Representative projects

Water Resources Engineer: City of Greenfield, Citywide Stormwater Quality Management Analysis, City of Greenfield, WI. This evaluation was prepared to meet the water quality requirements of the State of Wisconsin's stormwater quality regulations contained in NR 151 and NR 216 of the Wisconsin Administrative Code. The City was required to reduce total suspended solid loadings 20% relative to baseline conditions by 2008 and 40% relative to baseline conditions by 2013. Pollutant loadings were computed using WinSLAMM for various stormwater best management practice (BMP) scenarios including "no stormwater BMP controls", "with current stormwater BMP controls" and "proposed stormwater BMP controls". A variety of structural and non-structural BMPs were evaluated including street sweeping, wet detention, subsurface treatment devices and grassed swales. Mr. Kessen performed task technical oversight and quality checking of project deliverables.

Water Resources Engineer: City of Pewaukee, City of Pewaukee Stormwater Management Plan Reviews, City of Pewaukee, WI. Provided stormwater permit review services for proposed residential and commercial developments within the City of Pewaukee. Reviewed proposed development for compliance with Wisconsin Department of Natural Resource's (WDNR) Stormwater Runoff Management regulations (NR 151) as well as local stormwater management regulations.

Education

Bachelor of Science, Civil Engineering, University of Iowa, Iowa City, Iowa, 1988.

Professional qualifications/registration(s)

Professional Engineer, Illinois (062-051612), 1997
Professional Engineer, Iowa (13655), 1996

Experience

Amec Foster Wheeler: 2011
(Year started)

Industry: 1988 (Year started)

Professional development

PCSWMM & EPA SWMM5 Training

Computational Hydraulics International

Unsteady & Steady HEC-RAS

University of Wisconsin – Madison

EPA SWMM5 Workshop

IAFSM pre-conference workshop

WinSLAMM (Source Loading and Management Model)

University of Wisconsin – Madison

Design of Stormwater Management Systems / BMPs

Water Resources Learning Center

Engineering Project

Management, Northwestern University

Hydraulic Design of Open Channel Systems

Illinois Institute of Technology

Continued.

Water Resources Engineer: City of Greenfield, Total Suspended Solid Loading Analysis for 100 acre Sample Site, City of Greenfield, WI. Utilized WinSLAMM to compute the expected wash off pollutant loadings for a variety of land uses within the City of Greenfield in order to provide a comparison between pervious and impervious pollutant loads. Baseline values for total suspended solid pollutant loadings were developed for wet weather events (Milwaukee 5-year rainfall 1/2/66 thru 12/29/70).

Water Resources Team Task Manager: City of Racine Public Works Department, Racine Stormwater Best Management Practices / Pollution Prevention Procedures Manual, City of Racine, WI. Developed a pollution prevention guidance manual for the City of Racine describing stormwater best management practices and procedures for the inspection and maintenance of 18 City sites as well as City operations such as catch basin cleaning, street sweeping, road salt management, yard waste management, and lawn fertilizer application management. In addition, each site was inspected and evaluated to determine whether additional best management practices should be implemented. A separate report was prepared entitled "*Recommended Pollution Prevention Activities and Modifications for Selected Municipal Sites of Interest*" that described recommended structural and non-structural stormwater best management practices for each site where opportunities for improvements were identified. This manual and associated reports were developed and submitted to the Wisconsin Department of Natural Resources (WDNR) as part of the City's NR 216 permit compliance submittal.

Water Resources Engineer: Village of Elm Grove, Village of Elm Grove, Final Design of Underwood Creek Flood Management Facilities, Village of Elm Grove, WI. Assisted with the hydraulic analysis (HEC-RAS) to evaluate improvements associated with a multi-objective flood management facility to alleviate chronic flooding along Underwood Creek in Elm Grove, Wisconsin. The project included the construction of on-line stormwater storage to attenuate flood peaks and a nine foot diameter bypass storm sewer to divert high flows around the flood-prone business district. Prepared the NR 116 permit application report (WDNR submittal) as well as coordinated the preparation of the LOMR application for the improvements (FEMA submittal).

Project Manager: Arthur Goldner & Associates, Inc., Sky Harbor Office Complex Drainage Investigation, Village of Northbrook, IL (Cook County). The Sky Harbor Office Complex is comprised of three office buildings located in Northbrook, IL (Cook County). The project site is roughly located immediately north of Dundee Road, east of I-294, south of I-94, and west of Academy Drive along Landwehr Road. The office complex had a history of flooding due to the lack of an effective on-site stormwater management system. Problems included: building access disruption, interior building flooding, building foundation damage, and lawn flooding. Project tasks included: field data collection and tenant interviews, problem identification/definition, development of alternatives, and coordination with staff at the Village of Northbrook regarding the feasibility of the various alternative concepts. Numerous alternatives were developed including: runoff redirection, flood proofing (permanent and temporary barriers), traditional conveyance system improvements as well as green infrastructure improvements (e.g., bioretention, porous pavement, and conversion to a green roof). The final deliverable included a drainage evaluation report, field survey data, interview questionnaires, construction cost estimates and concept drawings for alternatives.

Water Resources Engineer: Illinois Tollway I-90 Jane Adams Memorial Tollway, Kennedy Expressway to Oakton Street, Cook County, Illinois. Assisted with the planning and design of structural stormwater best management practices including 3420 feet of bioswale and 2 infiltration catch basins. Tasks included coordination with other consultants regarding design criteria, computation of water quality volume, BMP selection, BMP sizing and review of proposed materials (e.g., aggregate, filter fabric, underdrains) for appropriateness for use in construction specifications. In addition, special consideration regarding the vegetation used in the bioswales was required due to the project's proximity to O'Hare International Airport in order to deter waterfowl from being attracted to the bioswales.

Kip Smith, PE

Associate Engineer



Current projects

- ▶ North Branch of the Chicago River Streambank Stabilization Projects, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), Cook County, Illinois
- ▶ Roadway, Bridges and New Base Entry Gate Design Services, U.S. Department of the Navy NAVFAC, Camp Lejeune North Carolina.
- ▶ I-90 Jane Addams Memorial Tollway, Kennedy Expressway to Oakton Street, Illinois Tollway, Cook County, Illinois

Core skills

Civil & Mining Engineering, Engineering Plan Development, Environmental Permitting, Construction Specifications, Post Award Construction Services

Professional summary

Mr. Smith has extensive experience in civil, environmental, mining and mechanical engineering projects for municipal, state, and industrial/commercial clients. Civil and environmental projects have included residential and commercial site development, transportation related roadway and bridge designs, air and NPDES permits, stream bank stabilization design, mine siting and expansions, and stormwater environmental compliance.

Representative projects

I-90 Jane Addams Memorial Tollway, Kennedy Expressway to Oakton Street, Illinois Tollway, Cook County, Illinois. Final design for the reconstruction and additional lanes on a 5.5 mile stretch of I-90 as part of Illinois Tollway's Move Illinois Program. Responsible for construction specifications and special provisions, bid packages, RFI and Submittal reviews.

Sanitary Sewer Improvements for Westover Property, Forest City Military Communities, LLC, City of Highwood, Illinois. Project Manager. Design services for the replacement of existing sanitary sewer mains and services in the Westover Property in Highwood, IL. The project included the creation of plans, drawings and specifications for the removal of an existing sanitary sewer lift station and affiliated mains and the redirection of the newly installed sewer main to an existing gravity connection. Responsible for gravity sewer design, plan preparation, specification preparation, and coordination of design parameters with multiple stakeholders.

North Branch of the Chicago River Streambank Stabilization Projects, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), Cook County, Illinois. Project Manager. Design of streambank stabilization projects on two reaches of the Middle Fork of the North Branch of the Chicago River in Northfield and the West Fork of the North Branch of the Chicago River in Northbrook. Stabilization work in Northbrook along the West Fork will address erosion issues affecting utilities, railroad infrastructure, and residential structures. Elements of the work include data collection, survey, geotechnical investigations, hydraulic analysis, COE and IDNR-OWR permitting, and design services. Responsible for coordinating all design elements including, survey, data collection, geotechnical investigations, water resources, permitting, design engineering phases.

Education

Bachelor of Science, Mining Engineering, University of Wisconsin, Platteville, WI, 1986

Professional qualifications/registration(s)

Professional Engineer, Illinois (062-046952), 1991
Professional Engineer, Wisconsin (28384-006), 1992
Professional Engineer, Indiana (PE60920199), 1992

Certifications and training

Asbestos Consultant Project Designer, IL
MSHA 40-hour Health and Safety Training - Underground Metal/Nonmetal
OSHA 40-hour Health and Safety Training
HAZWOPER 8 Hour Supervisor CPR/First Aid

Experience

Amec Foster Wheeler: 1997 (Year started)
Industry: 1986 (Year started)

Memberships/affiliations

American Council of Engineering Companies
International Society of Explosives Engineers
Society for Mining, Metallurgy and Exploration

Professional development

Stormwater Utilities
Green & Grey CSO's
Smart Stormwater Retrofits
Pipe Standards
High Load Bearings

Continued.

Roadway, Bridges and New Base Entry Gate Design Services, U.S. Department of the Navy NAVFAC, Camp Lejeune North Carolina. Project Engineer. Design and final PS&E for a new base entry point, new security gate, 6.5 miles of new divided highway used in the interior of the base, four new interchanges, at-grade intersections and thirteen new bridges over existing water bodies or roadways. Responsible for preparing technical specifications using SpecsIntact, preparing cost estimates, and designing railroad crossings for the new base entry road.

Former Military Housing Redevelopment Environmental and Infrastructure Services, Forest City Military Communities Midwest, four Cities in Illinois and Indiana. Principal Engineer. Designer for site civil engineering tasks related to construction of up to 1,000 new homes associated with the U. S Navy's Great Lakes Naval Training Station. Design duties included all elements of subdivision development, including roadway design, water, storm and sanitary utility design, and mass grading. Responsible for coordinating elements of site civil design, including underground utilities and road street layout.

North Branch of the Chicago River Streambank Stabilization Projects, Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), Cook County, Illinois. Project Manager. Design of streambank stabilization projects on two reaches of the Middle Fork of the North Branch of the Chicago River in Northfield and the West Fork of the North Branch of the Chicago River in Northbrook. Stabilization work in Northbrook along the West Fork will address erosion issues affecting utilities, railroad infrastructure, and residential structures. Elements of the work include data collection, survey, geotechnical investigations, hydraulic analysis, COE and IDNR-OWR permitting, and design services. Responsible for coordinating all design elements including, survey, data collection, geotechnical investigations, water resources, permitting, design engineering phases.

Willow Higgins Creek, City of Chicago, O'Hare Modernization Program, Chicago, Illinois. Technical Design Manager. Technical design manager for the relocation of 13,200 ft of existing creeks as part of the initial phase of the \$14 billion Chicago O'Hare International Airport Modernization Program (OMP). Design deliverables included complete plans and specifications for open channel MSE retaining walls, soldier and sheet pile retaining walls, open channel modifications, precast and CIP box culvert design, miscellaneous drainage, design, and project coordination with the runway master civil design team. The \$36 million dollar construction phase was part of the \$160 million site preparation package for a new O'Hare runway (9L-27R).

Stormwater and Civil Engineering Services, City of Chicago Department of Aviation (DOA), Chicago, Illinois. Project Leader. Provided civil, environmental and construction engineering services for facilities to handle stormwater drainage at O'Hare and Midway airports, conducted under a long-term agreement. Work included closure of DOA and airport tenant Leaking Underground Storage Tanks (LUST), and conducting annual facility and Underground Storage Tank (UST) compliance inspections with respect to stormwater issues. Amec Foster Wheeler maintained spill-tracking, UST and Aboveground Storage Tank (AST) databases, tracked annual de-icing fluids usage, and prepared and updated the Stormwater Pollution Prevention Plans (SWPPP) and Best Management Practices (BMP's) for the Airports. Responsible for pursuing closure of Aviation Department and airport tenant Leaking Underground Storage Tanks (LUSTs); conducted annual facility and Underground Storage Tank (UST) compliance inspections with respect to stormwater issues.

Publications and presentations

Blasting Planning Overview & Thoughts, SME Twin Cities Annual Conference, Brooklyn, MN, September 17, 2013

Life Cycle of a Mine, IAAP Teachers Workshop, Rockford, IL, July 22, 2014



Christopher M. Prosperi, PE

Senior Transportation Engineer

Current projects

- ▶ North Milwaukee Avenue, Addison Street to Belmont Avenue Phase II Design
- ▶ Alton-Godfrey Transportation Study and Design Services

Core skills

MicroStation, Geopak, roadway design, alignment and profile design, maintenance of traffic, pavement marking and signing, construction cost estimates, QA/QC procedures, project management, subconsultant management, procurement, subsurface utility engineering, utility coordination,

Professional summary

Mr. Prosperi has 14 years of experience in civil engineering including project management, subconsultant management, roadway design, subsurface utility engineering, utility coordination, and utility conflict analysis and construction inspection. His experience includes geometric design, vertical and horizontal alignment design, drainage design, Americans with Disabilities Act (ADA) ramp and sidewalk design, traffic control and protection, erosion control, signing and pavement marking, construction cost estimating and preparation of Phase I Preliminary Studies and Phase II Plans, Specifications and Estimates.

Representative projects

Alton-Godfrey Transportation Study and Design Services, Illinois Department of Transportation, Madison County, Illinois. Senior Engineer. Preliminary engineering report; EIS document; preliminary engineering, and cost estimates for the Illinois Department of Transportation (IDOT) for a potential new roadway facility between Alton and Godfrey, Illinois. Responsible for authoring the Combined Design Report including consolidation of information from multiple sources to present project conclusion and recommendations.

North Milwaukee Avenue, Addison Street to Belmont Avenue Phase II Design, Chicago Department of Transportation, Chicago, Illinois. Senior Engineer.

Phase II final engineering services for the reconstruction and resurfacing of Milwaukee Avenue from Addison Street to Belmont Avenue, in accordance with the approved Project Development Report (PDR). Includes modification of PDR documents as may be required and the preparation of contract plans, specifications and estimates for the resurfacing/ reconstruction of the roadway. Including, installation of new street lighting, traffic signal modernizations, installation of landscape and/or streetscape features and sewer and drainage work. Responsible for preparing contract plans, specifications and estimates, roadway design, subconsultant management and client interaction.

PTB 159/018: I-74 Phase I Engineering Services, Illinois Department of Transportation, Moline, Illinois. Senior Engineer. Preparation of Phase I Combined Design Report and Environmental Assessment for the reconstruction and add-lanes of 1.5 miles on I-74 from 23rd Avenue to the Rock River. Work includes interchange type studies for I-74 at IL-5 and improvements to IL 5 from east of I-74 to 16th Street. Engineering services include geometric studies, intersection and interchange design studies, drainage studies, environmental studies, traffic analysis, subsurface utility engineering, public meetings and preparation of final report. Responsible for Quality Assurance/Quality Control.

Education

Bachelor of Science, Civil Engineering, Marquette University, 2000

Professional qualifications/registration(s)

Professional Engineer, Illinois, (062-065728), 2013

Professional Engineer, Wisconsin, (43146-6), 2013

Professional Engineer, Georgia, (036566), 2011

Professional Engineer, Texas, (94617), 2004

Professional Engineer, Michigan, (6201059786), 2012

Professional Engineer, Ohio, (PE18088), 2013

Experience

Amec Foster Wheeler: 2001 (Year started)

Industry: 2000 (Year started)

Continued.

I-44 at Viaduct – Phase II Detailed Design, Missouri Department of Transportation, Pacific, Missouri.

Senior Engineer. 1.911 mile widening and reconstruction of I-44 in Franklin County, MO. Includes preliminary design evaluation of 12 alternate intersection layouts, and detailed design of preferred alternate. Project includes land use planning, Access Justification Report, updating of Categorical Exclusion, roadway geometry, freeway design ramps, outer road reconstruction, storm water design, construction phasing, signing and striping, two freeway overpasses (four bridges), ROW plans, SUE and erosion control. Responsible for engineering design in the preparation of contract plans, specifications and estimates.

Pharr District, FM 511 from US 77/83 to the Port of Brownsville - Roadway Phase I PS&E Services, Texas Department of Transportation, Brownsville, Texas. Senior Engineer.

Corridor Analysis, Route Studies, Schematic Design, Environmental Document and PS&E Preparation for conversion of 9.6 miles of 2-lane rural FM 511 with heavy truck traffic to 4-lane divided, controlled access freeway with dedicated, separated truck lanes connecting U.S. Highway 77/83 Expressway to port of Brownsville, Texas. Construction plans for 10.4 miles of new freeway, partially on new location (four miles), near Brownsville in South Texas. Roadway included 3.4 miles of five-lane curb / gutter conversion and seven miles of two-lane to divided four-lane highway conversion. Roadways elements included geometric design, roadside design, hydrology & hydraulics, signing, striping, lighting, signalization, traffic control. Phase I construction cost was \$51MM. Responsible for roadway engineering, including horizontal and vertical alignments.

TSM Projects, City of Austin, Austin, Texas. Project Engineer. Roadway planning and design for urban intersections improvements, including environmental documents; plans , specification and estimate preparation for roadway, drainage, ESC, tree survey, traffic control, signing, striping, signalization, utility coordination, public meetings, subsurface utility engineering and bid phase services. Responsible for engineering design in the preparation of contract plans, specifications and estimates.

Roadway Planning Study, City of Cedar Park, Cedar Park, Texas. Project Engineer. Roadway planning and design for four intersections in Cedar Park as part of design effort for multiple delivery order contract for urban capacity improvement. Services included environmental documents, PS&E preparation for roadway, drainage and utility improvements, tree survey and protection, traffic control, signalization, signing and striping, coordination with utility companies and regulatory agencies, and construction phase services. Work part of fast-track project to be completed within 6 months of start of construction. Responsible for engineering design in the preparation of contract plans, specifications and estimates.

Horseshoe Project Utility Impact Study, Texas Department of Transportation, Dallas, TX. Project Manager. Utility investigation including existing utility plan, inventory and conflict analysis, utility owner data, and utility adjustment concept plan, bill of quantities, utility adjustment estimate and collaboration with Structure and Drainage teams to minimize utility impact for developer's proposal effort. Project included proposal efforts on 8 miles of IH30 and IH35 reconstruction and coordination with 9 utility companies. Responsibilities included development of final study comprising review of existing utility data, tabulate and quantify existing utility data, conduct utility owner interviews, tabulate and evaluate utility conflicts and provide engineer's opinion of estimated relocation costs.



Ronald R. Huffman, ASLA, AICP

Senior Principal/Landscape Architect

Professional summary

Mr. Huffman is a licensed Landscape Architect and Certified Planner that brings 31 years of award-winning planning and design experience to Amec Foster Wheeler. He has completed more than 500 master planning and design projects during his career in 25 states and 3 foreign countries. Under his direction, his teams have completed more than 200 park plans, 30 streetscape plans, 40 City/County comprehensive plans, more than 100 miles of trail, a dozen redevelopment plans, military master plans, cemetery plans, downtown revitalization plans, historic district design guidelines, land use studies and more than 50 master plans for private development. *Projects he has managed have been the recipient of 39 professional planning and design awards. He also received recognition by the Georgia Planning Association for Distinguished Achievements in Planning.*

Recent related projects

- ▶ **Georgia Gateway Program, GDOT:** Lead designer and project manager for the development of aesthetically pleasing and visually impactful designs to mark the entrances to the State of Georgia along its major Interstate Highway System entrances. The dramatic designs included themed marble monument towers, sculpture, landscape planting, LED lighting, and bridge enhancements. (Completed 2013)
- ▶ **Freedom Parkway Interchange Enhancement, GDOT:** Lead designer and project manager for the development of a plan to improve accessibility and aesthetics through one of the most difficult highway interchanges in the Atlanta region. The plans addressed wayfinding signage, environmental graphics, sculpture, bridge/overpass enhancements and landscape planting to direct travellers to three nationally significant sites including the Jimmy Carter Library, the MLK Center, and Centennial Olympic Park. (Completed 2013)
- ▶ **Auburn Avenue Underpass, Central Atlanta Progress/Atlanta Downtown Improvement District:** Project manager for a design and development of enhancements to the I-75/85 underpass at Auburn Avenue in downtown Atlanta. The enhancements include the design of a 260 foot long/30 foot tall themed wall mural accented with LED lighting, themed light boxes and historic-interpretive markers. The goal of the project is to reconnect the neighborhood and accent the Atlanta Streetcar Stop with powerful environmental graphics. (In progress)
- ▶ **North Carolina DOT Gateway Enhancement Program:** Lead Designer and Project Manager for bridge, landscape and signage enhancements to the major Interstate Highway entrances into the State of North Carolina. Themed landscapes and environmental graphics were developed to reflect the differing regions throughout the State. (In progress)
- ▶ **Atlanta Beltline Eastside Trail, ABI:** Lead Principal for the design and engineering team in the development of the first major section of Atlanta's highly acclaimed Beltline Trail. Work included trail design, sculpture, wall murals, utility relocation, and bridge rehabilitation. * ACEC Engineering Award Winner (Completed 2103)
- ▶ **The Emiquon Preserve Master Plan and Site Design for Visitor Facilities, Illinois:** Led the design and master planning team for an award winning 3,000 acre Nature Preserve along the Illinois River. The team developed a master plan that featured braided roads, walkways, trails, boardwalks and interpretive pavilions. (Completed 2011)
- ▶ **Johnson's Shut-Ins State Park Master Plan and Reconstruction Plans, Missouri:** Played the lead role as Design Manager for all aspects of the built design that included a 10,500 SF Visitor's Center, pavilions, boardwalks, trail heads, campground, camper cabins, staff residence, maintenance compound, 10 miles of roadway, 20 miles of trail, State and Regional History Exhibits and 60 interpretive markers. Landscape restoration includes planting of more than 5,000 native trees, and restoration of a rare mountain fen. (Completed 2011)

USFWS Jupiter Inlet Trail and Viewing Platform, Florida: Project Principal for the development of a trail through a mangrove swamp and a viewing platform overlooking the inter-coastal waterway. (Completed 2011)

Education

Master of Community Planning,
Auburn University, School of
Architecture and Fine Arts,
1984

Master of Arts, History, with a
concentration in Historic
Preservation, Auburn
University, College of Liberal
Arts, 1984

Bachelor of Landscape
Architecture, Auburn
University, School of
Architecture and Fine Arts,
(ASLA – Certificate of Honor
for Academic Excellence),
1983

Professional qualifications/registration(s)

Professional Landscape
Architect: Georgia, #805
American Institute of Certified
Planners, #7023

Experience

Amec Foster Wheeler: 2004
(Year started)

Industry: 1984 (Year started)

Memberships/affiliations

Member, American Institute of
Certified Planners
Member, American Planning
Association
Member, Georgia Planning
Association



Warren C. High

Senior Associate Biologist / Project Manager

Core skills

Green Infrastructure Design, Ecological restoration, permitting, Wetland and stream restoration, cost estimating

Professional summary

Mr. High is a senior principal and project manager with over 32 years of experience in watershed management, green infrastructure, and ecological restoration. His duties include the design, management, permitting, installation, and monitoring of stormwater management practices, wetland and stream restoration projects. Mr. High has received advanced training in all aspects of stream restoration including fluvial geomorphology and bioengineering from national and international experts. Mr. High's specific experience includes watershed assessment, public funding, public education, resource agency permitting, preparation of cost estimates, specifications, vegetation lists, bid packages, construction inspection, monitoring, and all other aspects of restoration. Mr. High is a guest lecturer at numerous colleges teaching various aspects of stream restoration. Mr. High is an adjunct instructor at Cincinnati State College where he teaches Watershed Management. He has served on the Bioengineering Committee for ASTM

Representative projects

Twin Creek Preserve, Mill Creek Watershed Council, Sharonville Ohio, USA
Project Value: \$2.3M Design/Build, Dates: 2010-2013. Project Manager, Partial Design, Permitting, Construction Oversight. Project to perform stream restoration and wetland creation services including: grant application, conceptual design, permitting, design/build, construction oversight, and monitoring for the East Fork and Mainstem Mill Creek. Included over 3000 linear feet stream, 6 acres of wetland and riparian restoration of a 35 acres site. Responsible for grant application, conceptual design, cost estimate, permitting, endangered species screening, design of wetlands, review and approval of design, vegetation lists, cost estimates, construction management and monitoring. Project has won 3 regional and state awards.

- ▶ Project resulted in a reduction in the floodplain
- ▶ Project resulted in stream obtaining biological attainment
- ▶ Sharonville obtained a park at little to no cost
- ▶ Norfolk Southern Railroad donated 3 acres of land in exchange for 35,000 cubic yards of compacted fill

Guerley Road Drainage Improvements, Metropolitan Sewer District of Greater Cincinnati, Cincinnati, Ohio. \$450,000 (Design and Construction Management), 2010-2015. Project Manager. Project involved the design and construction of a 20 foot tall dam as part of an urban stormwater master plan. Project included daylighting stormwater pipes, relocation of a greenway trail, relocating 5 major utilities, public participation, and ecosystem restoration. Duties included the development of the work plan, geotechnical investigation, hydraulic modeling, design, permitting, and construction. Specific duties included the design of the bioretention ponds and native planting plan, preparation of the Section 404 and Dam Safety permit applications, presentation of the project at a public meeting, assist with the preparation of the design drawings, specifications, quantities, and cost estimate. This resulted in an immediate reduction in flooding, improved water quality, reduced combined sewer overflows, and allowed for the installation of a much smaller stormwater pipe

Education

MS, Environmental Management, University of Findlay, 2000

BS, Fisheries and Wildlife Biology, Iowa State University, 1982

Professional Certifications

Scuba Diver (PADI Divemaster, 64393)

Habitat Evaluation Procedures

Instream Flow Incremental Methodology

Experience

Amec Foster Wheeler: 2003
(Year started)

Industry: 1979 (Year started)

Memberships/affiliations

Water Environment Federation

Ohio Stormwater Association

Kentucky Stormwater Association

Mill Creek Watershed Council

International Erosion Control Association (IECA)

Society of Ecological Restoration (SER)

Water Management Association of Ohio, Vice President 2001-2003

Ohio Storm Water Task Force, Chairman 2000-2003

Society of American Military Engineers

Continued.

downstream. This project has one of the highest benefit to cost ratios in the MSDGC program.

Quantico Creek Watershed Study—Prince William County, Virginia. Task Manager and Principal for the design and implementation Watershed Master Plan for a rapidly urbanizing watershed. Tasks included a rapid stream assessment of more than 30 miles of open channel, assessment of more than 30 stormwater detention facilities, a public participation program, meeting with major stakeholders, identification of programmatic and site specific issues, and recommendations. All data was presented in a GIS and summarized in a user friendly report that included maps, photos and narrative describing the problems, the solutions, the costs, and the priority. Performed for Prince William County, Virginia

Mill Creek Supplemental Environmental Projects Stream Stabilization—Cincinnati, Ohio. Task manager for team development, scoping, public participation, design of instream structures, bioengineering design, permitting, cost estimates, specifications for 5 different segments of stream in a large highly degraded urban channel. Project manager for all construction oversight. One project included the partial removal of a low head dam and replacement with a 300 foot long Newbury riffle. Measures included the installation of riffles, J-hook vanes, rock groins, wrapped earth, wetland swales, and riparian restoration. This project was performed for the Metropolitan Sewer District under a Federal Consent Decree. The overall project was over 2 miles long with a budget of \$5M.

West Chester Township Service Center Stormwater Detention Retrofit, Butler County, Ohio. Conversion of two stormwater detention basins into bio-retention ponds to demonstrate how existing basins can be retrofitted to achieve multiple design objectives, including a reduction in flooding, improved water quality, improved wildlife habitat, enhanced site aesthetics, and passive recreation opportunities. Project included HEC-RAS analysis to evaluate connectivity between Mill Creek and its adjacent floodplain, and potential flood reductions achieved by breaching an existing farm levee. In the role of Project Manager, responsible for project identification, development of partners, project concepts, permitting, assistance with Section 319 funds, review of design of pond retrofits to create complex bed topography, and planting plan using native grasses, sedges, forbs, trees and shrubs to restore a variety of indigenous plant communities. Services were performed for West Chester Township and OKI Regional Council of Governments.

The Miller Addition/Park District of Dayton-Montgomery County Park Master Plan, Miller Brothers Inc.—Tipp City, Ohio. Environmental scientist assisting in the development of a master plan which guided the redevelopment of an existing 140+ acre sand and gravel mining operation into functioning facility of the Park District of Dayton-Montgomery County. The site, located adjacent the scenic Stillwater River, recommended redeveloping the water-filled gravel excavation areas into a water-oriented fishing facility for the Park District with an estimated improvement cost of \$1,200,000.

Fort Wayne River Greenways Master Plan, Fort Wayne Parks and Recreation Department—Fort Wayne, Indiana. Environmental scientist working with planners and landscape architects to investigate constraints and opportunities on an urban greenway.

Wetland Mitigation Bank—Trumbull County, Ohio. Project manager responsible for the design and construction of a 30-acre wetland mitigation bank located at the Grand River Wildlife Area. Assisted with negotiations between Ohio Edison Company and the Ohio Department of Natural Resources. Duties included the siting, conceptual design, final design, permitting, construction specifications, monitoring plan, mitigation bank agreement, and construction inspection.

Winton Woods Lake Restoration—Hamilton County, Ohio. Project manager for the design of a study to restore a 180-acre lake. The study included the characterization of the watershed, identification of pollution sources, water and sediment sampling, calculations of sediment fill, identification of disposal areas, identification of dredge methods and cost estimates.

Our Vision

To be the most trusted partner for our customers by consistently delivering excellence – bringing together the knowledge, expertise and skills of our people from across our global network.

