

Environmental Connection Conference 2014

**Nashville, Tennessee, USA
25 - 28 February 2014**

Volume 1 of 3

ISBN: 978-1-63266-037-4

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2014) by the International Erosion Control Association
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the International Erosion Control Association
at the address below.

International Erosion Control Association
3401 Quebec St., Suite 3500
Denver, CO 80207

Phone: (800) 455-4322
Fax: (866) 308-3087

ecinfo@iec.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

EROSION & SEDIMENT CONTROL

Restoring Humboldt Bay's Shoreline: The 1st Line of Defense Against Sea-Level Rise	1
<i>C. Benson</i>	
Erosion Control Design for Stormwater Basins	52
<i>B. Blackburn</i>	
Curlex Bloc: Versatile BMP	76
<i>J. Bohannon</i>	
Developing Methods for Vegetating Constructed Peatlands in Alberta's Oil Sands Region	111
<i>A. Borkenhagen, D. Cooper</i>	
Combination of Vetiver System and Erosion Control Blankets as a Solution to Slope Protection	151
<i>L. Herrera</i>	
Standards & Practices Committee Update	162
<i>B. Chesson, T. Schneider</i>	
Concrete Geocomposite: Innovative Value Engineering Solutions for Typical Erosion Control Measures	178
<i>J. Church</i>	
Reduction of Greenhouse Gas Emissions Through Utilization of Turf and Root Reinforcement Mat (TRM) Technology in Green Armouring of Civil Structures as Compared to Traditional Rock Armouring	219
<i>I. Corne</i>	
Erosion Control Aesthetics	229
<i>S. Cowles</i>	
Coir Geotextiles for Eco Friendly Erosion Control	236
<i>A. Ravindranath, L. Nair, G. Balachandran</i>	
SWPPP Preparation: From the Eyes of a SWPPP Reviewer	245
<i>A. Diehl</i>	
Evaluation of Ditch Check Practices: Part 2 – Comparative Evaluations	255
<i>W. Donald, W. Zech, X. Fang</i>	
Evaluation of Silt Fence Materials During and After Rainfall Events	264
<i>G. Dubinsky, I. Gogo-Abite, M. Chopra</i>	
Effects of Construction and Flooding on Benthic Invertebrates in Middle TN	272
<i>R. Kathman, J. Duke, T. Askegaard</i>	
Revegetation Strategies for Anchor Reinforced Vegetation Systems: Rapid Repair Levee Breach Facility at the USACE Engineer Research & Development Center	285
<i>N/A</i>	
Erosion Control and Slope Stability Using Reinforced Vegetation	318
<i>N/A</i>	
Effects of Herbicide and Soil Inoculation on a Post-fire Restoration Site	371
<i>J. Etra, K. Kuyper</i>	
Preconstruction Application of the Five Pillars of Construction Stormwater Management	380
<i>N/A</i>	
Is Compost Quality Important? Research on the Performance of Compliance vs Non-Compliance of Federal Specifications for E&SC Compost-Based BMPs	394
<i>N/A</i>	
Hacia Una Solucion Integral: La Magia de la Sostenibilidad	400
<i>B. Fernandez</i>	
Are Professional Engineers Qualified to Develop, Sign, and Review Sediment and Erosion Control Plans?	434
<i>J. Fifield, T. Wills</i>	
Impact of Fertilizer on Plant Physiological Function for Better Erosion Control	440
<i>B. Flack</i>	
An Overview of PTS and ATS as a BMP for Construction Stormwater	451
<i>J. Gannon</i>	
Native Vegetation and Vegetated Mat for Erosion Control	472
<i>N/A</i>	

Vegetated Segmental Retaining Walls for Bioengineered Solutions	475
<i>N/A</i>	
Profile Soil Solutions Software	479
<i>L. Girard</i>	
The Evolution of Coastal Erosion Control Technology	507
<i>P. Hanrahan</i>	
AIM for Perfection: The Basics of the Application, Installation, and Maintenance (AIM) of Rolled Erosion Control Products (RECPs)	555
<i>M. Kegerise</i>	
Temporary Diversion Methods (TDM)	582
<i>N/A</i>	
The Evolution of an Environmental Compliance Program: A Sediment and Erosion Control Program Case Study	595
<i>A. Lew</i>	
Organic Waste Composting: Sustainable Market Opportunities	603
<i>D. Loomis</i>	
Mulches for Controlling Erosion and Establishing Grass on Slopes: What Works	632
<i>N/A</i>	
Software Talud Para Calculo de Erosion en Taludes	653
<i>A. Menendez</i>	
Environmental Connection 2014: Storm Water Enforcement and Risk Mitigation Strategies	699
<i>C. Neumann</i>	
Optimising Soil Erosion and Runoff Control from Asparagus: A Case Study from the UK	724
<i>J. Niziolowski, R. Simmons, J. Rickson, M. Hann</i>	
Advancing Geosynthetically Reinforced Vegetation Systems	738
<i>J. Pack</i>	
Native Plant Establishment: Late Summer Planting Project	751
<i>J. Paternoster</i>	
Evaluation of Inlet Protection Practices (IPPs) Using Large-Scale Testing Techniques	763
<i>M. Perez</i>	
The US Composting Council's Seal of Testing Assurance Program ('STA'): 'If it isn't STA Compost... What is it?'	800
<i>A. Rattie</i>	
Diversity of Standard Technical Specifications for RECPs Among the USA Dots and Canadian Transportation Agencies	806
<i>J. Ravert</i>	

VOLUME 2

Frac-Out!! A Case Study of Frac-out Issues During Directional Drilling of a Water Main	815
<i>N. Schumm</i>	
Applegate Mulch: News, Facts, and Tips: Helping you do your best	846
<i>N/A</i>	
Developing a Construction Stormwater Effluent Monitoring Program	875
<i>K. Sommer</i>	
Clarificacion de Aguas Resultado de Perforacion de Tuneles Utilizando Combinaciones de Biopolimeros Biodegradables en un Ambiente Ecologicamente Delicado	889
<i>F. Kneib, N. Araujo, A. Rojas, J. Santiago, J. Williams</i>	
Presente y Futuro de las Fibras Naturales en el Control de la Erosion: Casos de Exito	903
<i>V. Medrano</i>	
Experiencias Supervision Ambiental, Control de Erosion y Estabilizacion de Taludes en Construccion de Carreteras Guatemala	922
<i>J. Recinos</i>	
Evaluating Sediment Barriers	940
<i>C. Sprague, B. Ruzowicz, J. Sprague</i>	
Evaluating Channel Check Dams	953
<i>C. Sprague, B. Ruzowicz, J. Sprague</i>	
Who Pays the Fine? How to Structure Contract Documents for Risks Related to NPDES Permit Enforcement Actions	962
<i>D. Todd</i>	

Challenging the Status Quo: How TVA is Updating Its Vegetative Best Management Practices	973
<i>J. Tuck</i>	
A 40-Year Study on Decreasing Road Surface Erosion and Runoff with Geotextiles	1013
<i>M. Kocian, B. Whitaker</i>	
Ethics for Erosion Control Professionals	1026
<i>D. Williams</i>	
Camp Sacramento Erosion Control and Habitat Improvement Project	1046
<i>P. Wisheropp</i>	
Evaluation of Ditch Check Practices: Part 1 - Installation Improvements	1059
<i>W. Donald, W. Zech, X. Fang</i>	
Assessing the Performance of a Sediment Basin at a Construction Site in Franklin County, Alabama	1069
<i>X. Fang, W. Zech, C. Logan</i>	
Biotics in Soil Restoration & Site Revegetation	1077
<i>A. Zimmerman</i>	
Natural Gas Pipelines: Creative Solutions for Right of Way Restoration and NPDES Compliance	1102
<i>K. Hurley</i>	

SURFACE WATER RESTORATION

Sediment & Turbidity TMDL Compliance	1118
<i>C. Benson</i>	
Sedimentation Effects on Reservoir Usage and Water Quality	1220
<i>A. Blystra</i>	
Hurricane Sandy Impacts on the Atlantic Coast Shoreline	1231
<i>A. Blystra</i>	
Reconstruction Efforts after the Middle Tennessee Flood of 2010	1244
<i>S. Casey, M. Gramza</i>	
Fitting a Square Peg in a Round Hole: Achieving Stormwater Compliance on Wetland Restoration Projects	1263
<i>M. Hicks</i>	
Modeling the Benefits of Surface Withdrawal and Porous Baffles for Sediment Basins	1284
<i>J. Johns, R. Vaughan, B. Wagner</i>	
Restoration Project of the Ottawa River at the University of Toledo 2009-2013	1295
<i>P. Lawrence</i>	
Transition Zone Matting	1320
<i>J. Slupecki</i>	
Modifications of Stream Restoration Techniques for Arid and Semi-Arid Environments	1350
<i>D. Williams</i>	

STORMWATER MANAGEMENT

Thinking Outside the Big Box: From Detention Basin to Department Store	1384
<i>J. Bailey</i>	
Sub-Saharan Agroforestry for Soil Protection and Fertility	1399
<i>C. Benson</i>	
The Evolution of a SW Program: Lessons Learned in Overseeing Grading Permit Sites	1437
<i>D. Binder</i>	
Urban Riparian Zones: Designing Mitigation Buffers	1466
<i>D. Bogue, J. Brower</i>	
Creating a Channel for Stormwater Innovation	1476
<i>D. Batts</i>	

VOLUME 3

Innovation Barriers & Solutions in the Stormwater Sector	1493
<i>S. Brown</i>	
The High Impact of a Low Impact Design Contest	1513
<i>J. Ring</i>	

It's All About LID Innovation	1524
<i>R. Adair</i>	
Transitioning from Construction to Permanent Stormwater Management... Successfully!	1546
<i>B. Chasson</i>	
Post-Construction Stormwater Management for Erosion Control Professionals	1557
<i>A. Earles</i>	
Porous Pavements, Stormwater Infiltration and Clay Soils: Protecting our Water Resources	1582
<i>N/A</i>	
Storm Water Quality Standards and Statements: What the Local MS4 is Looking for When You Install a Permanent Structural Control for a Site & What is Required to Keep Up Maintenance	1625
<i>B. Flack</i>	
Practical Data: Establishing Methods and Procedures for Measuring Water Clarity and Turbidity of Stormwater Runoff from Active Major Highway Construction Sites	1637
<i>R. Kauten</i>	
Stormwater Monitoring: A Primer on Basic Data and Methods	1673
<i>R. Kauten</i>	
Manufacturing Quality Civil Engineering Products for Over 40 Years	1735
<i>N/A</i>	
City of Auburn Zoning Ordinance, Section 413 - Stream Buffer	1745
<i>N/A</i>	
Using Green Infrastructure Buffers to Protect Natural Resources	1751
<i>C. LeBleu</i>	
Washington Street Flood Control & Stormwater Retrofits: Seaford, Delaware	1772
<i>S. Marsh</i>	
Making Your Soil a Stormwater BMP	1788
<i>R. McLaughlin, V. Brown</i>	
Infiltration Basin - Does Your Design Hold Water	1807
<i>K. Merl</i>	
Assessment of California Construction Runoff Turbidity Sampling Training and Results	1836
<i>T. Parrilla, J. Pitt</i>	
Metro Nashville May 2010 Flood Response and Recovery	1852
<i>C. Poppewell, B. Bugg</i>	
SWPPP Inspections... It's a Living!	1871
<i>J. Porter</i>	
Implementing Green Infrastructure: Atlanta's Post-Development Stormwater Management Ordinance	1909
<i>C. Rayburn</i>	
Working Beyond Political Jurisdictions to Achieve WQ Results	1945
<i>E. Schmechel</i>	
Stormwater BMP Post Construction Inspection & Maintenance	1971
<i>T. Sherrod</i>	
Metals Reduction Through Simple Solids Reduction	2045
<i>K. Sommer</i>	
SWPPP Design and Implementation of a Foundation Test Shaft Program for New Bridge Construction Within the St. Croix River	2057
<i>D. Stenlund</i>	
Stormwater Permitting of Utility Construction for Mass Transit	2096
<i>R. Sturgeon</i>	
Southbury Medical Facility and LID: A Case Study	2101
<i>S. Trinkaus</i>	
The Implementation of the Highland Estates Detention Basin Retrofits to Address Water Quality Impairment in Northfield Lake	2123
<i>S. Trinkaus</i>	
Creating Effective Municipal LID Regulations	2162
<i>S. Trinkaus</i>	
A Good Day for a Picnic? Understanding Precipitation forecasts	2169
<i>B. Vieux</i>	
Finally... An Inlet Protection Device for Pipes: The SedJacket	2172
<i>G. Vreeland</i>	

Hydraulics: For Those Who Skipped it in College	2223
<i>D. Williams</i>	

MS4 MANAGEMENT

What Do We Do With All the Data?	2273
<i>H. Buck</i>	
MS4 Audit Preparation	2294
<i>H. Buck</i>	
MS4 Training - What's Required and How to Do it	2318
<i>L. Gates</i>	
Are Your MS4 Facilities Compliant?	2343
<i>N/A</i>	
A Proactive Approach for the Alabama DOT MS4 Program	2372
<i>S. Rogers</i>	

OTHER

A Model for Future IECA Education?	2386
<i>N/A</i>	
Leadership through Collaboration: It's Not My Way or the Highway	2398
<i>B. Fagan, J. Poore</i>	
Nashville Safe: Nashville's Flood Inundation Forecasting and Warning System	2403
<i>R. Lindsey</i>	
Author Index	