



# INTERNATIONAL LOW IMPACT DEVELOPMENT CONFERENCE 2018

Nashville, TN | August 12–15, 2018

## Getting in Tune with Green Infrastructure

### Monday, August 13

8:30 - 10:00 a.m. Opening Plenary Session, Griffin Ballroom Moderator: Jon Hathaway Welcome Address: Shari Meghreblian Keynote Speaker: Joan Iverson Nassauer: A Commitment to Civic Well Being				
10:30 a.m. - 12:00 p.m. Technical Session 1				
Belle Meade I&II	Arlington	Brentwood	Emory	Harpeth I&II
Session 1.1: Considering Streams in Stormwater Management Objectives	Session 1.2: Municipal Program Development and Advancement	Session 1.3: Implementation Strategies and Challenges	Session 1.4: LID at the Catchment Scale	Session 1.5: Bioretention Cells under Cold Climate Conditions
Moderator: Scott Struck	Moderator: Susan McCrary	Moderator: Hunter Freeman	Moderator: Elizabeth Fassman-Beck	Moderators: Elodie Passeport, Jennifer Drake
<ul style="list-style-type: none"> <li><b>Coupling Green Infrastructure and Stormwater Hydrology with Channel Geomorphology to Assess Needs for Stream Restoration Practices</b>, John Steven Schwartz, Robert Woodman</li> <li><b>Catchment-scale Evaluation of LID by a Flexible Surface-subsurface Interaction Model: Case of Sligo Creek, MD</b>, Mohammad Almadani, Arash Massoudieh</li> <li><b>Hydrograph Restoration: Multi-benefit Modeling for Basin Planning</b>, John Riverson, Ryan Murphy, Patty Dillon, Sam Gould, Arthur Lee, David Ojala, Keith Hume, Dustin Bambic</li> <li><b>Reducing Stream Impacts by Preserving Natural Infiltration Processes in the Watershed and Stream Network using a Holistic Multi-Scale Approach: Oak Gulch Case Study</b>, Jim Wulliman, Andrew Earles, Barbara Chongtoua, Sam Rogers, Brik Zivkovich, Sara Johnson</li> <li><b>Long-term Impacts of Neighborhood Level LID: Baseline Hydrological Condition of Creek Side Village</b>, Yin Yin</li> <li><b>Recommendation on Reinforcing Current Frameworks for Setting Stream Restoration Prioritization through the Lens of Landscape Architecture</b>, Archana Sharma, Joe Berg</li> </ul>	<ul style="list-style-type: none"> <li><b>Portland's Grey to Green Program: 10 years of at-scale Green Infrastructure Implementation</b>, Kerry Rubin</li> <li><b>Gotta Be Better Way: MSDGC's Use of Training and Technology for Green Infrastructure Maintenance</b>, Leslie Schehl</li> <li><b>It Takes a Village: Boston's Collaborative Journey Towards City-Wide Implementation of Green Infrastructure/Low Impact Development</b>, Kate England</li> <li><b>A National Review of Innovative and Integrated Stormwater Management Initiatives</b>, Pinar Balci, Floren Poliseo, Sandeep Mehrotra, Steve Sands, Liza Faber</li> <li><b>Implementing Green Stormwater Infrastructure into a Municipal Road Program</b>, Ashley Neptune, Matthew Bagaley</li> <li><b>Watershed Planning with a Focus on Green Infrastructure for Water Quality and Drainage Management in Atlanta, GA</b>, Julie Owens, Aylin Lewallen</li> </ul>	<ul style="list-style-type: none"> <li><b>Not Your Father's Buick: Beyond Traditional Delivery of Stormwater Management</b>, Derick Topping, Ronald Geiger</li> <li><b>The Prince George's County Public Private Partnership: From Idea to Implementation</b>, Troy Hunt, Neil Weinstein</li> <li><b>Can a Public-private Partnership Drive Development and Stormwater Culture Change? The Friday Harbour Story - A Case Study of Ontario's First Net-zero Phosphorus Large-scale Development</b>, Rob Baldwin, Shauna Dudding</li> <li><b>Design-build or Design-bid-build? Project Delivery Lessons Learned for Stormwater Success</b>, Bethany Bezak, Caitlin Feehan</li> <li><b>Community Land Trusts: A New Model for Urban Equity</b>, Blaine Stand, Petr Stand</li> <li><b>Memoir of a Reviewer</b>, Maria E. Price</li> </ul>	<ul style="list-style-type: none"> <li><b>Final Results of Pollutant and Flow Monitoring of the Birnamwood Drive Low Impact Development Roadway in Harris County, Texas</b>, Michael Bloom, Nick Russo</li> <li><b>Performance Evaluation of Combined LID Facilities on Runoff Reduction- A Case Of Taipei Tech. Campus in Taiwan</b>, Chi-Feng Chen, Jen-Yang Lin, Chia-Chun Ho, Chao-Ting Kuo</li> <li><b>Quantifying Green Infrastructure Performance through Field Scale Research to Inform Urban Planning Decisions: A Case Study from New Haven, CT</b>, Kevin Dahms, Gaboury Benoit, Kelsey Semrod</li> <li><b>IDEAS for GI – Interactive Design and Analysis Software for Green Infrastructure</b>, Bardia Heidari Haratmeh, Barbara Minsker, Lawrence Band, Arthur Schmidt, Lorne Leonard, Neely Law</li> <li><b>Targeting SCM Design to Measured Residential Runoff Pollutant Loads</b>, Jay Dorsey, Ryan Winston</li> <li><b>Getting to 10% Watershed Restoration through Low Impact Development Retrofits in an Urban Environment</b>, James Houle, Thomas Ballestero</li> </ul>	<ul style="list-style-type: none"> <li><b>Effect of Freeze-thaw Cycles on Bioretention Performance</b>, Elodie Passeport, Brenden Ding, Behrad Gharedaghloo, Philippe Van Cappellen</li> <li><b>Laboratory Study on the Performance of Bioretention for Stormwater Management in Cold Climates</b>, Hannah Kratky, Zhan Li, Tong Yu</li> <li><b>Spatial and Temporal Analysis of Hydraulic Conductivity, Snow Depth and Soil Properties of a Bioretention System</b>, Alwish Ranjith John Gnanaraj, Jennifer Drake</li> <li><b>Effects of Deicing Salts on Soil Porewater Quality and Soil Metals Retention</b>, Shirley Clark, Karan Jain</li> <li><b>Impact of Periodic High Concentrations of Salts on Bioretention Nutrients Performance</b>, Allen Porter Davis, Meigan McManus</li> <li><b>Bioretention Cells for Removal of Benzotriazole from Urban Stormwater Runoff</b>, Elodie Passeport</li> </ul>
12:00 - 1:00 p.m. Lunch in the Exhibit Hall - Keynote Presentation: Culturally Enhanced Water Sensitive Design: A Potential Solution to Protect Communities at Risk to Climate Change, Troy Brockbank				
1:00 - 2:00 p.m. Poster Session and Exhibitor Showcase				

2:00 - 3:30 p.m. Technical Session 2				
<b>Belle Meade I&amp;II</b>	<b>Arlington</b>	<b>Brentwood</b>	<b>Emory</b>	<b>Harpeth I&amp;II</b>
<b>Session 2.1: Engaging the Community</b>	<b>Session 2.2: Challenges and CSO/SSOLutions</b>	<b>Session 2.3: Bioretention and Water Quality</b>	<b>Session 2.4: Managing Salt and Gross Solids</b>	<b>Session 2.5: Panel Discussion: Regulatory Perspectives</b>
Moderator: Robert Goo	Moderator: Jay Dorsey	Moderator: Bridget Wadzuk	Moderator: Jim Lenhart	Moderator: Kelly Lindow
<ul style="list-style-type: none"> <li>Developing Technical Policy with Non-Technical People, Andrew Reese</li> <li>Stakeholder Perceptions of Green Infrastructure and Ecosystem Services in New York City, Stephanie Miller, Franco Montalto</li> <li>Have a Thick Skin, it Pays Off: The Acceptance of Green Infrastructure by the Community, Andy Szatko, Steve Rodie</li> <li>Lighting the Fire: Generating Enthusiasm for Green Infrastructure through Concept Designs, Chris Carandang, Matt Fabry, Stephen Carter</li> <li>Using an Integrated Assessment Process to Determine Strategies for Removing Barriers to Green Infrastructure Implementation, Donald Carpenter, Sanjiv Sinha, Avik Basu, Robert Pettit</li> <li>Utilizing Landscape Visualizations of Bioretention in the Public Right-of-way to Understand Perceptions about Maintenance and Visual Appeal of Green Stormwater Infrastructure, Holly Greenleaf, Stephanie Hurley, Richard Clark</li> </ul>	<ul style="list-style-type: none"> <li>ALCOSAN's GROW Program: A Regional Strategy to Reduce Sewage Overflows at the Source, Julia Spicher, Timothy Prevost, Joshua Jedlicka</li> <li>Columbus Blueprint: Using Green Infrastructure to Address SSOs and Basement Flooding, Jason Sanson, Kathleen Smith</li> <li>St. Louis MSD CSO Volume Reduction Green Infrastructure Program: Pilot, Full-Implementation and Progress, Melantha Norton, Susan McCrary</li> <li>Garden of Edenwald Houses - Green Infrastructure for CSO Control in the Bronx, Virginia Roach, Walid Harrouch</li> <li>Metropolitan Sewer District of Greater Cincinnati's Lick Run Greenway Project; An Innovative Way to Eliminate 400 MGD/Yr of Combined Sewer Overflows, Patrick Arnette</li> <li>Drain the Rain: Lessons Learned on Disconnecting Downspouts in the Nation's Capital, Caitlin Feehan, Bethany Bezak</li> </ul>	<ul style="list-style-type: none"> <li>Removal Efficiency of Phthalates in Urban Highway Runoff in Shanghai by a Bioretention System, Tian Li, Yutong Liu</li> <li>Aging Bioretention: A Retrospective Comparison of Nutrient Treatment Efficiency in a 16-Year Old Bioretention Cell, Jeffrey Johnson, William Hunt</li> <li>Field and Laboratory Evaluation of Bioretention Bacterial Removal from Urban Stormwater Runoff in the Lower Rio Grande Valley, South Texas, Ahmed Mahmoud, Augusto Sanchez, Javier Guerrero, Kim Jones</li> <li>Evaluation of Chemical And Physical Properties of Stormwater Management Greenstreets in New York City, Tatiana Morin, Maha Deeb</li> <li>Investigating the Microbiology of Bioretention and Filtration, Mindy Hills, Vaikko Allen, James Lenhart</li> <li>Performance Monitoring of a Simple Retrofit for a Rain Garden in Fort Collins, Colorado, Tyler Dell, Basil Hamdan</li> </ul>	<ul style="list-style-type: none"> <li>Reducing Road Salt Application Rates, Road Salt Pollution and Slip/Skid Hazards using Permeable Interlocking Concrete Pavement, Jeffrey Marvin, Jennifer Drake</li> <li>Permeable Pavement for Road Salt Reduction, Andy Erickson, John Gulliver</li> <li>Reducing Nutrients in Urban Stormwater through Municipal Leaf Collection, William Selbig</li> <li>Deicer Impacts on Pervious Concrete Specimens: Phase IIa: Split Tensile Testing, Liv Haselbach, Nara Almeida, Molly Ross</li> <li>Sediment and Gross Solids Removal by Pretreatment Practices for Bioretention, Andy Erickson, Matt Hernick, Chris Lord</li> <li>Monitoring the Environmental Impact of Road Salts on Permeable Pavements versus Traditional Asphalt, Kirti Sehgal, Jennifer Drake, Huimin Zhu</li> </ul>	<p>Panel Discussion: MS4 Regulatory Overview: Are we there yet? Status and Updates in Tennessee and Nationally</p> <ul style="list-style-type: none"> <li>David Smith (EPA Region 9)</li> <li>Michael Hunt (City of Nashville)</li> <li>Jeff Willoughby, (City of Franklin, TN)</li> <li>Robert Karesch, (Statewide Coordinator for Tennessee Department of Environment and Conservation)</li> <li>Tom O'Connor (EPA Office of Research and Development)</li> </ul>
3:30 - 4:00 p.m. Networking Break & Poster Session				
4:00 - 5:30 p.m. Technical Session 3				
<b>Belle Meade I&amp;II</b>	<b>Arlington</b>	<b>Brentwood</b>	<b>Emory</b>	<b>Harpeth I&amp;II</b>
<b>Session 3.1: LID Education</b>	<b>Session 3.2: Quantifying Program and Project Performance</b>	<b>Session 3.3: What's going on in there?!? Bioretention Internal Processes and Variability</b>	<b>Session 3.4: Ultra Urban Applications</b>	<b>Session 3.5: The Journey and the Future of Green Stormwater Infrastructure in Kansas City</b>
Moderator: Crystal Bishop	Moderator: Rebecca Dohn	Moderator: Elodie Passeport	Moderator: Harris Trobman	Moderator: Brenda Macke
<ul style="list-style-type: none"> <li>Stormwater Education through School Demonstration Projects, Lucius Jonett</li> <li>Influence of Education and Outreach for Green Stormwater Infrastructure Development, Nicole Barclay</li> <li>Enhancing Environmental Awareness, STEM Outcomes and Curriculum Benefits through Rain Gardens: A Successful Project Case Study Analysis, Steve Rodie, Rachael Arens, Andy Szatko</li> <li>Founding of the Great Lakes Stormwater Tech Transfers Collaborative, Donald Carpenter, Michael Polich, Victoria Pebbles, Derek Berg, Anne Vaara</li> <li>Chesapeake Bay Landscape Professional Certification Program, David Joseph Hirschman, Beth Ginter</li> <li>Healing Water and People: Multifunctional and Artful Green Stormwater Infrastructure Design for Cultural Ecosystem Services, Holly Greenleaf, Stephanie Hurley, Rachelle Gould</li> </ul>	<ul style="list-style-type: none"> <li>Long-Term Assessment of Low Impact Development Performance in Semi-Arid Southern California, Ava Mousavi</li> <li>Case Studies in Inflow Monitoring of Green Stormwater Infrastructure Systems, Tsega Anbessie, Gary Martens, Morgan Nemtuda</li> <li>Tracking and Quantifying Performance of Green Infrastructure through a Web-based System, Dustin Bambic, Michael Hunt, Joshua Hayes, Mary Bruce, Kevin Heeney</li> <li>Ensuring Effective Monitoring to Verify Regulatory Compliance in Gwinnett County: The Development of The Gwinnett County Monitoring Guidance and Equipment Evaluation Manual, Brian Watson, Katherine Atteberry, Charles Crowell, Maureen Harris, Jason Wright</li> <li>Data Analysis Confirms that Green Infrastructure Performs as Designed in Philadelphia, Raleigh Myers, Stephen White, Taylor Heffernan, Chris Bergerson</li> <li>A 17 year Performance Evaluation of an LID Subdivision, Michael Clar</li> </ul>	<ul style="list-style-type: none"> <li>Rain Garden Evapotranspiration Accounting Method, Amanda Hess, Bridget Wadzuk, Andrea Welker</li> <li>Monitoring the Flow Pattern in the Media of Bioretention System and Design Recommendation, Farzana Ahmed, Michael Borst</li> <li>Nitrogen Cycling in the Liquid, Soil, Gas, and Plant Phases of Rain Gardens: Overall Impact and Potential Improvements, Nandan Shetty, Ranran Hu, Brian Mailloux, Jessica Hoch, Diana Hsueh, Matthew Palmer, Wade McGillis, Duncan Menge, Kartik Chandran, Krista McGuire, Patricia Culligan</li> <li>In situ Field Measurements for Quantifying the Hydrological Performance of Individual Right-of-Way Bioswales, Siyan Wang, Wade McGillis, Ranran Hu, Patricia Culligan</li> <li>Infiltration and Plant Assessment of Existing Bioretention and Rain Gardens in Omaha, Nebraska, Andy Szatko, Steve Rodie</li> <li>Spatial Redistribution of Rainfall by Broadleaf Canopies Within a Stormwater Control Measure, Walter Yerck, Franco Montalto</li> </ul>	<ul style="list-style-type: none"> <li>Confined Space Bioretention Planters: Hydrologic Monitoring and Modeling, Elizabeth Fassman-Beck, Michael Borst, Samantha Conte, Patrick O'Hara, Firas Saleh</li> <li>Development of a New BMP: Sand Filter Sidewalk Vaults, Aimee Navickis-Brasch, Jake Saxon, Taylor Hoffman</li> <li>Evaluating Low Impact Redevelopment in an Ultra-Urban Area Using Field Monitoring and LIDAR, Casey Vaughn, Bridget Wadzuk, Ali Ebrahimian, Virginia Smith, Humaira Jahangiri</li> <li>The Right GI Practice in the Right Place— A Probabilistic Cost-Performance Model to Address Uncertainty in GI Design, Alice Lancaster, John Phillips, Scott Kindred</li> <li>Stormwater Treating Street Trees, Katie Balaze</li> <li>Building a Better Tree Well, Hunter Freeman</li> </ul>	<ul style="list-style-type: none"> <li>Green Stewards and the Future of Green Stormwater Infrastructure Maintenance in Kansas City, Lisa Treese, Andy Sauer, Priya Iyengar</li> <li>Intelligent Stormwater Management in Combined Sewer Systems in Kansas City, MO, Priya Iyengar, Jason Garder</li> <li>The Future: Kansas City's Vision for Green Stormwater Infrastructure, Learning from the Past, Priya Iyengar, Lauren Grubbs</li> <li>The Past Looking Toward the Future of Green Stormwater Infrastructure in Kansas City, Lisa Treese, Andy Sauer, Priya Iyengar</li> <li>The Journey and the Future of Green Stormwater Infrastructure in Kansas City, Priya Iyengar, Brenda Macke</li> </ul>

8:30 - 10:00 a.m. Technical Session 4				
Belle Meade I&II	Arlington	Brentwood	Emory	Harpeth I&II
<b>Session 4.1: Connecting With the Community: Case Studies</b>	<b>Session 4.2: Don't Repeat the Past! Better Design through Adaptation and Standards</b>	<b>Session 4.3: The Big Picture: Watershed Scale Planning and Implementation</b>	<b>Session 4.4: Beyond Stormwater Management: Exploring the Many Benefits of LID</b>	<b>Session 4.5: Panel Discussion: Future Direction of Bioretention Technology</b>
Moderator: Jason Bernagros	Moderator: Andy Reese	Moderator: Kathlie Jeng-Bulloch	Moderator: John Schwartz	Moderators: Mike Clar, Robert Traver
<ul style="list-style-type: none"> <li>A Community-Driven Framework for Revitalizing the LA River with Green Infrastructure, Chad Helmle, Bradley Wardynski</li> <li>Rodney Cook, Sr. Park – How Atlanta is Using Partnerships, Low Impact Development, and Park Design Techniques to Rejuvenate a Community, Robert Bryant, Cory Rayburn, Kimberly Patak</li> <li>Sunset Area Stormwater Improvements: Connecting Community using Stormwater as a Catalyst, Dustin Atchison, Raymond Chung, Hebe Bernardo</li> <li>Spring Lake Park: The Transformation of an Underutilized Park using LID, Ryan Bentley</li> <li>Connecting Regulatory and Stakeholder Needs: LID Design on a Large-Scale Bridge Project in Washington DC, Carmen Franks</li> </ul>	<ul style="list-style-type: none"> <li>Adapting Green Infrastructure Tracking, Design, and Maintenance Methods for a Diversity of Programs, Alysondria Eason</li> <li>Trust the Process: The Evolution of Philadelphia's Public GSI Design Standards, Ben Clements, Dan Moran</li> <li>Maximizing the Benefits and Minimizing the Risks Associated with Standardizing Green Infrastructure Design, Eric Lienhard, Laura Bendernagel, Caitlin Feehan</li> <li>Standardized Stormwater? Developing Standard Green Infrastructure for Cost-effective Design, Permitting, and Construction, Caitlin Feehan, Bethany Bezak</li> <li>If LID is so easy to implement, how come we keep getting it wrong?, Steven Trinkaus</li> <li>Green Infrastructure Case Studies in the Midwest: Documenting Project Successes and Creative Solutions to Poorly Functioning Systems, Steve Rodie, Andy Szatko</li> </ul>	<ul style="list-style-type: none"> <li>Development and Application of a Multi-Scale BMP Analysis Framework for Integrated Watershed Management Planning, Austin Orr, Aaron Poresky, Venkat Gummadi, Sean Torres</li> <li>Integrating LID and Stream Restoration at an Educational Site in Gwinnett County, GA, Charles Crowell, Arvind Narayanan, Ray Hyland</li> <li>Water Quality Target Assessment using LID TTT version 1.0 for LID Designs in Ontario, Canada, Steve Auger, Tim Van Seters, Aman Singh, John Antoszek</li> <li>Tibbetts Brook Wetland Restoration and Daylighting Concept Design, Julie Stein</li> <li>Maryland's Watershed Based Permitting Approach to Institutional Stormwater Management, Edward Brown, Celso Guitian, Larry Hennessey</li> <li>Prioritizing Green Infrastructure for Phosphorus Reduction within Boston's MS4, Matthew Jones, Charles Wilson, Charles Jewell</li> </ul>	<ul style="list-style-type: none"> <li>Integrating Photovoltaic and Green Roof Systems: Findings of Research Conducted at the University of Toronto's Green Roof Innovation Testing Laboratory, Jennifer Drake, Liat Margolis, Brent Sleep, Ali Jahanfar, Marisa Fryer, Dalia El-Helou</li> <li>The Combined Effects of LID for Runoff Reduction, Evapotranspiration Enhancement and Microclimate Adjustment in a space between buildings in Shenzhen, China, Huapeng Qin, Yuanyan Zhang</li> <li>Understanding the Roles of Biodiversity and Functional Diversity in Provision of Co-benefits by Stormwater Biofilter Plant Communities, Brandon Winfrey, Emily Payne, Richard Ambrose</li> <li>Quantifying the Thermal and Microclimate Effects of Small Scale Green Stormwater Infrastructure, Lauren Smalls-Mantey, Franco Montalto</li> <li>Rainwater Harvesting as a Viable Potable Water Source: A Comparison of Three Water Sources in the Blue Ridge Mountains, Kathy Gee, Kaitlyn Dobyms, Katherine Plucinski</li> <li>Ecosystem Services of SCMs Over Time: A Look at Stormwater Treatment in Wake County Over the Last 20 Years, Natalie Carmen, Joseph Puckett</li> </ul>	<p><b>Panel Discussion: Future Direction for Bioretention Technology</b></p> <ul style="list-style-type: none"> <li>Robert Brown (Current directions of Task Committee)</li> <li>Curtis Hinman (Puget Sound Bioretention media demonstration study)</li> <li>Elizabeth Fassman Beck (Bioretention in disturbed urban soils)</li> <li>Jason Vogel (Bioretention issues and lessons learned in High Plains region)</li> <li>Steve Trinkaus (Bioretention O&amp;M)</li> </ul>

10:00 - 10:30 a.m. Networking Break & Poster Session

10:30 a.m. - 12:00 p.m. Technical Session 5

Belle Meade I&II	Arlington	Brentwood	Emory	Harpeth I&II
<b>Session 5.1: Show Me the Money: Economic Considerations in Stormwater</b>	<b>Session 5.2: I Have a Plan! Municipal Planning for LID</b>	<b>Session 5.3: Science Inspired Planning and Management Approaches</b>	<b>Session 5.4: Planning and Designing for an Uncertain Future</b>	<b>Session 5.5: Forest System Contributions to Stormwater Management</b>
Moderator: Jennifer Watson	Moderator: Robert Brown	Moderator: Eban Bean	Moderator: Kaitlin Vacca	Moderator: Eric Kuehler
<ul style="list-style-type: none"> <li>National Green Infrastructure Certification—An Investment in GI and the GI Workforce, Adriana Caldarelli</li> <li>St. Louis MSD's Three Green Infrastructure Grant Programs: One Size Does Not Fit All, Susan McCrary, Melantha Norton</li> <li>The Long-Term Economic and Social Impacts of Green Infrastructure in New York City, Stephanie Miller, Franco Montalto</li> <li>A Year in Review: Building an Inspection and Maintenance Program for the City of Virginia Beach, Kyle Logue, Jason Wilson</li> <li>Economic Development Impacts of Low Impact Green Infrastructure - An Emerging Case Study in Ripple-Effect Infrastructure Economics, Blaine Stand, Petr Stand, Jeremy Stand</li> <li>The Costs and Benefits of Permeable Pavements at the Neighbourhood Scale, Kirstin Newfield, Yin Yin, Jennifer Drake</li> </ul>	<ul style="list-style-type: none"> <li>Improving Resiliency in an Urban Industrial and Commercial Area through Green and Gray Infrastructure Planning, Emily Clifton, Steven Roy, Neil Weinstein</li> <li>Planning and Permitting: Subwatershed-Wide Low Impact Development and Complete Corridor Stormwater Management Approach, Adrienne Sones, Shawna Chambers</li> <li>Street-Scale, Strategic Green Infrastructure Planning in Los Angeles, Dawn Petschauer, Douglas Krauss, Lauren Amimoto, Bradley Wardynski, Chad Helmle</li> <li>High-Resolution, Integrated Watershed Planning: A San Diego Success Story, Raina Dwivedi, Chad Helmle</li> <li>How the City of Sacramento is Using Data to Plan Cost-Effective Green Infrastructure, Amir Ehsaei, Joseph Burg</li> <li>A User Friendly Python Code for Planning Large GI Programs, Khaled Abdo, Hazem Gheith</li> </ul>	<ul style="list-style-type: none"> <li>Planning Urban LIDs Using Enhanced Modeling Approach that Couples Detailed Surface Hydrology and Sewers Hydraulics, Hazem Gheith, Qiuli Lu</li> <li>Ten Years Later: Updating the Runoff Reduction Method, Dan Hirschman, Tom Schueler, Kelly Lindow, Jon Hathaway, Marcus Aguilar, Rebecca Dohn</li> <li>NYC's Green Infrastructure Research &amp; Development Project – Monitoring Strategy and Protocols, Fernando Pasquel, Miki Urisaka, John McLaughlin, Franco Montalto, Valentina Paiva-Acosta</li> <li>Determining Water Quality Parameters for an Integrated Decision Support Tool for Stormwater Infrastructure Planning, Colin Bell, Ye Li, Wenli Dickinson, Terri Hogue</li> <li>Utilizing Large-Scale Infiltration Testing Data in Green Infrastructure Program Implementation in Philadelphia, PA, Andrew Baldrige, Stephen White, Dwayne Myers</li> <li>The Stick and the Carrot: Traction of Novel Ecotechnologies in the Chesapeake Bay Watershed to Help Meet Aggressive MS4 and TMDL Permit Requirements, Edward Brown, Bryan Arvai</li> </ul>	<ul style="list-style-type: none"> <li>Incorporating Climate Resiliency into Common Stormwater Designs, Matthew Jones, Andrew Anderson</li> <li>What Comes After Monitoring and Analysis? Integrating Climate and Design to Improve Green Infrastructure Systems, Cara Albright, Robert Traver, Bridget Wadzuk</li> <li>Effects of Climate Change on Low Impact Development (LID) Performance - a Case of Study in Sao Carlos, Brazil, César Ambrogi Ferreira do Lago, Marina Batalini de Macedo, Marcio Hofheinz Giacomoni, Eduardo Mario Mendiondo</li> <li>Performance Assessment of Green Infrastructure Practices with Continuous Monitoring and Adaptive Control under Present Day and Climate Change Scenarios, Conor Lewellyn, Bridget Wadzuk</li> <li>Mapping Flood Hazards under Precipitation and Land Use Uncertainty through Probabilistic Flood Inundation Maps, Timothy Stephens, Brian Bledsoe</li> </ul>	<ul style="list-style-type: none"> <li>Urban Tree Hydrologic Services: What We Know, and What We'd Like to Know More About, Tricia Moore, Alireza Nooraei</li> <li>Rainfall Interception of Urban Trees in the Knoxville Area, Jon Hathaway</li> <li>A Controlled Experiment on the Water Quality and Quantity Benefits of Trees in Bioretention Practices, Andrew Tirpak</li> <li>Trees as Sources of Nutrients to Surface Waters, Sarah Hobbie, Lawrence Baker, Jacques Finlay, Benjamin Janke, Paula Kalinosky, William Selbig</li> <li>Accounting for Trees in Stormwater Models, Carol Wong, Karen Capiella</li> <li>Growing Trees in Gravel Retention Systems to Reduce Stormwater Runoff, Eric Kuehler, Jon Hathaway</li> </ul>

1:00 - 1:45 p.m. Poster Session & Exhibitor Showcase				
2:00 - 3:30 p.m. Technical Session 6				
Belle Meade I&II	Arlington	Brentwood	Emory	Harpeth I&II
<b>Session 6.1: Case Studies: Meeting Multiple Objectives</b>	<b>Session 6.2: I Came, I Saw, I Retrofit</b>	<b>Session 6.3: Using Amendments in Stormwater SCMs</b>	<b>Session 6.4: LID Modeling</b>	<b>Session 6.5: Panel Discussion: I+M Maintenance Initiatives</b>
Moderator: Dahlia Thompson	Moderator: Ted Brown	Moderator: Kathy Gee	Moderator: Matthew Jones	Moderator: Kelly Lindow
<ul style="list-style-type: none"> <li>In the Trenches of Green Infrastructure, Lucius Jonett</li> <li>Collaboration in GI from Design to Post Installation, Robert Woodman</li> <li>Soil Cell Design Guidance for Calgary, David Seeliger, Ken Clogg, Bert van Duijn, Tayler Marra</li> <li>The Hillsboro High School Renovation: Planning for the Future, Levi Sciara</li> <li>Research to Practice: Runoff Reduction Policy, Criteria, and Application in Colorado, Sara Johnson, Holly Piza, Jim Wulliman, Andrew Earles, Derek Rapp, Brik Zivkovich, Sam Rogers</li> <li>Making American Street Green Again: Incorporating GSI into an Urban Corridor, Kathryn Drake</li> </ul>	<ul style="list-style-type: none"> <li>Canadian Low Impact Development Retrofit Approaches: A 21<sup>st</sup> Century Stormwater Management Paradigm, William Vander Linden, Bill Trenouth</li> <li>LID Stormwater Retrofits for Puget Sound: Planning, Design, Construction, &amp; Lessons Learned, Robin Kirschbaum</li> <li>Lowering Capital Costs through a City-funded Private Property Stormwater Retrofit Program, Tim Kurtz</li> <li>Gray to Green: The Toledo Swan Creek Project, Carol Hufnagel, James Brescol, Scott Sibley</li> <li>Sustainable Stormwater Analysis for the Ford Site Redevelopment, St. Paul, MN, Bob Fossum</li> <li>Fees, Sites, and Credits: Alternative Stormwater Compliance in San Francisco, Eric Zickler, Sarah Minick, Pauline Perkins, Katie Pilat</li> </ul>	<ul style="list-style-type: none"> <li>Field Study on Removal of Dissolved Metals and Nutrients from Parking-lot Runoff by Catch-basin Media Augmented with Water-treatment Residuals, Kirk Barrett, Sunhawach Na Nagara, Virinder Sidhu, Dibyendu Sarkar</li> <li>Zeolite and Biochar Amendments to Minimize Nutrient Leaching from Extensive Sedum Green Roofs, Elizabeth Fassman-Beck, Yang Cheng, Birgitte Johannessen</li> <li>A Field Study of Biochar Amended Soils: Water Retention, Infiltration and Nutrient Removal from Stormwater Runoff, Joseph Brown, Sriya Panta, Paul Imhoff, Charles Hegberg, Larry Trout, Ali Nakhli, Jing Tian</li> <li>Developing High-Performance Bioretention Media and Media Filter Systems for Phosphorus Capture, Curtis Hinman</li> <li>Mitigating Compaction in New Residential Developments: Kick-starting the Soil Reformation Process, Eban Bean, Allan Bacon</li> <li>Field Study on Removal of Nitrogen and Phosphorus by Vegetated Plots with Soils Amended with Water-treatment Residuals, Kirk Barrett, Virinder Sidhu, Dibyendu Sarkar</li> </ul>	<ul style="list-style-type: none"> <li>Promoting Successful Urban Watershed Restoration through Enhanced Bioretention Cell Modeling, Whitney Lisenbee, Jon Hathaway, Ryan Winston, Lamyaa Negm, Mohamed Youssef</li> <li>Evaluating Green Infrastructure Performance under Varying Soil Parameters, Reshmina William, Gabrielle Bethke, Ashlynn Stillwell</li> <li>Use of CHAMPS Model for Simulating Energy and Moisture on an Extensive Green Roof, Yige Yang, Cliff Davidson</li> <li>Impact of Morphology on Infiltration in Green Stormwater Infrastructure, Richard Ampomah, Victoria Reis, Rebecca Connolly, Virginia Smith, Kristin Sample-Lord</li> <li>Modelling the Effects of Inner Structure and Weather Conditions on the Runoff Nitrogen Removal Efficiency of a Bioretention, Kangmao He, Huapeng Qin, Chuansheng Wang, Ming Cheng</li> <li>Analysis of Low Impact Development Using Continuous Simulation Hydrologic Modelling, Patrick McMahon, Clive Sorhaindo</li> </ul>	<p><b>Panel Discussion: Workforce Training and Certification Programs for Stormwater Inspection and Maintenance</b></p> <ul style="list-style-type: none"> <li>Kelly Lindow</li> <li>William Lord</li> <li>Beth Ginter</li> <li>Carol Wong</li> <li>Ted Scott</li> </ul>

3:30 - 4:00 a.m. Networking Break & Poster Session

4:00 - 5:30 p.m. Technical Session 7

Belle Meade I&II	Arlington	Brentwood	Emory	Harpeth I&II
<b>Session 7.1: Sponge City</b>	<b>Session 7.2 : Tools and Initiatives</b>	<b>Session 7.3: Park that Stormwater Here</b>	<b>Session 7.4: LID in the Transportation Environment</b>	<b>Session 7.5: Soils and Plants Symbiosis Considerations in GSI Design, O&amp;M and Life Cycle</b>
Moderator: Steve Trinkaus	Moderator: Scott Dierks	Moderator: Karen Kabbes	Moderator: Ani Jayakaran	Moderator: Neil Weinstein, Mike Clar
<ul style="list-style-type: none"> <li>Innovation and Challenges on Sponge City in China, Vincent Lee, Michael Zhao, Kenneth Kwok</li> <li>China's "Sponge City" Initiative: Program Updates and Case Studies, Yuming Su, Wenliang Wang, Yang Zhao, Shengy Qin</li> <li>Enhancing the Cultural Specificity of Sponge City Development: Lessons Learned from Chinese Stormwater Values, Rui Wang, Hong Wu</li> <li>Build the first Sponge park in China, Xiaolin Zhong, Nian She, William Lucas</li> <li>Transforming the Low-income Neighborhoods to the "Climate-resilient" Neighborhoods by Sponge City Initiatives in Zhenjiang City of China, Hui Chen, Nian She, Xiangqiang Ye, Tueheng Zhang</li> <li>Sponge City (LID) Masterplan for Chengdu International Airport City, Mathew Bamm</li> </ul>	<ul style="list-style-type: none"> <li>Making LID the Preferred and Commonly Used Approach: Lessons Learned Developing Tools, Training, and Implementation in Washington State, Rebecca Dugopolski</li> <li>Developing Stormwater Strategic Asset Management Tools and Guidance on a National Scale: A Status Update on WE&amp;RF's Targeted Collaborative Research Project, Mark Van Auken, Fernando Pasquel, Linda Blankenship, Walter Graf, Allison Deines</li> <li>Placer County's Stormwater Design Tools: A Compliance Guide for California's Phase II Municipal Separate Storm Sewer System Permit, Stefan Schuster, Mary Keller</li> <li>The New Orleans Green Infrastructure Toolkit, Jenny Bywater, Michael Schmidt, Danielle Duhe, Dana Brown, Tyler Antrup</li> <li>Removing Barriers to Low Impact Development in California, Daniel Apt, Darla Elswick, Wayne Carlson</li> <li>Comparing Innovative Decision Support Tools and Methods for Green Infrastructure Strategic Planning, Scott Struck</li> </ul>	<ul style="list-style-type: none"> <li>Restoring Water Quality in Urban Lakes and Ponds: The East Lake Park Experience, David Mason, Bejan Poureshmentalemy</li> <li>DC Water's Green Infrastructure Design Challenge Parks Project, Andrew Potts, Bethany Bezak, Susan Beck, Leah Rominger</li> <li>Innovative New Ideas for Stormwater Management and Recreation in Calgary, Alberta - West District Central Park, Robert Bryant, Ronald Geiger, Kimberly Patak</li> <li>LID BMPs in California State Parks; Retrofits that Prioritize Water Quality Protection and Recreation, Yvana Hrovat</li> <li>Greening the Parks: Incorporating Green Infrastructure into New York City's Parks, Dahlia Thompson, John McLaughlin, Waqas Saeed</li> <li>Build in My Back Yard! A Look at Trail Oriented Development in Carmel, Indiana, Jeremy Kashman, Neil Myers</li> </ul>	<ul style="list-style-type: none"> <li>Improving the Design of Curb Openings in Green Stormwater Infrastructure, Sarah Stoolmiller, Ali Ebrahimiyan, Bridget Wadzuk</li> <li>Case Study: Monitoring and Modeling the Hydrologic Performance of a Right-of-Way Bioswale in NYC, Babak Kasaei Roodsari, Wei Chen, Kimberly DiGiovanni</li> <li>Experimental and Model Study of Road-Bioretention System, Xiaoning Li, Xing Fang</li> <li>Assessment of Green Stormwater Infrastructure Practices on Lorton Road, Fairfax County, VA, Charles Burgis, Gail Hayes, Derek Henderson, James Smith</li> <li>Monitoring 'Airsides' Land Uses at ILM Airport: an Example of LID? Alisha Goldstein, Bill Hunt, Erin Carey</li> <li>The Comparison of Four Distinctly Different Infiltration BMPs along the same Four Lane Urban Street, Kurt Leuthold</li> </ul>	<p><b>Special Session: Soils and Plants Symbiosis Considerations in GSI Design, O&amp;M, and Life Cycle</b></p> <ul style="list-style-type: none"> <li>Meredith Upchurch (Green stormwater infrastructure soils and plants considerations)</li> <li>Heather Ambrose (Fairfax County, VA Bioretention Performance Evaluation)</li> <li>David Hopman (Soils and Plants in GSI in the Southwest)</li> <li>Amanda Hess (Evapotranspiration processes in GSI)</li> <li>Ann English (Lessons learned in use of GSI in Montgomery County, MD)</li> </ul>

8:30 - 10:30 a.m. Technical Session 8				
Belle Meade I&II	Arlington	Brentwood	Emory	Harpeth I&II
<b>Session 8.1: Maintenance: Tools and Observations</b>	<b>Session 8.2: Instigating and Incentivizing</b>	<b>Session 8.3: Planning for Resiliency and Flood Protection</b>	<b>Session 8.4: Advancements in Permeable Pavement</b>	<b>Session 8.5: Beyond Performance: Measuring the True Value of Green Infrastructure in Urban Communities</b>
Moderator: Keith Lichten	Moderator: Saya Qualls	Moderator: Michael Hunt	Moderator: Ken Schiff	Moderator: Jennifer Johnson
<ul style="list-style-type: none"> <li>Rainwater Harvesting Systems and Mosquitoes: Is There a Problem? Kaitlyn Dobyns, Kyrstem Gage, Kathy Gee, William Hunt, Shawn Kennedy</li> <li>Optimizing Operations and Maintenance of LID BMPs, Mikael Isensee, Paige Ahlborg</li> <li>Challenges with Integrating State-Wide Stormwater System Assets into A Large Enterprise Asset Management System, Natalie Postel, Pete Estes, Anwer Ahmed</li> <li>Costs of LID Maintenance in North Carolina, Sarah Waickowski, Bill Hunt, Bill Lord</li> <li>Quantifying Clogging Risk of Roadside BMPs: Development of an Interactive Tool, Kevin Koryto, Aaron Poresky</li> <li>Maintenance of Low Impact Development and its Impact on Long-Term Performance, Ava Moussavi</li> </ul>	<ul style="list-style-type: none"> <li>Lake Simcoe Phosphorus Offsetting Program (LSPOP): Moving beyond Trading using New Growth To Reduce Phosphorus Loading and Increase LID Implementation, Rob Baldwin, Mike Walters, Ben Longstaff</li> <li>Framework for a Performance-Based Green Roof Incentive in New York City, Tyler Carson, Melissa Enoch, Franco Montalto</li> <li>Low Impact Development Certification System: System Proposed To Protect Water Quality In Lake George, NY, Christopher Navitsky, Michele Adams</li> <li>Charlotte Post Construction Stormwater Mitigation Fee Program, Jordan Miller</li> <li>Green = Gold: Demonstrating Sustainability to Achieve SITES Gold in Our Nation's Capital, Altje Macy, Ray Mims, Darren Damone</li> <li>Development of Raleigh's Voluntary Municipal Green Infrastructure Program, Jonathan Smith, Kevin Boyer</li> </ul>	<ul style="list-style-type: none"> <li>Resiliency Through Green Infrastructure Systems, Dana Brown</li> <li>Coordinated Watershed Controls for Flood Risk Reduction and Combined Sewer Overflow Mitigation in the City of Albany, Dayton Marchese, Viktor Hlas, William Simcoe</li> <li>The Transformation of an Urban Residential Street Into a Pedestrian Greenway that Provides Water Quality Treatment and Flood Control While also Enhancing the Neighborhood, Kurt Leuthold</li> <li>Mitigating Urban Heat Island Effect with Green Infrastructure in Gowanus, Brooklyn, Nancy Choi</li> <li>Advancing Green Infrastructure in the Greater New Orleans Area to Enhance Resilience and Reduce Flooding, Anthony Kendrick, David Batts</li> </ul>	<ul style="list-style-type: none"> <li>Nutrient Removal Enhanced by Permeable Reactive Concrete, Andrew Ramsey, Ryan Holmes, Megan Hart, John Kevern</li> <li>Enhanced Infiltration in Permeable Interlocking Concrete Pavements through Temporary Detention of Stormwater, Kirti Sehgal, Jennifer Drake</li> <li>Stormwater Quality and Quantity Management using Porous Asphalt Pavements, Anand Jayakaran, Thorsten Knappenberger, John Stark, Curtis Hinman</li> <li>Stormwater Treatment using Permeable Pavements Comprising Waste Materials, John Monrose, Kiran Tota-Maharaj, Chad Staddon, Abrahams Mwasha</li> <li>Enhancing the Functionality of Pervious Concrete Pavements through Design and Maintenance, Mohammadsoroush Tafazzoli</li> <li>Water-Quality and Hydraulic Performance of Three Types of Permeable Pavement under High Sediment Loading Conditions, William Selbig, Nicolas Buer</li> </ul>	<b>Beyond Performance: Measuring the True Value of Green Infrastructure on Urban Communities</b> <ul style="list-style-type: none"> <li>Jennifer Johnson</li> <li>Kate England</li> <li>Pallavi Mande</li> <li>Matthew Davis</li> <li>Neil Angus</li> </ul>
10:00 - 10:30 a.m. Networking Break & Poster Session				
10:30 - 12:00 p.m. Technical Session 9				
Belle Meade I&II	Arlington	Brentwood	Emory	Harpeth I&II
<b>Session 9.1: Designing for Maintenance</b>	<b>Session 9.2: International Perspectives</b>	<b>Session 9.3: LID Under Challenging Planning, Policies, and Regulations</b>	<b>Session 9.4: Big Data and Sensor Based Monitoring, Control, and Operation</b>	<b>Session 9.5: Out of Site, Out of Mind? Infiltration and Groundwater Impacts</b>
Moderator: Bill Lord	Moderator: Mike Clar	Moderator: Jonathan Smith	Moderator: Jon Hathaway	Moderator: Robert Traver
<ul style="list-style-type: none"> <li>Forensic Investigation of Two Underperforming Raingardens and Recommendations for Rehabilitation, Victoria Reis, Rebecca Connolly, Richard Ampomah, Kristin Sample-Lord, Virginia Smith</li> <li>Exploring Maintenance-friendly Planting Design for Green Stormwater Infrastructure, Hong Wu, John Hall</li> <li>Why Do Some Urban Green Infrastructure Features Thrive Over Time and Others Not So Much? Nancy Ellwood, Keerthi Palanisamy, Kate Moran</li> <li>Report from the Field: Resolving Common Failures of LID Filter Practices, Theodore Edward Scott</li> <li>Design for Reduced Maintenance: Design Considerations to Reduce the Maintenance Burden, Merrill Mark Taylor, Jason Wright, Troy Dorman</li> <li>GI/LID Landscape Maintenance: Design for Function, Don Green</li> </ul>	<ul style="list-style-type: none"> <li>China's Sponge City Program: The Good, the Bad, the Ugly, Mark Merkelbach, John Lenth</li> <li>Stormwater drainage management in Freetown, Sierra Leone with Application of Varying Scale Low Impact Development (LID) Schemes, Mehedi Hasan Tarek, Adil Hassan, Sayedul H. Choudhury</li> <li>Evaluation of Effectiveness of Low Impact Development (LID) Options in Mitigating Water Logging and Drainage Problems of Dhaka, Mehedi Hasan Tarek, Adil Hassan, Sayedul Choudhury</li> <li>LID Practices for Reservoir Water Quality Management: Case Studies in Taiwan, Jen-Yang Lin, Shyh-Fang Kang, Shaw Lei Yu</li> <li>Water Energy Nexus in the United States and Saudi Arabia Low Impact Development, Tony Rizk</li> <li>Towards Dual thinking of Ecology: Raingardens Design In Northern China, Xiaoying Meng, Lisha Liu, Yubo Zou</li> </ul>	<ul style="list-style-type: none"> <li>Meeting Georgia's New Recommended Runoff Reduction Performance Standard: One Metro-Atlanta City's Approach, Brian Watson, Julie Kaplan, Eric Byrne, Jill Bazinet</li> <li>Thinking Big, Acting Small: Case Studies on Planning and Implementing Green Infrastructure in the Greater Boston Area, Jennifer Relstab</li> <li>Beyond the Streets - Urban Green Infrastructure Solutions, Michael Moscarriello, Michael DeVuono</li> <li>Washing 110 Buses a Day with Rainwater: Overcoming Regulatory Obstacles, Michele Adams, Marc Henderson</li> <li>Low Impact Development from the Ground up - Planning a New Ontario town with Low Impact Development as the Basis, Ian Roul</li> <li>Less Is More: Minimizing Your Footprint within Challenging Contexts, Matt Gurrad, Grace Manzano</li> </ul>	<ul style="list-style-type: none"> <li>Reducing Costs of Green Stormwater Infrastructure Monitoring Data Collection to Inform Site Maintenance Decisions With Real-time Soil Moisture Sensing Technologies and the Internet of Things, Karly Soldner, Babak Roodsari, Ziwen Yu, Matthew Fritch, Stephen White, Franco Montalto</li> <li>A Simple Model of Green Infrastructure Soil Moisture Patterns as a Function of Hydrologic Loading, Surface Treatment, and Urban Climate, Bitu Alizadehtazi, Patrick Gurian, Franco Montalto</li> <li>Performance of a "Next Generation" Green Roof with Irrigation and Smart Detention, Nandan H. Shetty, Mark K. Wang, Robert Elliott, Mark Wang, Matthew Palmer, Patricia Culligan</li> <li>Automated Detection of Unusual Soil Moisture Probe Response Patterns with Association Rule Learning, Ziwen Yu, Alex Bedig, Franco Montalto, Marcus Quigley</li> <li>Integrating Artificial Neural Networks and Reinforcement Learning With Real-Time Control of Green Infrastructure Systems, Michael John. Ryan, Bridget Wadzuk, Gerald Zarembo</li> <li>In-situ Measurement of Evapotranspiration from LID Facilities Based on Infrared Thermal Imaging and the 3T Model, Yuanyan Zhang, Huapeng Qin</li> </ul>	<ul style="list-style-type: none"> <li>Factors Affecting Exfiltration Rate from a Subsurface Infiltration Stormwater Control Measure, Jiayu Liu, Michael Borst</li> <li>Impact to Groundwater Quality Due to Infiltration of Urban Runoff: Results of Long-Term Monitoring Studies, Marty Spongberg</li> <li>Groundwater Table Fluctuation from Water Infiltration of Green Infrastructure Sidewalk Planters in Philadelphia, Pennsylvania, Min-Cheng Tu, Robert Traver</li> <li>Geotechnical Risks of Infiltration BMPs: Estimating Groundwater Mounding and Soil Moisture Effects of Stormwater Infiltration, Myles Gray, Aaron Poresky, Eric Strecker</li> <li>Variation of Flow and its Impact on the Performance of an Infiltration Stormwater Treatment System, Heidi Bantilan Guerra, Youngchul Kim</li> <li>Long Term Hydraulic Conductivity of Bioretention Cells, Troy Piriipi Brockbank, John Cheah, Ruben Roelofs, Robyn Simcock</li> </ul>

## Monday Poster Sessions

Investigating the Impacts of Green Roofs' Vegetation Properties on its Function in Controlling Urban Runoffs, Mohammadsoroush Tafazzoli  
A Flexible Tool for Hydraulic and Water Quality Performance Analysis of Green Infrastructure, Arash Massoudieh  
Application of Triple Bottom Line Accounting Tools In Green Stormwater Infrastructure Planning: Evidence from Two Case Studies, Madeline Foley  
Blueprint Columbus – Integrated Planning and GI Design Lessons Learned, William Landshof  
Canopy Storage Capacity of Broadleaf Plants Under Different Temperature and Wetting Regimes, Walter Yerck  
Case Study: Water Quantity and Quality Mitigation Performance of a Constructed Wetland in NYC, Babak Kasaei Roodsari  
Comparing of Stormwater Runoff Yield and Concentration Characteristics between Semi-Pervious and Impervious Road, Jianlong Wang  
Computer Modelling: A Powerful Tool in the Design of LID Projects and Green Infrastructure, Rocky Keehn  
Decentralized Low Impact Development (LID) Practices Addressing the Security of the Water-Energy-Food Nexus, Marina de Macedo  
Ecosystem Service Benefits of Compost-Based Sustainable Management Practices (SMPs), Britt Faucette  
Effect of Precipitation on Bioswale Performance for Control of Stormwater Runoff from Roadways, Azadeh Akhavan Bloorchian  
Estimating Time of Concentration for Overland Flow on Pervious and Impervious Surfaces for LID Planning, Xiaoning Li  
Evaluating the Hydrologic Performance of a Long, Linear Bioswale against Traditional Rain Garden Design in a Highly Urbanized Setting, Elizabeth Calt  
Evaluation and Application of Hybrid LID System for Urban Stormwater Management, Sungmin Cha  
Evaluation of the non-point Pollutant Source Reduction Efficiency of LID Permeable Block with Activated Carbon, Jongyeong Kim  
Evaluation on the Applicability of Biological Waste Resources such as Cockle, Walnut, and Gingko Shell as Filter Media in LID Technologies, Minsu Jeon  
Exploring LID Niches with Urban Plants, Chih-Wei Chang  
Factors affecting Spatiotemporal Media Moisture Content and Temperature Variation in LID Technologies, Sher Gurung  
Field Performance Verification of a High Flow Bioretention System for Basic and Enhanced Treatment under the Technology Assessment Protocol - Ecology, Vaikko Allen  
Green Street Neighborhood Assessment and Design Lessons-Learned in Montgomery County, MD, Michael Perkins  
The Assessment of the Climate Resilience of Landscape Design for Green Stormwater Infrastructure, Nian She  
The Case for Maintenance – Green Roof Weeding and Plant Replacement, Susan Morgan  
The Stormwater Benefits of High-Performance Urban Trees, Jeremy Bailey  
The Study on Water Cycle Efficiency of Green-roof system using SWMM, Hyunsuk Shin  
The Study on Water Cycle Efficiency of Low Impact Development using K-LIDM, Hyunsuk Shin  
Sustainable Water Remediation Using Permeable Concrete, Ryan Holmes  
Using Trees as a Temperature Mitigation Strategy in Camden, New Jersey, Mostafa Razzaghmanesh  
Validation of the SWMM Green Roof Module for an Extensive Green Roof in Syracuse, NY, Lucie Worthen  
Water Quality & Quantity Performance of New Haven (CT) Bioswales, Kimberly DiGiovanni  
When Stormwater Fails – Lessons From the Built Environment, Natalie Carmen

## Tuesday Poster Sessions

Bioretention Cells: Adsorption and Desorption of Naphthalene from Urban Stormwater Runoff, Ceren Akdeniz, Elodie Passeport  
How Can Precast Concrete be Used in Innovative LID Projects? A Look at Technologies and a Super Bowl Case Study, Claude Goguen  
How Low Impact Development Strategies can Mitigate High Intensity Rainfall Events, Steven Trinkaus  
Implication of Sediment Accumulation and Collection in Pre-treatment Basins of Urban Stormwater Green Infrastructures, Franz Kevin Geronimo  
Incorporating Storm Water Inlet Efficiency into Small – Scale Urban Sub-catchment Model to Evaluate Spatial Performance of Green Infrastructure, Leena Shevade  
Inspection System of Green Infrastructure and Low Impact Development Technologies in South Korea, Euihyeok Yoon  
Investigating the Hydraulic Constriction of Perforated Conveyance Pipes in a Stormwater Infiltration Planting Trench System, Noura Abualfaraj  
Jackson's Grant: A Community Development that has Fully Embraced Sustainability, Neil Myers  
Long-term Infiltration Capacity of Different Types of Permeable Pavements, Kirk Barrett  
Low Impact Development: Lessons Learned, Jacob Aalfs  
Low Impact Development Monitoring, Open Data Strategy, Tracking, and Assessment - California LID Evaluation & Analysis Network, Daniel Apt  
Making a Case for Investigating Co-Relation of Soil Composition and Bio-Retention Function: Review of Theory and Practice, Behnaz Safavi  
Measuring Above and Beyond – The Chatham Park Exceptional Design Evaluation, Hunter Freeman  
Mechanisms in a Subsurface Infiltration Stormwater Control Measure, Jiayu Liu  
Modeling Mass Transfer Coefficients in Deep Aeration Tanks, Johnny Lee  
Monitoring Infiltration Movement Through the Soil Profile in Urban Rain Gardens, Matina Shakya  
Monitoring the Rainfall Runoff Response of a Large-Scale Green Roof, Noura Abualfaraj  
Novel Irrigation Technologies for Urban Landscaping, Hailing Yang  
Observed Variability in Soil Moisture in Engineered Urban Green Infrastructure Systems, Bitu Alizadehtazi  
Optimization of the Runoff Retention Capacity of Urban Green Space System in a Highly Urbanized Catchment, Ming Cheng  
Overcoming common challenges of Bioretention with High Flow Modular Biofiltration Systems, Robert Woodman  
pH Profiles Around Pervious Concrete in Fresh Water, Liv Haselbach  
Play Ball! And Manage Stormwater? Do Artificial Turf Grass Fields Effectively Manage Stormwater? Miki Urisaka  
Preliminary Analysis of Biomass and Water Quality for Typha angustifolia in a Controlled Environment, Jaime Thissen  
Protecting Stormwater Conveyances & Streams from Encroachment & Destruction, Maria Price  
Realizing Our Sustainability Potential: Utilizing Urban Trees for Stormwater Management, Shane Carpani  
Replacement of Missing Precipitation Records Amidst Measurement Uncertainty in an Urban Rain Gage Network, Leena Shevade  
Stevens' Living Laboratory for Stormwater Green Infrastructure, Elizabeth Fassman-Beck  
Streamlining Green Infrastructure/Stormwater BMP Design for Transportation Systems, Anwer Ahmed  
Towards Dual thinking of Ecology: Raingardens Design In Northern China, Xiaoying Meng