



water quality and providing customer service. Subsequently, as an employee for the Tennessee Department of Environment and Conservation (TDEC) in the Watershed Management Division, Ms. Farrell focused on broadening her perspectives to include multiple watersheds with a wide variety of pollutants. She performed environmental assessments aimed at evaluating load and waste load allocations from pollution sources. She provided technical guidance regarding nonpoint source impacts and mitigation efforts such as streamside buffers, vegetative and structural best management practices, planning techniques and ordinances in the study area. Her expertise, coupled with associated modeling efforts, has resulted in TMDLs and associated NPDES permits requirements to protect water quality. Most recently, Ms. Farrell has joined the engineering consulting field and is aggressive about applying her knowledge and skills to benefit her clientele. Her daily duties involve assisting municipalities with the technicalities of program management and permit compliance.

**CORY BLOYD, CPESC (THIRD ROCK)** – Mr. Bloyd is an Environmental Technician involved in a broad spectrum of projects at Third Rock that combine his expertise in environmental science, geographic information systems, hazardous materials, and environmental construction. He routinely conducts surveying for aquatic and terrestrial species, including those listed as threatened and endangered, and is a PADI-certified Open Water and Nitrox Certified Diver. He plays an integral role in Third Rock's water quality studies, having served as the field team leader for a large, multi-county study from 2006 to 2008 and is currently serving as field team leader on an ongoing study in Lexington. Mr. Bloyd is a Qualified Erosion Prevention and Sediment Control Inspector for Kentucky, Tennessee, and Louisville MSD and is currently serving as the lead EPSC inspector for the ongoing downtown crossing of the larger Ohio River bridges project.

**BRIAN WATSON, P.E., P.H. (TETRA TECH)** – Mr. Watson is a senior civil engineer specializing in environmental engineering and water resources engineering, including hydrodynamic and water quality modeling, TMDL development and

implementation, and water resources planning. He has experience with numerous watershed, groundwater, hydraulic, hydrologic, hydrodynamic, and water quality models, and has worked on a variety of Total Maximum Daily Load (TMDL) projects around the country, including assisting several states (GA, FL, TN, AL, SC, and CA) with meeting TMDL consent decree requirements. Mr. Watson has worked for various clients, including USEPA (Headquarters, Region II, Region IV, Region IX, and Region X), US Army Corps of Engineers (Jacksonville, Mobile, and Savannah Districts), US Air Force (ACC, AETC, AFMC, and Space Command), NASA, Tennessee Valley Authority (TVA), GAEPD, ADEM, TDEC, FDEP, and local governments and municipalities.

**CAITLIN FLEMING, P.E. (TETRA TECH)** – Ms. Fleming provides engineering and technical support by developing and implementing environmental compliance projects for private, commercial, municipal, and government clients. This work includes air, water, and waste permitting; environmental impact assessment studies; spill response plans including SPCC, BMP, GPP, ERP; OSHA Process Hazard Analysis and EPA Risk Management Planning and associated PHAs (for four municipal wastewater plants and a large chemical processing plant); OSHA and EPA compliance audits; data analysis and emissions evaluations for multiple location facilities under a major national environmental contract; and project report technical quality control reviews.

**C. ZACHARY WILDER, P.E. (TETRA TECH)** – Mr. Wilder provides civil engineering and geotechnical engineering support to a wide variety of projects, including landfills, site development, and roadway projects. He is a qualified erosion and sediment control inspector in Kentucky (KEPSC).

**LAURA SHEERAN, EIT (TETRA TECH)** – Ms. Sheeran provides civil engineering and structural engineering support to a wide variety of projects at Tetra Tech, including water, wastewater, stormwater, and landfill projects. She is currently serving as a project engineer on the LFUCG Walhampton stormwater project and the Wolf Run Wet Weather Storage Facility. She is a qualified erosion and sediment control inspector in Kentucky (KEPSC).



## STAFF CREDENTIALS

The following table outlines key staff members' professional credentials.

Staff Member	Credentials
Richard Walker, P.E., CFM	<ul style="list-style-type: none"> <li>• Bachelor of Science in Agricultural Engineering</li> <li>• Master of Civil Engineering (Water Resources)</li> <li>• Professional Engineer, Kentucky</li> <li>• Certified Floodplain Manager</li> <li>• Qualified Inspector, Kentucky Erosion Prevention and Sediment Control</li> </ul>
John Kosco, P.E., CPESC	<ul style="list-style-type: none"> <li>• Bachelor of Science, Agricultural Engineering</li> <li>• Master of Science, Civil / Water Resources Engineering</li> <li>• Certified Professional in Erosion and Sediment Control</li> </ul>
Barry Toning	<ul style="list-style-type: none"> <li>• Bachelor of Arts in Journalism</li> <li>• Master of Arts, Env. Risk Communication</li> <li>• Certified Erosion, Sediment, and Storm Water Inspector</li> <li>• Qualified Erosion and Sediment Control Inspector (Kentucky, GA Soil &amp; Water Conservation Commission, Louisville MSD)</li> <li>• Kentucky Division of Water Class I Wastewater Treatment Plant Operator</li> </ul>
Gerry Fister, P.G.	<ul style="list-style-type: none"> <li>• Bachelor of Science in Geology</li> <li>• Professional Geologist</li> </ul>
Steve Evans	<ul style="list-style-type: none"> <li>• Bachelor of Science in Biology</li> <li>• Master of Arts in Education</li> <li>• LFUCG Training Instructor for Water Quality Sampling, 2012–2014</li> </ul>
Bert Remley	<ul style="list-style-type: none"> <li>• Bachelor of Arts in Anthropology, Minor in Biology</li> <li>• Master of Science in Biology</li> <li>• Society of Freshwater Science certifications:               <ul style="list-style-type: none"> <li>○ Identification of Eastern Chironomidae (Midges), 2005–2016</li> <li>○ Identification of Eastern Ephemeroptera (Mayflies), Plecoptera (Stoneflies), and Trichoptera (Caddisflies), 2005–2016</li> <li>○ Identification of Eastern General Arthropod, 2014–2019</li> </ul> </li> <li>• Ohio EPA Level 3 Qualified Data Collector for Benthic Macroinvertebrate Assessment – Sample Collection, Identification, and Data Evaluation</li> </ul>
Jennifer Shelby, P.E., CPESC	<ul style="list-style-type: none"> <li>• Bachelor of Science in Biosystems and Agricultural Engineering</li> <li>• Master of Science in Biological Engineering</li> <li>• Professional Engineer, Kentucky</li> <li>• Certified Professional in Erosion and Sediment Control</li> <li>• Levels I-IV of Rosgen Stream Restoration Training</li> <li>• Stream Restoration Design Training (Canadian Rivers Institute)</li> </ul>



## **STAFFING INFORMATION AND AVAILABILITY**

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A Staffing Information and Availability table follows. Actual time commitment to the project will depend upon the final project scope and schedule. We are committed to providing focused staff to lead the project, supported by best-in-class technical experts, to deliver the best solutions to LFUCG.

### Staffing Information and Availability Table

Team Member*	Firm	Team Role	% of Time Available for Project	Experience Areas	Highlights	Years of Experience	Location
Richard Walker	Tetra Tech	Project Manager	50%	Program Management, Consent Decree and MS4 Permit Implementation	Current MS4 Program Manager for Lexington; primary author of Lexington's Stormwater Manual	30	Lexington
Barry Tinning	Tetra Tech	Policy Analyst	50%	Construction Site BMPs, Training, Public Involvement	Key staff member on implementing the MS4 permit for construction site runoff issues	28	Lexington / Mt. Sterling
Laura Sheeran	Tetra Tech	Project Engineer	30%	Stormwater engineering design and construction	Project engineer on Walhampton	3	Lexington
Steve Evans	Third Rock	Environmental Scientist	70%	Data Evaluation, Statistical Analysis	Evaluates, interprets monitoring data to detect trends	13	Lexington
Christopher Diehl	Tetra Tech	Project Engineer	50%	Hydrology, hydraulics, floodplain mapping	Modeler for Vaughns Branch / Sugarmill and Danby Corners LOMR	10	Louisville
Shann Easterling	Tetra Tech	Senior Technician	30%	Water Quality Monitoring	Provides field support	15	Lexington
Jennifer Shelby	Third Rock	Project Engineer	50%	Watershed Assessments	Developed protocol for evaluating Lexington data	15	Lexington
Bert Remley	Third Rock	Environmental Scientist	50%	Water Quality Monitoring	Directs field work for Lexington monitoring	20	Lexington
Cory Bloyd	Third Rock	Environmental Scientist	50%	Water Quality Monitoring	Directs field work for Lexington monitoring	9	Lexington

\* Indicates a personal team role greater than 10% of the total project effort.



## SECTION 4 » CHARACTER, INTEGRITY, REPUTATION, AND EFFICIENCY OF THE PERSON OR FIRM

### OVERVIEW

Since inception in 1966, Tetra Tech has earned a strong national reputation. Because of our emphasis on character, we have been able to attract leading professionals who are known for their expert judgment, experience, and efficiency. These professionals have worked in both private and governmental positions.

In addition, during nearly three decades of serving the Lexington area, Tetra Tech has worked alongside LFUCG personnel on numerous projects, work that has given us the local experience and judgment to provide quality services.

Our performance as the current MS4 Program Manager for LFUCG is a testament to our reputation of character and integrity. We have been successful at creating an atmosphere of trust and respect with the many agencies within LFUCG: Water Quality, Environmental Policy, Engineering, Planning, Law, and others. We have delivered high-quality products on time and within budget, and in a spirit of teamwork with LFUCG staff. As a result, LFUCG has met all the deadlines in the Consent Decree and MS4 permit and has developed a reputation in the community of improving the quality of life in Lexington.

### THE QUALITIES YOU SEEK

The characteristics that you seek in a firm are embodied in our people and in the way we approach projects:

- **Character and Integrity** – These qualities are demonstrated by the staff that represents Tetra Tech to our clients. We recognize the essential need to earn the trust of the many stakeholders that will be involved in a project of this magnitude.
- **Reputation** – Tetra Tech’s reputation in Lexington is one of providing a high level of service to LFUCG. We do this while collaborating

with your staff and other team members to ensure your goals are met.

- **Judgment** – Judgment involves asking the question “What is important?” We believe in the course of this work that what is important is not only what will happen in the near term, but also in the long term. With this perspective, we can weigh options and evaluate solutions with a broader base of decision making.
- **Experience** – We have designed our team to provide Lexington with the best local capability along with the experience that we have developed in multiple programs throughout the country. Our goal is to build upon the depth of experience in the MS4 program while bringing you tools that have been developed in other communities.
- **Efficiency** – Efficiency in professional services means “hitting the ground running.” Because of past experience, there will no learning curve for our staff. We understand the project and your objectives.



### SOCIAL RESPONSIBILITY

At Tetra Tech, we seek clear sustainable solutions that improve the quality of life. We take this responsibility seriously because Tetra Tech’s work often places us at the center of our clients’





challenges regarding environment, safety, and sustainability. These challenges often involve the opinions of many stakeholder groups from the public, industry, and government who seek Tetra Tech's advice on complex issues. To provide solutions to these challenges, we believe in maintaining our technical objectivity, and as a policy, we do not own individual technologies.

We have earned our reputation for technical objectivity over the last four decades. We have helped thousands of towns, cities, industries, and governments find sustainable solutions to complex issues concerning resource management and infrastructure. We have designed progressive "green" buildings in New York City, helped the Department of Defense with pollution prevention and clean-up, and helped many Fortune 500 companies balance environmental needs with business goals. Tetra Tech companies hold memberships with the US Green Building Council, the Chicago Climate Exchange, and the Environmental Protection Agency's (EPA) Climate Leaders.

We also encourage our professionals to participate in outreach programs. Tetra Tech associates and offices participate in many non-profit agencies and projects within their local communities. As a sponsor of the non-profit humanitarian organization Engineers without Borders—USA, Tetra Tech is committed to providing sustainable water, transportation, and housing systems to the developing communities that need them most.

## REFERENCES

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The following references can attest to our character and reputation.

**Mr. Brad Frazier, P.E.**

Director of the Division of Engineering  
LFUCG  
(859) 258-3410  
[bfrzier@lexingtonky.gov](mailto:bfrzier@lexingtonky.gov)

**Mr. Charlie Martin, P.E.**

Director of the Division of Water Quality  
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**Ms. Susan Plueger, P.E.**

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**Mr. Mark Day, P.E., AAE**

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**Mr. Steve Bourne**

Hopkinsville Surface and Stormwater Utility  
(270) 887-4285  
[sbourne@comdev-services.com](mailto:sbourne@comdev-services.com)



## **THIRD ROCK CONSULTANTS**

### **Overview**

Third Rock is recognized as a leading environmental firm in our region, achieving this distinction through a combination of superior technical skills and commitment to meeting clients' needs. Their services have long included environmental engineering design, biological and ecological analyses, environmental permitting and mitigation, and NEPA documentation. Third Rock serves a wide range of private and public clients, including industry and government agencies, who are faced with challenges that demand environmental experience and technical expertise.

Third Rock has achieved a reputation for providing quality environmental services in today's challenging regulatory climate for several reasons:

### **Unparalleled Environmental Expertise and Years of Experience**

Third Rock's clients benefit from the extensive knowledge and experience of their professional staff. They take pride in their multidisciplinary team of environmental professionals, including several recognized experts. These experts are not just names on a resume but are in the field bringing a long history of observation of Lexington's streams to each monitoring event and assessment.

### **Outstanding Resources**

Third Rock specializes exclusively in environmental consulting, and has the capability, capacity, and proven track record to successfully complete the most complex projects. Third Rock has a history of successful projects and satisfied clients in numerous states. With a full-time staff of just 21, they have completed multi-million dollar projects on schedule and produce high-quality deliverables. They are able to do this because of a progressive and straightforward organization structure and a hands-on-owner who personally schedules personnel time and manages project deadlines. Their professional staff is supported by an experienced team of environmental technicians, technical writers, GIS analysts; state-of-the-art equipment, hardware, and

software; a fully trained and equipped dive team; and a state-of-the-art in-house aquatic biological laboratory. These resources have allowed Third Rock to readily expand its scope to serve your staff in accomplishing the program objectives.

### **Corporate Priorities**

Third Rock actively perpetuates a corporate culture of integrity, innovation, continued learning, and efficiency. Ethical business practices and consulting approaches are of utmost importance at Third Rock. Innovation also plays a critical role in the firm, and they specialize in applying innovative, cost-effective approaches to projects. We believe the public is best served by increasing the internal capacity of LFUCG's staff and cutting or modifying programs that no longer serve the public's best interest.



## SECTION 5 » PAST RECORD AND PERFORMANCE

### OVERVIEW

This section provides an overview of similar stormwater projects performed by the Tetra Tech team for LFUCG and other clients. Similarities among these projects are highlighted in matrix format, showing the relationship among the current scope and these projects.

### PROJECT HISTORY WITH LFUCG

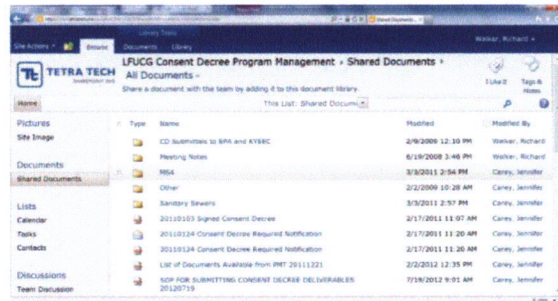
The Tetra Tech team has enjoyed a 30-year working relationship with LFUCG. Following is a partial listing of current and completed stormwater-related projects, performed on schedule and within budget for the LFUCG. As part of these programs, the quality of work, control of costs, and ability to meet schedules has been maintained. For example, under the current MS4 program management contract for LFUCG, we have worked in a collaborative manner with your staff to ensure completion of MS4 permit milestones on time and in a cost-effective manner.

Through the work completed to date, the products Tetra Tech has produced have met with the approval of LFUCG staff and the public has been supportive of the program:

- MS4 Annual Program Management Services
- Development of the Stormwater Quality Management Program (SWQMP) as part of the EPA Consent Decree Negotiations
- Stormwater Manual
- Vaughns Branch / Sugar Mill Flood Mitigation
- Danby Corners FEMA Letter of Map Revision

- Expansion Area 2 Stormwater Master Plan
- Southland Drive Drainage Study
- North Elkhorn Hydrologic and Hydraulic Model
- Town Branch Hydrologic and Hydraulic Model
- Detention Basin Maintenance Program
- MS4 Permit Stormwater Monitoring.

### SIMILAR PROJECTS



The following similar projects are a sampling of relevant MS4 and stormwater projects our team has completed within the last 10 years. We have completed many more projects of similar and greater scope and can provide any additional details upon request.

Each project description in this section includes the name of the client organization and name and information for a person there to contact for a reference. Each can speak to the Tetra Tech team's quality of work; completeness of work; accuracy of services; success in controlling costs; success in maintaining schedules and meeting deadlines; and responsiveness to staff comments.





### Tetra Tech Team – Representative Project Experience Table

Project Name	Program Management	Technical Writing	USEPA Reports	Ordinance and Policy Development	Training and Workshops	Water Quality Monitoring	Project Database	Critical Path Scheduling	Technical Support
Municipal Separate Storm Sewer System (MS4) Annual Program Management Services, Lexington, KY	●	●	●	●	●	●	●	●	●
MS4 Permit Improvement Guide, United States	●	●	●		●		●		●
MS4 Program Evaluation Guide, United States	●	●	●		●		●		●
Stormwater Manual for New Development, Fayette County, KY	●	●		●	●				●
Post-Construction Stormwater Guidance, United States	●	●		●	●				●
Stormwater Design Manual, Dublin, OH		●		●	●				●
CSO Green Infrastructure Program (CS 1522), Detroit, MI	●	●		●	●		●	●	●
Hinkston Creek Watershed Plan and BMP Cost-Share, East-Central, KY	●	●			●	●	●		●
Floyds Fork Watershed Water Quality Model Development, KY		●	●		●		●		●
Third Fork Creek Watershed Plan and General Program Support, Durham, NC	●	●		●	●				
Support for Chesapeake Bay TMDL Watershed Implementation Plan Development	●	●			●		●		●
LID Manual for the Lower Maumee and Ottawa River Watersheds, Toledo, OH		●			●				

Project Name	Program Management	Technical Writing	USEPA Reports	Ordinance and Policy Development	Training and Workshops	Water Quality Monitoring	Project Database	Critical Path Scheduling	Technical Support
NPDES Stormwater Phase II Program Support, MN	●	●			●				●
Watershed Plan Development and Water Quality Improvement Projects / Award and Utilization of 319(h) Grant Funding, Corbin City Reservoir / Laurel River Watershed, KY	●	●			●	●	●	●	●
Dix River Watershed Plan Development, Clark, Boyle, and Rockcastle Counties, KY	●	●			●	●	●	●	●
Consent Decree and MS4 Permit Monitoring, Lexington, KY	●	●	●		●	●	●	●	●
Stream Restoration Inspection and Maintenance, Louisville, KY	●	●			●	●			●
Wolf Run Watershed Plan Development, Lexington, KY	●	●			●	●	●	●	●



## REPRESENTATIVE PROJECT EXPERIENCE

### **Municipal Separate Storm Sewer System (MS4) Annual Program Management Services, Lexington, KY**

**PROJECT HIGHLIGHTS:** Annual Program Management; MS4 Permit Compliance and Permit Renewal; Water Quality Management Fee; Erosion and Sediment Control; Low Impact Development – Green Infrastructure; Post-Construction Stormwater Standards; Water Quality Monitoring

**PROJECT DURATION:** Ongoing since 2008

**PROJECT STAFF:** Richard Walker, P.E., Program Manager; Jennifer Carey, P.E., Project Engineer; Barry Tinning, Senior Policy Analyst; John Kosco, P.E., Senior Engineer

**REFERENCE:** Lexington-Fayette Urban County Government; Charles H. Martin, P.E.; Director, Division of Water Quality; (859) 425-2400; [chmartin@lexingtonky.gov](mailto:chmartin@lexingtonky.gov)



Tetra Tech has been providing MS4 annual program management services since 2008 for implementing Lexington’s EPA Consent Decree and the MS4 permit issued by the Commonwealth of Kentucky. During that time, the Tetra Tech/LFUCG team has achieved compliance with all aspects of the MS4 program as evidenced by the following:

- All 153 MS4 permit requirements have been met, along with 167 measurable goals in LFUCG’s Stormwater Quality Management Program
- All 40 stormwater performance standards in the Consent Decree have been met

- The Kentucky Division of Water inspected LFUCG’s MS4 program in 2010 and 2012 found no deficiencies.

The work performed by Tetra Tech has included the following:

- Preparing the application for the 2014 MS4 permit renewal and assisting LFUCG management in the permit negotiations with the Kentucky Division of Water
- Planning and preparing the necessary documentation for MS4 compliance inspections by the Kentucky Division of Water in 2010 and 2012
- Developing the MS4 Stormwater Quality Management Program, including sections on public education / involvement, illicit discharges, construction site runoff, industrial runoff, water quality monitoring, municipal operations, and post construction
- Providing project management and technical support for implementing the water quality management fee in 2010 that generates approximately \$11,000,000 per year
- Conducting training for LFUCG staff on illicit discharge elimination and construction site inspections
- Developing an inventory of industrial facilities and high-risk commercial facilities
- Developing new ordinances for the industrial stormwater discharge program, maintenance of stormwater controls on private property, and erosion control
- Developing an enforcement response plan for construction sites and industrial facilities
- Developing stormwater pollution prevention plans for two wastewater treatment plants
- Developing and implementing the water quality monitoring program, consisting of fish and macroinvertebrates, surface water collection and analysis during dry weather and after rain events, and habitat evaluations

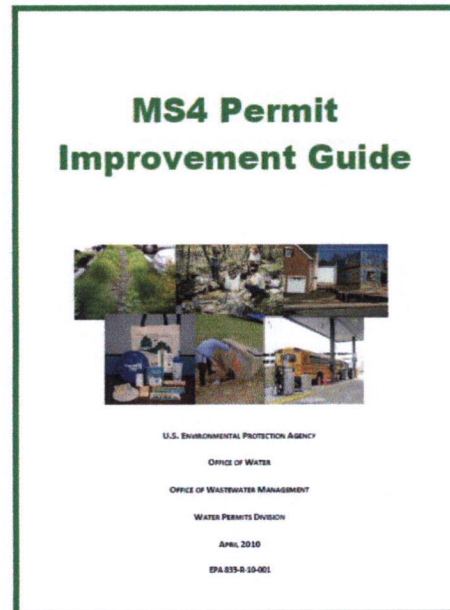


- Maintaining a SharePoint site of Consent Decree and MS4 Permit deliverables for access by LFUCG staff
- Developing Low Impact Development (Green Infrastructure) Guidelines for design and construction
- Planning and coordinating the quarterly meetings with the citizen Stormwater Stakeholder Advisory Committee
- Evaluating the effectiveness of the city's post-construction stormwater management standards for new development and redevelopment
- Developing a Stormwater Management Plan Executive Summary checklist that allows staff to quickly determine if the proposed stormwater controls meet the water quantity and water quality requirements of the LFUCG Stormwater Manual
- Conducting monthly coordination meetings with city staff to review deadlines and work completed on MS4 Permit and Consent Decree requirements
- Conducting monthly coordination meetings with three different divisions to resolve issues related to the permitting, inspection, and enforcement of erosion and sediment control BMPs
- Conducting an annual workshop with over 120 construction industry representatives on erosion and sediment control
- Conducting audit inspections of over 50 construction sites
- Attending pre-bid and pre-construction meetings on capital projects and making presentations on the permitting, inspection, and enforcement procedures
- Conducting watershed assessment on the major watersheds in Fayette County
- Conducting an audit of the MS4 program in 2014 to identify areas that need improvement
- Preparing the MS4 annual report.

## MS4 Permit Improvement Guide, United States

**PROJECT DURATION:** October 2008 – April 2010

**REFERENCE:** U.S. Environmental Protection Agency; Rachel Herbert; 202.564.2649



For EPA Headquarters, Tetra Tech developed an MS4 Permit Improvement Guide to assist State and EPA Regional MS4 permit writers in developing stronger MS4 permits. Tetra Tech began by identifying examples of effective MS4 permit language from over 20 different Phase I and Phase II MS4 permits. Tetra Tech then worked closely with EPA workgroups to develop model permit language for each of the eight main components typically addressed in MS4 permits:

- Stormwater Program Management
- Public Education and Outreach/Public Involvement
- Illicit Discharge Detection and Elimination
- Construction
- Post-Construction or Permanent/Long-Term Stormwater Control Measures
- Pollution Prevention/Good Housekeeping
- Industrial Stormwater Sources
- Monitoring, Evaluation, and Reporting.



Tetra Tech drafted the guide to include examples of permit conditions and supporting rationale that could be used in NPDES permits. Tetra Tech also developed guidance for the permit writers to explain why certain provisions were included, and how they can customize the provision to meet their unique needs. This guidance for the permit writer also included additional resources and information to help support their MS4 permit.

Each chapter of the guide includes information about the existing legal authority that allows the permit writer to include that requirement, and the model permit language includes placeholders for relevant information that should be inserted by the permit writer (such as deadlines or frequency of required actions).

The guide also includes an annual report template that permit writers can use, and a detailed section of definitions.

## MS4 Program Evaluation Guide, United States

**PROJECT HIGHLIGHTS:** Developed a guide on conducting MS4 evaluations, including questions to ask to assess effectiveness and compliance; guide provides detailed evaluation worksheets; prepared materials for and conducted training via webcast and 2-day training class attended by state and U.S. EPA staff.

**PROJECT DURATION:** January 2005 – October 2007

**PROJECT STAFF:** John Kosco, P.E., CPESC; Martina Frey; Christy Williams

**REFERENCE:** U.S. Environmental Protection Agency; Jenny Molloy; [molly.jennifer@epa.gov](mailto:molly.jennifer@epa.gov)

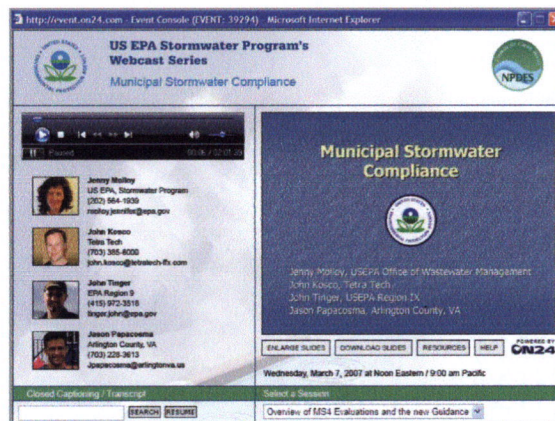
Tetra Tech developed for EPA a Municipal Separate Storm Sewer System (MS4) Program Evaluation Guidance (Field Test Version). This guide describes how an EPA or state inspector can conduct an MS4 evaluation, and provides guidance on the types of questions to ask for each stormwater program area.

The guide covers pre-evaluation preparation such as evaluation notification procedures, materials to review before the evaluation, and conducting a review of annual reports. The guide also discusses two types of evaluations: a screening-level evaluation and a detailed onsite evaluation. For the

chapter on conducting detailed onsite evaluations, Tetra Tech identified the common activities expected to be conducted by an MS4 for each major program area. Tetra Tech then described in the guide the types of questions that an evaluation should ask to assess effectiveness and compliance.

The guide included a detailed set of program evaluation worksheets (Appendix B) and field inspection worksheets (Appendix C) to assist state or EPA staff in conducting an evaluation. The worksheets can be completed during the evaluation to ensure that all relevant topics are addressed.

To train state and EPA staff, Tetra Tech assisted EPA in holding a 2-hour webcast on March 7, 2007 that described key aspects of the MS4 Program Evaluation Guidance. John Kosco of Tetra Tech was the primary speaker, and an estimated 2,000 people participated in this webcast. An archived copy of this webcast is available at <http://goo.gl/alhFJ>.



Tetra Tech also developed a set of training materials for a 2-day class with the purpose of educating EPA and state inspection staff on how to conduct an MS4 evaluation. Tetra Tech has trained EPA staff and state staff from California, Hawaii, and Texas on how to conduct MS4 evaluations.



## **Stormwater Manual for New Development, Fayette County, KY**

**PROJECT HIGHLIGHTS:** Guide for the design of the storm drainage infrastructure for Lexington-Fayette County; design standards for stormwater quality and quantity; erosion and sediment control regulations

**PROJECT COMPLETION:** 2001

**PROJECT STAFF:** Richard Walker, P.E., Project Manager

**REFERENCE:** Mr. Brad Frazier, P.E., (859) 258-3410; Lexington-Fayette Urban County Government; 101 East Vine Street; Lexington, KY 40507



Tetra Tech was selected by the Lexington-Fayette Urban County Government (LFUCG) to prepare a Stormwater Manual for the design and construction of stormwater facilities in new development. To build consensus on the major issues, many meetings were held with neighborhood groups, private engineers, developers, homebuilders, and LFUCG staff.

The manual was adopted by the LFUCG on January 1, 2001, and serves as the guide for designing storm drainage infrastructure for stormwater quality and quantity. The manual contains new development requirements for floodplain management, stream buffers, flood control, and water quality protection. It contains design criteria and design procedures for inlets, storm sewers, culverts, channels, and best management practices, including erosion and sediment control. To provide additional flood protection, new structures are required to be 25

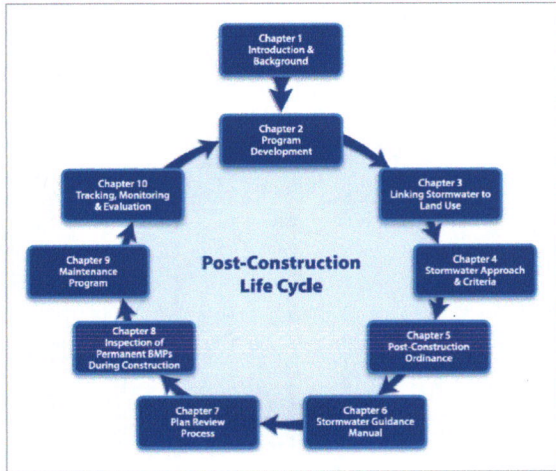
feet from the floodplain, and the lowest opening to the structure is required to be 2 feet above the 100-year floodplain elevation. New detention basins in residential areas will be on a separate lot and will be owned, operated, and maintained by the government.

Design criteria are given for bioretention systems; infiltration systems such as modular pavement, swales, infiltration basins, and vegetated filter strips; detention ponds; extended detention ponds; wet ponds; and constructed wetlands. The manual also includes significant incentives for developers to establish riparian buffer zones along streams. Bioengineering principles are emphasized in lieu of the traditional concrete and riprap solutions to streambank stabilization.

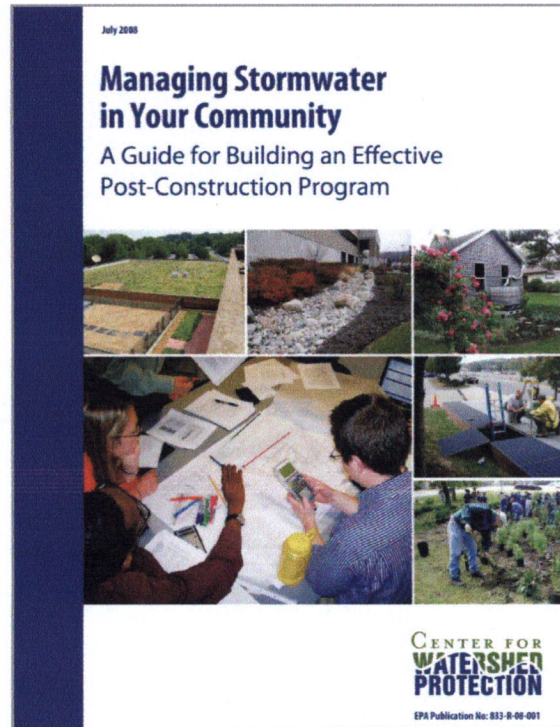
Developers will also have to comply with new erosion and sediment control requirements, such as no construction in floodplains; a maximum exposure time for disturbed areas; limits on maximum disturbed areas; BMPs for erosion control; and BMPs for sediment control.



## Post-Construction Stormwater Guidance, United States

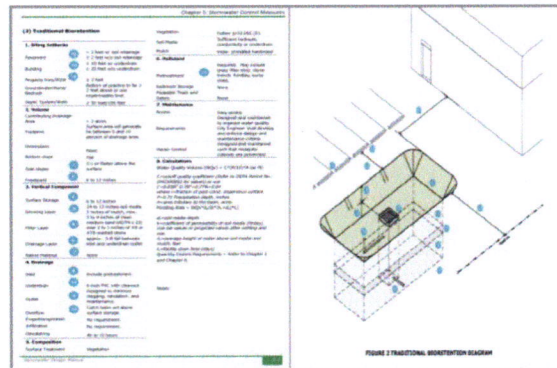


Under contract to EPA, Tetra Tech teamed with the Center for Watershed Protection to develop “Managing Stormwater in Your Community: A Guide for Building an Effective Post-Construction Program.” Tetra Tech managed the development of this guidance and was the lead author on several chapters. Tetra Tech also provided editing and graphics support to produce the final document. This post-construction guide provides stormwater Phase II MS4s with practical guidance, insights, and tools to build effective post-construction programs. The guide walks a Phase II stormwater program manager through a “post-construction program life cycle” from program development, an ordinance, plan review, inspections, maintenance and other key components of a post-construction program. The guide, available at [www.cwp.org/postconstruction](http://www.cwp.org/postconstruction), also includes eight electronic tools that are downloaded separately and help municipalities with program implementation.



## Stormwater Design Manual, Dublin, OH

**CLIENT:** City of Dublin, OH  
**COMPLETION DATE:** August 2012  
**REFERENCE:** Barbara Cox, City of Dublin, 5800 Shier Rings Rd., Dublin, OH 43016, 614.410.4641



The City of Dublin hired Tetra Tech to revise its Stormwater Design Manual to address the new Bridge Street Corridor, form-based development code. The manual was created to provide guidance and policies on effective and preferred stormwater management approaches within the

