2010

INAFSM ANNUAL CONFERENCE

ABSTRACTS & BIOGRAPHIES

2010 INAFSM ANNUAL CONFERENCE

Dr. William Guertal, Director, USGS Indiana And Kentucky Water Science Centers

A new USGS Flood Inundation Mapping Initiative

Plenary Session A1

Dr. William Guertal,
U.S. Geological Survey

A powerful new tool for flood response and mitigation is digital geospatial flood-inundation maps that show flood water extent and depth on the land surface. Flood-inundation maps that are tied to U.S. Geological Survey (USGS) real-time streamgage data and National Weather Service (NWS) flood forecasts enable officials to make timely operational and public safety decisions during floods. The USGS has started a new National Flood Inundation Mapping Science Initiative – the purpose of this Initiative is to develop a comprehensive and partner-based National USGS Flood Inundation Mapping Science Program designed to meet USGS science strategy goals related to natural hazards and stakeholder needs. The USGS is working in the following focus areas for flood inundation mapping science: flood documentation studies; static flood-inundation map libraries; and, real-time dynamic flood inundation mapping. Working with partners including the National Weather Service (NWS), U.S. Army Corps of Engineers (USACE), the Federal Emergency Management Agency (FEMA), state agencies, cities, and universities, the USGS is providing flood inundation mapping science resources to help build more resilient communities.

2010 INAFSM ANNUAL CONFERENCE

Manuela Johnson,
Indiana Department of Homeland Security
Brandon Brummett, U.S. Army Corps of Engineers

The Indiana Silver Jackets – and overview of activities and projects

Plenary Session B

Manuela Johnson
Mitigation Section Chief
Indiana Department of Homeland Security

Brandon R. Brummett, P.E., PMP
Outreach Coordinator
Louisville District
US Army Corps of Engineers

The Indiana Silver Jackets is an inter-agency hazard mitigation taskforce that serves the citizens of Indiana by working together to protect life and property from natural hazards. The taskforce brings Federal agencies, state agencies, regional and local agencies, and universities together to mitigate the risk of natural hazards through:

- enabling the effective and efficient sharing of information,
- leveraging of available agency resources,
- providing improved service to our mutual customers, and
- promoting wise stewardship of the taxpayers' investment.

The Indiana Silver Jackets has undertaken a number of initiatives to address critical issues related to natural hazards. These initiatives have benefited Indiana by providing important tools and resources to the emergency response and hazard mitigation planning communities and by providing education and outreach information to enable citizens to better protect themselves and their property from natural hazards.

2010 INAFSM ANNUAL CONFERENCE

Jody Arthur, Indiana Department of Environmental Management

Resources from the Indiana Water Monitoring Council

Plenary Session C

Jody Arthur, Indiana Department of Environmental Management
President, Indiana Water Monitoring Council Board of Directors

The Indiana Water Monitoring Council (InWMC) serves as a broad-based, state-wide body to enhance the communication, collaboration and coordination of professionals, organizations, and individuals involved in water monitoring within Indiana. Founded in 2008, the InWMC provides a forum for communication among organizations and agencies that conduct water monitoring and facilitates the development of collaborative monitoring strategies. The InWMC also promotes the sharing of data and information regarding effective procedures and protocols for sample collection and analysis. The InWMC addresses the full range of water resources, including ground and surface waters, physical, chemical and biological components, and associated wetland resources within Indiana. The InWMC can assist Indiana stormwater and floodplain managers in their work through its connections with agencies, organizations and individuals in the water resources field and the resources it provides.

2010 INAFSM ANNUAL CONFERENCE

Julia McCarthy, CFM

The Community Acknowledgment Form: What is "Reasonably Safe from Flooding", and considerations for a Floodplain Administrator.

Floodplain 1A

Julia McCarthy, CFM

FEMA Region V

In some instances applications for Letters of Map Change (LOMCs) require the submittal of the Community Acknowledgement Form (Form). The Form often causes some concern at the local level because it requires the signature of the floodplain administrator in order for FEMA's review of the LOMC to continue. This session will review the types of LOMCs that require the Form, review the considerations for the local floodplain administrator to ponder before signing the document, and describe the type of data the community should have in their files prior to signing the Form.

In most cases the Form is the community's acknowledgment that a structure, or land, is "reasonably safe from flooding." FEMA has issued a Technical Bulletin as guidance on what is "reasonably safe from flooding" and the types of data FEMA may request if the LOMC reveals a potential violation. The methods outlined in Technical Bulletin 10-01 will be reviewed and discussed during this session.

2010 INAFSM ANNUAL CONFERENCE

David P. Nance, P.G

INDIANA SILVER JACKETS TASK TEAM

NBR ELKHART RIVER WEST LAKES REPORT

Floodplain 2A

Jomary Baller, IDNR, Division of Water
David P. Nance, P.G., IDNR, Division of Water
Rodney Renkenberger, R.L.S, C.F.M., Maumee River Basin Commission
Kenneth E. Smith, P.E., IDNR, Division of Water

In May 2010 the Indiana Silver Jackets (ISJ), a voluntary multi-agency natural hazard mitigation team, announced the completion of a report for the North Branch Elkhart River and the West Lakes watershed. This report was prepared for a local steering group known as the "Flood Focus Committee of the Elkhart River Alliance".

A link to the report can be found on the Indiana page of the national Silver Jackets web site at: http://www.iwr.usace.army.mil/nfrmp/state/factIndiana.cfm.

In brief this study found that the North Branch Elkhart River (NBR Elkhart River) watershed/drainage basin has fairly unique natural regional relationships between geology, topography, naturally existing storage, precipitation, stream flow, the groundwater resource, lake levels, and flooding. Water level issues exist in many previously developed areas around lakes within the basin, which range from seasonal high water levels that persist over extended time frames and limit road access to existing homes, to infrequent but potentially devastating flood levels that could cause extensive property damage. Over several decades previous studies have stated that flood damage in the watershed can be attributed to a combination of factors, with a major cause being the construction of structures in the floodplain, many at or below the minimum recommended elevation. Data shows that during normal conditions, Waldron Lake's outlet channel (the outlet for all flow from the larger drainage basin) carries a large rate of flow, and it responds with a substantial increase in flow during flooding events.

While no simple, single, feasible construction solution exists that can solve all water resource issues in this basin, this review found many opportunities to cumulatively improve the situation. This review also confirmed that the unintended consequence, making flooding conditions in the basin much worse than currently experienced, could occur if future human activities are not carefully evaluated and coordinated from a multi- county regional perspective.

David B. Knipe, PE, CFM
Indiana Department of Natural Resources
Division of Water

This talk will focus on various floodplain mapping initiatives now being pursued by the Division of Water, including an update on Map Modernization, Risk MAP Early Demonstration projects, the Wabash River discovery meeting project with Illinois, the Coordinated Needs Management Strategy project, and INFIP, the Indiana Floodplain Information Portal.

2010 INAFSM ANNUAL CONFERENCE

W. B. Smith, P.E., CFM

OFMA Disaster Response Team Summary

Floodplain 4A

W. B. Smith, P.E., CFM

President, *Hydropower International Services Inter-National Consultancy, L.L.C.*

Past Chair, Oklahoma Floodplain Managers Association

The purpose of the *Disaster Response Team* (DRT) program is to assist the Communities (local municipality, county, or Indian tribe) with personnel support, on-site investigations, temporary housing/utility planning, permitting activities, etc. prior to, during, and after a natural disaster in the Special Flood Hazard Area. This may include flood, tornado, fire, ice, direct line winds, earthquake, etc. When a natural disaster occurs, the local floodplain administrator, and city officials are usually overwhelmed by the activities that are required to be performed in a very short time period. The OFMA DRT program is designed to assist the Communities with support of these activities to restore the community to normal as quickly as possible while complying with local ordinances, resolutions, or regulations that are part of the National Flood Insurance Program. The DRT response occurs from the imminent time of disaster until a Federal or State Disaster Declaration occurs and/or Federal/State involvement is initiated under the Federal/State Declaration. The DRT is able to mobilize “on a moment’s notice” and be on-site generally prior to any Federal or State teams to begin collection of data for assessments.

Individuals Involved: Engineers or Floodplain Administrators (CFM preferred) to assist the local FPA with Substantial Damage Assessments, Determination of Flood Elevations, Permitting, Education, Public Outreach, Temporary Housing Coordination and Utility Assistance Coordination, etc. to local land owners. Building/Code Inspectors would assist the local officials in performing mechanical, electrical, plumbing inspections, etc. Surveyors would assist with high water marks and GPS locations of structures, etc.

The DRT currently has 68 volunteers located throughout the state of Oklahoma. The Coordinator is located in the Tulsa area and generally covers the eastern half of the State and the Assistant Coordinator is located in the Oklahoma City area and generally covers the western half of the State.

OFMA, Inc. is a non-profit 501C3 professional association with members throughout the State of Oklahoma. OFMA, Inc. maintains more than 400 individual member, 29 corporate sponsor firms and 3 Indian Tribes. OFMA, Inc. has been in existence since 1990! All of our meetings are open and anyone interested is encouraged to attend our meetings and become a member.

2010 INAFSM ANNUAL CONFERENCE

Kelly Myers, IN Dept. of Transportation

Lacey Duncan, IN Dept. of Natural Resources

Improving Indiana's Surface Water Data

Floodplain 5A

Kelly Myers, Environmental Manager,
Indiana Department of Transportation
Lacey Duncan, Environmental Manager
Indiana Department of Natural Resources

The Indiana Geographic Information Council's (IGIC) Waters Workgroup has established a strategy to improve the U.S. Geological Survey's National Hydrography Data (NHD) for Indiana. This new hydrography layer will include updated and corrected stream and lake names, improved positional accuracy (aligned to photography no later than 2005), consistent hydrography densities (based on 6-acre drainage catchments) and updated features. Two projects are underway to create this new hydrography layer for the Phase One area: updating the Geographic Names Information System and upgrading the NHD for the Great Lakes Initiative Area. Kelly and Lacey will describe these projects as well as plans and needs to create this new hydrography layer for the entire state.

2010 INAFSM ANNUAL CONFERENCE

Scott Morlock, U.S. Geological Survey

Siavash Beik, Christopher B. Burke Engineering

A Pilot Project to Develop a Flood Response Plan For an Indiana Community

Floodplain 7A

Scott Morlock, Supervisory Hydrologist

USGS Indiana Water Science Center

Siavash Beik, Director, Water Resources Department

Christopher B. Burke Engineering, Ltd

In spring, 2010 the U.S. Geological Survey (USGS) released a new National real-time hydrologic notification service – this service is a publically-open application that will send email and text notices upon the exceedance of subscriber-selected water-level, streamflow, groundwater level, precipitation, or water-quality data thresholds or ranges at subscriber-selected streamgages. With release of this service, Christopher B. Burke Engineering Ltd (CBBEL) and the USGS Indiana Water Science Center saw a need to assist Indiana communities in the development of flood response plans that are tied to stream stages monitored by USGS streamgages. A flood response plan can be an electronic and/or printed plan that specifies an action to be taken for a given stream stage, such as a road closure, evacuation, or sand bagging. By taking quick actions in response to stream-stage notifications for a streamgage monitored by a community, community emergency management officials can optimize responses to keep community citizens, property, and infrastructure safe. CBBEL and the USGS, under the authority of a USGS Technical Assistance Agreement, volunteered their efforts and worked with the community of Spencer, Owen County, in the development of flood response plan for Spencer as a pilot project. The intent of this work was to provide Spencer with a straightforward, robust flood response plan based on monitored stages from the USGS streamgage White River at Spencer; and to develop a plan that could be used by other Indiana communities as a template for developing their own flood response plans to increase resilience of their communities to flood hazards.

2010 INAFSM ANNUAL CONFERENCE

Sky K. Medors, P.E., CFM

Dam Safety – Just Give Us the Dam Basics!

Floodplain 7A

Sky K. Medors, P.E., CFM

Lawson-Fisher Associates, P.C.

Many people are very familiar with the floodplain management regulations and guidelines, but have no idea what the requirements are for dams. This session will provide a brief summary of the requirements for dams in the State of Indiana and a look at the issues that floodplain managers may encounter when dealing with these structures.

Kenton C. Ward, Surveyor
Hamilton County Surveyor's Office
Peggy Shepherd, P.E., CFM
Christopher B. Burke Engineering, Ltd.

In June 2008, southern Indiana experienced heavy rainfalls that produced devastating flooding. Other areas of the country have had similar experiences. Ever wonder what would happen if such rainfalls occurred in your community? How vulnerable are your critical facilities to flooding from such rainfalls?

Hamilton County decided to find out. Ten County owned facilities were selected for the study. The vulnerability of various features of each site (including building entrances, parking areas, and access routes) to local drainage and riverine flooding from "rare" flood events were evaluated. Of particular interest was the June 2008 storm. With the help of the National Weather Service, the June 2008 rainfall was transposed over the West Fork White River watershed above Noblesville and forecast stages at the Noblesville gage calculated as if the rainfall were really occurring. This information was turned into a water surface profile through downtown Noblesville past three of the selected County government facilities. The water surface profile was then turned into flood depth mapping for the vicinity. Different colors were used on the mapping to show the variation in expected peak flood depths. This mapping provided a visual way of seeing the expected depth of flooding at facility buildings, parking lots, and in the streets which affected access to the sites.

The expected water surface profile information was also translated into table form for the vulnerable points for each site. The County can now use those charts to see at what stage on the USGS gage each location begins to be affected. Depth and duration of flooding of that feature for the 100-, 500-, and transposed June 2008 rainfall was also provided.

The County is now taking steps to address the vulnerability issues identified by the study and reduce their risks.

Jennifer Zielinski, PE
Biohabitats, Inc.
2026 Murray Hill Road, Room 107
Cleveland, OH 44106
216.921.4430
jzielinski@biohabitats.com

Urban watershed professionals across the country are facing a vast array of problems resulting from uncontrolled stormwater runoff – flooding, channel erosion, property and infrastructure damage, and degraded water quality. One tool that can help mitigate these problems is stormwater retrofitting. Stormwater retrofits are treatment practices that are inserted into the urban landscape where little or no stormwater management exists. Retrofits encompass a broad spectrum of practice designs, from large regional practices such as constructed wetlands and ponds, to small on-site practices such as bioretention, porous pavement, and rainwater cisterns. In addition to stormwater quality treatment and quantity management, stormwater retrofits can often create spaces that function as community assets, improve habitat, and create vibrant parks and open space, ultimately increasing the value of the project.

This session will provide an introduction to stormwater retrofitting. Locations in the urban and suburban landscape that typically present the most success for stormwater retrofitting will be discussed, along with the types of BMPs that are most appropriate for different sites. Emphasis will be placed on the opportunities that stormwater retrofitting presents to create community spaces and habitat. .

2010 INAFSM ANNUAL CONFERENCE

Jennifer Zielinski, PE

An Adaptable Process for Identifying, Prioritizing, and Implementing Stormwater Retrofits

a {п нВ

Jennifer Zielinski, PE
Biohabitats, Inc.
2026 Murray Hill Road, Room 107
Cleveland, OH 44106
216.921.4430
jzielinski@biohabitats.com

As a follow-up to the session, "An Introduction to Stormwater Retrofitting," this session will present a systematic approach to assess retrofit potential, identify potential retrofits locations, evaluate opportunities, and deliver retrofits.

The process for identifying retrofit opportunities starts with understanding larger community or watershed goals and objectives. Through a dialogue and scoping process, these larger goals and objectives are translated into specific retrofitting objectives, minimum performance criteria, and preferred treatment options. Desktop analyses and field investigations are performed to identify specific retrofit locations and treatment practice designs for those sites. Once field investigations are complete, the retrofit opportunities must be analyzed and evaluated against identified goals and objectives to determine potential benefits. This evaluation feeds into a prioritization process to rank retrofits for actual implementation. The final step in the process, and perhaps the most challenging, is retrofit delivery – design, construction, and maintenance. Historically, many communities have implemented retrofits as large capital improvement projects on public lands. However, much greater community coverage can be achieved through creative combinations of funding, education, and permitting.

Many communities across the country are developing and implementing stormwater retrofit programs in response to regulatory requirements, such as TMDLs, drinking water protection, and impervious cover treatment goals set forth in NPDES permits. This heightens the importance of an initial stormwater retrofit scoping process as well as the subsequent analysis and evaluation to determine the effectiveness of the proposed suite of retrofits. As such, this session will also highlight adaptations and enhancements to the stormwater retrofit process to integrate more stringent scoping and accounting methods to meet regulatory requirements.

Lori Gates, CPESC, CPSWQ, CMS4S

"NPDES Stormwater Program Updates"

a{πo.

Lori Gates, CPESC, CPSWQ, CMS4S

Christopher B. Burke Engineering

Come and hear the latest about the direction of EPA's NPDES Stormwater Program including issues facing MS4, Construction, and Industrial permittees such as implementing regulations, pending regulations, and regulations on the horizon.

2010 INAFSM ANNUAL CONFERENCE

Scott Dompke, GRW

Shareen Wagley, Muncie Delaware County

Transforming a Neighborhood Through Stormwater Management

a{π ɪ o/

Scott Dompke
Stormwater Program Director
GRW Inc.
7112 Waldemar Drive
Indianapolis, IN 46268
Phone: 317-347-3650
Fax: 317-347-3656
e-mail: sdompke@grwinc.com

Shareen Wagley
Muncie Delaware County MS4 Coordinator
Muncie Sanitary District
300 N. High Street
Muncie, IN 47305
Phone: 765-213-6468
Fax: 765-747-4771
Email: swagley@munciesanitary.org

Abstract

The federal Stormwater Phase II requirements prompted the Muncie Sanitary District to establish a dedicated stormwater division after many years of sanitary and combined sewer operations. The District had a long history of protecting and monitoring local waters through its Bureau of Water Quality. The first stormwater rate became effective in 2007 and bonds were sold to finance 13 capital improvement projects. The benchmark project of the initial capital improvement program utilized effective stormwater management to transform an existing neighborhood from one that suffered for decades with standing water and deteriorated property values into a revitalization area for which the residents and the District will take pride.

On the surface, the 18th and Macedonia project appeared to be a straightforward stormwater drainage project. Under the water, the Muncie Sanitary District worked with the Delaware County Drainage Board to replace an 1890s regulated drain. Behind the scenes, the District negotiated with 72 individual property owners to obtain easements without compensation, to install the stormwater collection system. On the watershed level, the District used Clean Water Act Section 319 cost-share grant funds to construct the bio-swales on private property to protect water quality. The result will serve the residents for many years and be a model project for future improvements.

Alisa Peterson
CBI Systems, Ltd.

Many software products are database management applications which can drastically reduce the time and effort spent managing MS4 storm water permit programs. A number of them are each designed to serve as a comprehensive SWMP database designed specifically to assist Phase I and II MS4's in meeting centralized records and annual reporting requirements. Data can be stored for each of the program BMP's providing BMP to State-specific Annual Report capabilities. Some programs include a built-in GIS map, interface to ESRI mapping products, unlimited linkage of photos and files, and modules to track, inventory and inspections for outfalls, illicit discharges, construction sites, post-construction sites, industrial/commercial/municipal facilities, citizen reports, and training records.

The six “Minimum Control Measures” required under the National Pollutant Discharge Elimination System (NPDES) Phase II permitting program are well known to those working in the smaller municipalities that fall under Phase II jurisdiction. The measures are public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction-site runoff control, post-construction runoff control, and pollution prevention and good housekeeping.

Phase I cities also manage the MS4 Permit using software to track all of their 10-12 Control Measures, BMPs, Implementation Tasks, and Measureable Goals. IT Departments are choosing to self-host the software to interface with already existing ESRI ArcGIS mapping software and allows importing and exporting of data.

A number of software programs can help you manage all of this, especially for those municipalities that aren’t going to be able to have a large staff to help manage it, input it, file it, track it, and keep it for the life of the permit in case you get audited. Don’t try to manage it with Excel spreadsheets or a simple database. Software will help track everything you need to manage, because it is easy to forget small pieces of information. You can track unlimited data, link unlimited photos and files to records, link files around BMPs and around Outfalls, Illicit Discharges, Construction Sites, Post Construction Sites, Facilities, and Citizen Reports.

2010 INAFSM ANNUAL CONFERENCE

Anne Marie Smrchek, P.E.

Catching Rain in Your Community:
Growing a Rain Garden Program

MS4 - 7B

Anne Marie Smrchek, P.E.
Fort Wayne City Utilities

When the City of Fort Wayne began its green initiative, staff could not have predicted the overwhelming response to the residential rain garden program. As a result, the Residential Rain Garden Program has become the basis for additional green infrastructure initiatives, providing the model for other City-funded sustainable programs, and beginning a broader marketing effort of cleaner, safer water.

To help promote the Residential Rain Garden Program and encourage community participation, the City developed a marketing plan. The plan included development of residential rain garden standards, including plant lists of species native to Fort Wayne. Colorful brochures and a website dedicated to the program, in conjunction with bill stuffers and media events, helped gain community support for the program.

A major component of the program is homeowner incentives. In order for homeowners to receive the incentive, they had to attend a rain garden workshop and complete an application / agreement form. In 2010, homeowners could choose either a $250 plant match or a $150 cash match incentive. By accepting the incentive, homeowners are required to register and maintain their rain garden for a minimum of 3 years.

The homeowner workshop is the key to ensuring that homeowners are able to create a successful rain garden that they will enjoy. The workshops help the homeowner plan, design and become ready to construct their rain garden. To date, over 700 people have attended the rain garden workshops, and nearly 100 rain gardens have been constructed.

A major part of marketing any program is to lead by example. The City has constructed eight demonstration rain gardens to highlight different styles and plants available for constructing a rain garden. Currently, five other demonstration sites are under design, with a goal of 20 constructed demonstration rain gardens to be completed by 2014.

Overall, the Residential Rain Garden Program has been successful. Staff dedication and program marketing helped gain community interest, and staff are continually revising the program based on the feedback from the community.

2010 INAFSM ANNUAL CONFERENCE

Steven R. Iwinski, Environmental Scientist

Polymer Enhanced Best Management Practices for Erosion, Sedimentation Control and Stormwater Treatment to assist in meeting Effluent Discharges and TMDL reductions. **Stormwater 4C & 5C**

Steven R. Iwinski
Environmental Scientist
Senior Associate
Stormwater Management Academy
University of Central Florida
Applied Polymer Systems, Inc.
Northern R&D Lab
PO Box 356
Big Bay, MI 49808
906-869-0606
iwinskis@aol.com
info@siltstop.com

Abstract

Polymer enhanced best management practices (PEBMP) for erosion, sedimentation control and stormwater will visit a compilation of various quantified BMP systems that have shown significant discharge water quality improvements. This presentation will explain the polymer enhanced technology and show various PEBMP methods from prevention of source contamination to TMDL reductions of metals, phosphorous and turbidity of Stormwater . These systems have been quantified by numerous university studies and have been in use over the last fifteen years to assist in maintaining compliance with E&SC and stormwater discharges. New EPA Effluent Guidelines will require the use of PEBMPs that can assure compliance results.

Shareen Wagley, Muncie Delaware County

The Politics of Stormwater

Sű2ЖYǿl·ű$Ж c/

Shareen Wagley
Muncie Delaware County MS4 Coordinator
Muncie Sanitary District
300 N. High Street
Muncie, IN 47305
Phone: 765-213-6468
Fax: 765-747-4771
Email: swagley@munciesanitary.org

Abstract

In the early 1990's 192 of Indiana's Mayors, County Commissioners, Town & University officials were notified they had been designated as MS4 communities. A few communities embraced the program, however many did not. To this day many of Indiana's MS4 communities struggle with program implementation, program funding, citizen understanding and local official apathy. Additionally communities across our state are facing budget shortfalls, staff layoff's and the inability to provide simple government functions.

This session will discuss how to gain interest in your stormwater program. How MS4 staff can further their program while helping their communities. Where Indiana's MS4s should be when your communities are talking budget cuts and funding issues. How state and federal legislation NOT related to stormwater can affect your program and how you can make it a positive. Do you, as an MS4 staff person get involved in your local community, your local politics and how it can help your MS4 program.

2010 INAFSM ANNUAL CONFERENCE

Michael E. Massonne

Stormwater Sustainability

Sű2₪YøI·ű$₪m.

Michael E. Massonne
DLZ Indiana LLC
36 South Pennsylvania, #360
Indianapolis, IN 46204
633-4120, fax 633-4177

"Sustain the Green"

Integration of green infrastructure from the storm water program management perspective

Sustaining a "Green" or "Sustainable" infrastructure initiative can prove to be quite a chore. Just ask folks making their way through the red or green tape to assure that new rain garden doesn't get a ticket for being a "weed patch" or the transportation engineer saying "I gotta do what?"

Sustaining this effort requires an engineer, planner, mediator, facilitator and legal counsel rolled into one. It can seem as though current polices rules and laws were written specifically to prevent the implementation of green or sustainable storm water infrastructure. And guess what? They were; in a sense.

To effectively integrate sustainable storm water infrastructure across a storm water program plan is to plan for involvement. Plan to involve technical staff that understand existing policies, rules and statues. Involve those that understand existing permitting and enforcement policies and procedure. Involve those that reach out to your public for education. Involve those that understand and function within your storm water standards and specifications. This process is very important to the department leaders that need to make every dollar count for the resident and the operations managers that see expanding budgetary needs for equipment, resources and training. In this process, what seems to make sense doesn't. Your efforts will be affected by your city and / or county and department executives as well as the folks that drive the vac truck.

We'll do this because it is a necessary exercise. Sustainable storm water infrastructure seems to make sense in the light of our current storm water NPDES permit compliance requirements. Requirements coming done the pipe may leave few alternatives but to adapt our programs for sustainable infrastructure. Storm water program managers suspect it is or may be inevitable and most of us have embraced storm water quality best management practices.

Working our way through our programs will grow them. It will benefit us in ways we didn't expect and build a bridge of communication that will sustain our efforts for continued improvement and enhancement for delivering services.

In the end, the lesson is not that we got there, but how we got there and that we were taking notes along the way.

Siavash Beik, P.E., CFM, D. WRE

A Pilot Program to Develop a Flood Response Plan For an Indiana Community

Ct22ŘLJtI-ƛy′m!

Siavash Beik, P.E., CFM, D. WRE

Christopher B. Burke Engineering, Ltd.

Siavash Beik, P.E., CFM, D.WRE, *is the Director of Water Resources Department at the Indianapolis office of Christopher B. Burke Engineering, Ltd*. He has a Bachelor of Science degree in Water Resources Engineering and a Master of Science degree in Civil Engineering-Water Resources Engineering from University of Kansas. He has over 30 years of professional experience in water resources planning and management, hydrology and hydraulics, and project management. He has developed and managed several complex stormwater master plans, flood protection projects, and flood insurance studies involving intensive hydrologic and hydraulic modeling. He has been the principal editor, author, or co-author of a number of technical guidebooks, including the Indiana Drainage handbook, Indiana Dam Safety Inspection Manual, Indiana State High Hazard Dams Emergency Action Plans (EAPs), Multi-Hazard Mitigation Plans (MHMPs), Flood Response Plans (FRPs), and comprehensive stormwater management ordinances and technical standards for many Indiana communities. Siavash is an active member of several organizations, including ASCE (National Instructor for HEC-HMS), ASFPM (Board Member and Technical Policy Coordinator), AAWRE (Diplomate), InWMC (founding Board Member), IWRA (1987 President), and INAFSM (founding Chair and Awards Chair). He and his family live in Carmel, Indiana.

2010 INAFSM ANNUAL CONFERENCE

Scott Dompke, GRW Engineers

Transforming a Neighborhood
Through Stormwater Management
{ű2NYøl·ûŜNo/

Scott Dompke
GRW Engineers

Mr. Dompke is a Project and Program Manager for GRW Engineers in Indianapolis, Indiana where he develops water, wastewater, and stormwater programs for municipal clients and promotes GIS delivery of engineering services.

He has over 20 years of management and design experience in municipal government and utilities. He spent 16 years with the City of Bloomington, Indiana, where he was a department head of the water and wastewater utility. He has managed an engineering department, two wastewater plants (15 mgd and 6 mgd), and one surface water treatment plant (24 mgd).

Mr. Dompke has 24 years experience in water, wastewater, and stormwater utility administration, engineering, construction, and GIS. He spent 16 years as a department head with the City of Bloomington, Indiana. He was a project and human resource manager for an engineering department, two wastewater plants (15 mgd and 6 mgd), and one surface water treatment plant (24 mgd) while at the City of Bloomington Utilities (CBU).

Since joining GRW, Mr. Dompke has focused his experience toward the planning and prioritizing of capital improvements and establishing stormwater programs. He is knowledgeable of EPA requirements and other regulatory mandates. He promotes delivery of services through GIS formats.

He is a civil engineering graduate of the University of Evansville and a professional engineer. Professional associations include AWWA, WEF, GITA, ASCE, INAFSM, and APWA. Originally from Michigan City, Indiana, he has lived in Indiana his entire life.

Lacey Duncan
IDNR, Division of Water

Lacey Duncan is an Environmental Manager with the Indiana Department of Natural Resources, Division of Water. She received a B.A. in Geography from Indiana University-Purdue University at Indianapolis in 2007. She worked with the Division of Water as an intermittent assisting with FEMA's Map Modernization Program in the Spring of 2007. After completion of her degree she worked as a GIS Analyst for a private mapping firm in Indianapolis. She returned to the Division of Water in 2008 where she now works in the Technical Services Section and assists the Division with GIS related projects.

2010 INAFSM ANNUAL CONFERENCE

Lori Gates, CPESC, CPSWQ, CMS4S

"NPDES Stormwater Program Updates"

a{π o.

Lori Gates, CPESC, CPSWQ, CMS4S

Christopher B. Burke Engineering

As a Senior Resource Planner with Christopher B. Burke Engineering, Ltd. since 2003, Lori is responsible for environmental assessments, studies, and regulatory compliance for water resources and environmental projects. Her specific duties involve ensuring that all municipal, construction, and industrial storm water quality projects and permits are in compliance with the NPDES Storm Water Permit program, including Section 402 of the Clean Water Act, 327 IAC 15-13 (the Rule 13 Phase II MS4 program), 327 IAC 15-5 (the Rule 5 Construction Run-off program), and 327 IAC 15-6 (the Rule 6 Industrial Run-off program) and project oversight of on-going required permit implementation activities. Previous duties include serving as the State of Indiana's lead technical expert for the NPDES Storm Water program and interacting frequently with EPA at the Region 5 level, EPA headquarters, as well as, other EPA Regions. Lori also is involved in local Watershed Planning and Regional Watershed Coordination projects. She received the Indiana Association of Floodplain and Stormwater Management (INAFSM)'s "Chairman's Award for Outstanding Service in Support of the INAFSM" in 2006 and is the current chair of the Stormwater Committee. Lori also currently serves as the Administrative Vice-Chair of EnviroCert International and is the Chair of the CMS4S, Inc. Council as well as an approved CMS4S Instructor.

Dr. William Guertal

New USGS Resources for Floodplain and Stormwater Managers

tfŝyl-№è {ŝăă№2y' !M

Dr. William Guertal

USGS Indiana and Kentucky Water Science Centers

Bill has a Bachelor's and Master's Degree from The Ohio State University (in Geology and Soil Science, respectively), and received a Ph. D. from North Carolina State University in 1992 in Soil Science/Hydrology. He began is Survey career in 1992 as a hydrologist on the Yucca Mountain Project, where his research efforts focused on evaluation and interpretation of data resulting from complex infiltration experiments and testing physical and hydrologic characteristics of the unconsolidated and consolidated surficial materials. In 2000 he became the project chief for USGS's ground-water contaminant studies at Dover Air Force Base and the Dover National Test Site, in Delaware. In 2002 he began serving as the Delaware Subdistrict Chief in the MD-DE-DC District, and later became the Associate Director for Hydrologic Networks and Information in the MD-DE-DC Water Science Center. In 2006 he began his position as Director of the Indiana Water Science Center. Currently he also serves as the Director of the Kentucky Water Science Center.

Steven R. Iwinski, Environmental Scientist

Polymer Enhanced Best Management Practices for Erosion, Sedimentation Control and Stormwater Treatment to assist in meeting Effluent Discharges and TMDL reductions

Steven R. Iwinski, Environmental Scientist - Senior Associate
Stormwater Management Academy
University of Central Florida

Steven R. Iwinski, Environmental Scientist, president and founder of Applied Polymer Systems, Inc., has been involved with erosion BMPs and water soluble polymers since the mid-1970s. Years of research have produced a number of innovative polymer enhanced BMPs that have shown significant improvement over existing conventional BMP systems. Mr. Iwinski has developed multi-disciplinary environmental industry projects for mining, construction and stormwater applications. Iwinski contributes data and technical support to multiple universities, agencies and environmental professionals throughout the stormwater industry. Currently Mr. Iwinski is a senior associate of the Stormwater Management Academy, University of Central Florida for stormwater quality improvement through enhanced BMPs.

Contact Information:
Stormwater Management Academy
University of Central Florida
Applied Polymer Systems, Inc.
Northern R&D Lab
PO Box 356
Big Bay, MI 49808
906-869-0606
iwinskis@aol.com
info@siltstop.com

David B. Knipe, PE, CFM
Indiana Department of Natural Resources
Division of Water

David is the Section Manager of the Central Basin Team in the Engineering Services Center of the Indiana Department of Natural Resources, Division of Water. As section manager, he is responsible for the development and review of hydrologic and hydraulic modeling for various floodplain management and dam safety applications. He also has been very active in the Division's program to modernize and update FEMA floodplain mapping for the state. David currently serves as co-chair of the Mapping and Engineering Standards Committee for the Association of State Flood Plain Managers. He has been with the Division of Water since 1992. David received a Bachelor of Science degree in Civil Engineering from Penn State University, a Master of Science in Civil Engineering degree from Purdue University, and is a registered Professional Engineer in the State of Indiana, and an ASFPM Certified Floodplain Manager.

2010 INAFSM ANNUAL CONFERENCE

Julia McCarthy, CFM

The Community Acknowledgement Form: What is "Reasonably Safe from Flooding" and Considerations for a Floodplain Manager

Floodplain 1A

Julia McCarthy, CFM

FEMA Region V

Julia McCarthy joined FEMA Region V in February 2008 as a Map Modernization (Map Mod) Program Specialist in the Floodplain Management and Insurance Branch. Her main focus during that time was the outreach and coordination of Map Mod open houses, most notably for the Metro East Illinois mapping effort.

Currently, Julia is a Natural Hazards Program Specialist with Region V, coordinating the administration of the National Flood Insurance Program (NFIP) for the states of Indiana and Wisconsin. Julia works closely with FEMA Headquarters, states and local communities on the resolution of compliance issues and providing technical assistance. She is the main point of contact and support for Indiana and Wisconsin State NFIP Coordinators at Region V.

Prior to joining FEMA Region V, Julia worked as a Technical Writer for the Illinois Department of Natural Resources-Division of Water. There she managed the production of Flood Insurance Study reports for the Illinois State Water Survey on Map Mod projects. She has over five years of experience working with the FEMA's NFIP.

Julia received her BA degree in Urban and Regional Planning from the University of Illinois. She received her Certified Floodplain Manager certification in 2009 from the Association of State Floodplain Managers (ASFPM) and is also an ASFPM member.

Contact Information:
Julia.McCarthy@dhs.gov

Michael E. Massonne

DLZ Indiana LLC

Mr. Massonne joined DLZ as a Project Manager in January 2002.

Prior to DLZ Mike graduated from Purdue's School of Agricultural Engineering focused on Soil and Water Resources.

After leaving Purdue, Mike spent 13 years with the Indiana Department of Natural Resources where he worked in construction in the floodway permit review and processing and project development. Mike spent 9 of his 13 IDNR years overseeing the design and construction activities in Indiana's Lake and River Enhancement Program. The LARE program coordinated annual grant projects for water quality Best Management Practices with private and public groups.

At DLZ Mike serves several clients with professional services which include regulatory high hazard dam inspection, storm water infrastructure master planning and design, storm water user fee development and implementation, storm water program management and advisory committee development and facilitation. Mike works day to day with the City of Indianapolis Department of Public Works managing capital program and regulatory compliance efforts of the City's storm water program.

Mike is a member of the Agricultural and Biological Engineering Society, INAFSM, APWA and Trout Unlimted and is an avid fly fisherman to remind himself of the benefits of pursuing a career in the protection of the water of the U.S.

Mike is here today to discuss the integration of sustainable or green infrastructure into capital projects from the storm water program management perspective.

2010 INAFSM ANNUAL CONFERENCE

Sky K. Medors, P.E., CFM

Dam Safety – Just Give Us the Dam Basics!

Floodplain 8A

Sky K. Medors, P.E., CFM

Lawson-Fisher Associates, P.C.

Sky is a Senior Civil Engineer at the firm of Lawson-Fisher Associates located in South Bend, Indiana. He has experience in the inspections, site investigations, analyses, design, construction, and emergency action plan development for dam safety projects. Sky received his B.S. in Civil Engineering from Purdue University in West Lafayette, Indiana. He is a Registered Professional Engineer in the states of Indiana, Michigan, and Ohio and is a Certified Floodplain Manager in the State of Indiana.

2010 INAFSM ANNUAL CONFERENCE

Scott Morlock, P.E.

A Pilot Program to Develop a Flood Response Plan For an Indiana Community ***Floodplain 7A***

Scott Morlock, P.E.

USGS Indiana Water Science Center

Scott Morlock is a Supervisory Hydrologist with the USGS Indiana Water Science Center. He has a Bachelor of Science degree in Civil Engineering from Indiana Institute of Technology. He was employed by the Indiana Department of Natural Resources for 4 years prior to working at the USGS. He has been a hydrologist with the USGS for 19 years.

2010 INAFSM ANNUAL CONFERENCE

Peggy Shepherd, P.E., CFM

Flood Vulnerability, Oh the Possibilities

Floodplain 9A

Peggy Shepherd, P.E., CFM

Christopher B. Burke Engineering, Ltd.

Peggy is a water resource engineer in the Water Resources Department of Christopher B. Burke Engineering where she has worked for the last 15 years. Prior to that, she worked in the IDNR, Division of Water in the Project Development and Hydraulics and Hydrology Sections. Both jobs have involved extensive involvement in development and review of detailed hydrologic and hydraulic computer modeling for numerous Flood Insurance Studies as well as Construction in a Floodway permits. In her time with Christopher B. Burke Engineering, Peggy has also been involved at various levels in the development of several watershed master plans and development of flood protection alternatives.

2010 INAFSM ANNUAL CONFERENCE

W. B. Smith, P.E., CFM

Oklahoma Floodplain Managers Association

Disaster Response Team Summary

Floodplain 4A

W. B. Smith, P.E., CFM

Oklahoma Floodplain Managers Association

Mr. Smith is President of ***Hydropower International Services Inter-National Consultancy, L.L.C.*** (HISINC, L.L.C.) which was formed in 2000, as a private consulting firm to provide technical engineering services, including Project Management for Floodplain Management and Stormwater Development Project.

Mr. Smith received his certification as a Floodplain Manager in 2004, and has been a member of the Oklahoma Floodplain Managers Association (OFMA) for since January 2004. Mr. Smith is a Past Chair of OFMA, a member of the Mitigation Committee and a member of the OFMA Mapping Committee, and the OFMA Disaster Response Team (DRT) Creator and Coordinator.

Mr. Smith was educated as a hydrologist, and has used this expertise to be involved in floodplain management, hydrological analyses, floodplain mapping, hydraulic analyses for over 35 years in Oklahoma.

Education:	*BS/1974/Civil Engineering, University of Missouri – Rolla* *AAS/1968/Mechanical Technology – S.U.N.Y. at Morrisville* *Certified Floodplain Manager - 2004*
Registration:	*1979/Civil Engineer - Oklahoma, Arkansas, Kansas, Missouri, Colorado, Wyoming*
Experience:	*Hydropower International Services Inter-National Consultancy, L.L.C. – 2000 to Present* *The Benham Group - 1975 to 2000* *Prior Experience - 6 Years*

Anne Marie Smrchek, P.E.
Fort Wayne City Utilities

As Stormwater Program Manager, Anne Marie Smrchek creates and oversees the stormwater program for the City of Fort Wayne. She is responsible for overseeing and implementing the stormwater capital program, and is coordinating the City's green infrastructure initiatives and technical standards update to focus on sustainable design. She has a BS in Agricultural Engineering and is a licensed professional engineer.

2010 INAFSM ANNUAL CONFERENCE

Shareen Wagley, Muncie Delaware County

Transforming a Neighborhood
Through Stormwater Management

Stormwater 3C & 6C

Shareen Wagley

Muncie Delaware County Department of Stormwater Management
MS4 Coordinator

The Muncie Delaware County Department of Stormwater Management is a multi-government agency formed by the Muncie Sanitary District and Delaware County Commissioners. Shareen has been the local MS4 Coordinator since 2002, not only coordinating the formation of the department but also a joint operating Stormwater Quality Management program between five local MS4's and a joint Stormwater Utility that utilizes the County real estate tax records for billing and collection. Shareen also oversees the daily activities of an Erosion Control Inspector, employed by Delaware County, Indiana. More recently Shareen has been responsible to coordinate a local stormwater quantity program, including a revenue bond and 26 storm sewer maintenance, repair and replacement projects through the Muncie Sanitary District. Shareen is active in the Indiana Association of Floodplain and Stormwater Managers and the Indiana Water Environment Association.

2010 INAFSM ANNUAL CONFERENCE

Kenton C. Ward, PLS, CFM

Flood Vulnerability – Oh, the Possibilities

Floodplain 9A

Kenton C. Ward, PLS, CFM

Hamilton County Surveyors Office

Kenton C. Ward has been serving as the Hamilton County Surveyor since 1977. He holds a AAS in Architectural Technology, 1974, a BS in Construction Technology, 1976 both from Purdue University. He also holds a Certificate in Public Management, 1984, and an Master of Public Affairs, 1986, both from Indiana University. He is a 1995 graduate of the DIPLOMA program of the Association of Indiana Counties and a 1995 graduate of the Hamilton County Leadership Academy. He is a Certified Floodplain Manager.

He is past President of the National Association of County Surveyors and serves on the Environment, Energy and Land Use Steering Committee, Information Technology Committee and the Water Sub Committee for the National Association of Counties (NACo) and as Vice Chair on NACo's GIS Sub Committee. He is also a charter member of the Indiana Association for Floodplain and Stormwater Management (INAFSM), a member of the County Surveyors Association of Indiana (CSAI), American Public Works Association, Association of State Floodplain Managers (ASFPM), Indiana Water Resources Association, Indiana Planning Association, Soil and Water Conservation Society and the Aircraft Owners and Pilots Association. He serves on the Service Advisory Board of the Indianapolis Department of Waterworks and the Board of Directors of the Hamilton County Leadership Academy. He serves as Chairman on the Hamilton County GIS Policy Committee, the Hamilton County Web Committee and the Hamilton County Wellhead Protection Committee. He also serves on the Hamilton County Stormwater Steering Committee, Hamilton County Information Systems Services Board, the Hamilton County Plan Commission, and the Big Cicero Creek Drainage Board as Assistant Surveyor. Ward has serves on the Legislative Committees for both the County Surveyors Association of Indiana and the Association of Indiana Counties (AIC) and as Legislative Liaison to INAFSM.

In 1995 he was appointed by Governor Bayh to serve on the work group which compiled the Indiana Drainage Handbook which is utilized by stormwater designers throughout Indiana. In 2002 and 2003 he served on the Indiana Department of Environmental Management's external workgroup for the writing of Rule 13 which is Indiana's administrative rule for the compliance with EPA's Stormwater Phase II regulations, along with the external workgroup which compiled the Guidance Document for Indiana's Rule 13. He has received the Outstanding County Surveyor Award from the AIC in 1984 and 2004, the Presidents Award from the CSAI in 1995, Urban Conservationist of the Year from the Hamilton County Soil and Water Conservation District in 1997 and the Excellence in Stormwater Management from the INAFSM in 1997. In 2009 he was the recipient of the Arthur R. Himsel Award from the Association of Indiana Counties.

He is married to his wife of 33 years, Robin. They have a daughter Kate and son Alex. He is a member of the Noblesville First Christian Church. He is also a life member of the Hamilton County Historical Society, the Noblesville High School Alumni Association and the National Rifle Association. He also serves as a Republican Precinct Committeeman.

2009 INAFSM ANNUAL CONFERENCE

Jennifer Zielinski, PE

An Introduction to Stormwater Retrofitting
An Adaptable Process for Identifying, Prioritizing, and Implementing Stormwater Retrofits

MS4/Stormwater 1B & 2B

Jennifer Zielinski, PE
Biohabitats, Inc.
2026 Murray Hill Road, Room 107
Cleveland, OH 44106
216.921.4430
jzielinski@biohabitats.com

Jennifer Zielinski, PE, is a project manager and water resource engineer with over 13 years of experience in watershed and stormwater policy development, planning and design. Ms. Zielinski has managed or participated in numerous efforts related to stormwater retrofitting, ranging from development of policy and guidance to actual planning, design and construction. Before joining Biohabitats, Jennifer was program director at the Center for Watershed Protection (CWP), a nationally recognized non-profit that develops innovative technical guidance relating to watershed and stormwater management, NPDES compliance, and natural resource conservation.

She serves on the Boards of Directors of the Chesapeake Stormwater Network and the Ohio Stormwater Association. She is co-author of the Urban Subwatershed Restoration Manual No. 11: Urban Stormwater Retrofit Practices. This national guidance manual, funded by U.S. EPA, outlines the basics of stormwater retrofits, describes locations where they can be found, and presents rapid methods to find, design and deliver retrofits to meet a wide range of objectives. She has been involved in the development of many stormwater manuals, including the states of New York and Minnesota, and the District of Columbia.

Jennifer is currently leading a collaborative effort with the Cuyahoga Soil and Water Conservation District to develop an inventory of over 100 stormwater retrofit opportunities in four subwatersheds in the Rocky River and Euclid Creek watersheds. She recently completed a stormwater retrofit inventory for the Croton-Kensico drinking water reservoir basins in New York that identified and prioritized over 250 stormwater retrofits, with the goal of meeting a stringent TMDL reduction requirement for Total Phosphorus. She is also currently involved in efforts related to retrofitting for CSO reduction in Toledo and New York City. As part of the Toledo Waterways Initiative, the Maywood Avenue CSO Demonstration This project will retrofit a residential street with green infrastructure to reduce stormwater flows entering the combined sewer system.

Jennifer has a B.S. in Civil Engineering from Case Western Reserve University and is a licensed Professional Engineer. She serves on the Boards of Directors of the Chesapeake Stormwater Network and the Ohio Stormwater Association.