



Soil in the City Conference 2014

Enhancing Urban Soils for Living Landscapes and Healthy Communities

June 29 – July 2, 2014

**Crowne Plaza Hotel, 160 E. Huron St.
Chicago, IL 60611
Ph. (312) 787-2900**



For online registration and lodging reservation visit:

[Soil in the City Registration](#)

**Early Registration Fee ends on April 15
(Registration fee \$300 after April 15)**

TOUR (Wednesday July 2, 2014 from 12:00 pm to 6:00 pm)

**Sustainable Streetscapes in Chicago “Greenest Street in America”
and Tour of the Largest Wastewater Treatment Plant in the World**

Fee \$40/person, boxed lunch included (limited to 75 participants only, hurry!)

Sunday, June 29, 2014

1:00-5:00 pm W-2170 Business Meeting

Monday, June 30, 2014

7:00-4:30 pm Registration Open

7:00 am Breakfast

Conference Opening & Keynote Speaker

Moderators: *Thomas Granato and Lakhwinder Hundal, MWRD*

7:45 am **Welcome and Opening Remarks**

David St. Pierre, Executive Director, Metropolitan Water Reclamation District

8:00 am **The New Earth Work**

Frances Whitehead, Professor, School of the Art Institute of Chicago

Urban Farming

Moderators: *Lakhwinder Hundal and Kuldip Kumar, MWRD*

8:45 am **‘Greening’ the City Perspective**

Linda Lee, Associate Department Head and Professor of Agronomy, Purdue University

8:55 am **Agrobiodiversity, Cultural Diversity, and Environmental Heterogeneity: Enhancing Productivity and Sustainability of Urban Agriculture Through Participatory Research**

John Taylor, Research Assistant, University of Illinois at Urbana-Champaign

9:20 am **Integrating Urban Agriculture into Organic Waste Recycling Programs**

Kristen McIvor, Director, Urban Agriculture & Local Food Access, Pierce Conservation

9:45 am **Revealing Urban Soil Properties and Spatial Patterns to Optimize Management**

Nele Delbecque, Research Unit Soil Degradation and Conservation, Ghent University

10:10 am *Coffee Break*

Moderators: *Edward Topp, Agri-Food Canada and Dominic Brose, MWRD*

10:25 am **Bugs and Drugs: Considerations for Growing Food Safely in Urban Soils**

Edward Topp, Research Scientist, Agriculture and Agri-Food Canada

10:50 am **Potential for Perfluoralkyl Acid Bioaccumulation in Food Crops**

Andrea Blaine, Environmental Science and Engineering, Colorado School of Mine

11:15 am **Community Bioremediation: Strategies for Healing Our Soils Together**

Nancy Klehm, Social Ecologies Founder and Director of Operations

11:40 am *Open Discussion*

12:00 pm *Lunch*

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Urban Farming

Moderators: Christopher Higgins, Colorado School of Mines and Kuldip Kumar, MWRD

1:15 pm **Comparing Heavy Metal in Biosolids & MSW Derived Compost with Manure**

John Christopher Madole, President and Owner, John Christopher Madole Associates, Inc.

1:40 pm **Fate of Engineered Nanoparticles in Biosolids for Land Application**

Kirk Scheckel, Research Soil Scientist, Office of Research and Development, USEPA

2:05 pm **Understanding and Predicting Spatial Pattern of Heavy Metals in Urban Soils: Lessons from the Baltimore Ecosystem Study**

Kirsten Schwarz, Assistant Professor, Northern Kentucky University and Richard Pouyat, Research Forester, Forest Service, USDA

2:30 pm **Uptake and Bioavailability of Soil Trace Elements in Crops Grown in Urban Soils**

Rufus Chaney, Research Agronomist, Environmental Management and Byproduct Utilization Laboratory, USDA

2:55 pm *Open Discussion*

3:15 pm *Coffee Break*

Moderators: Sally Brown, University of Washington and Lakhwinder Hundal, MWRD

3:30 pm **Using Epidemiology Approaches to Predict Risks Associated with TORCs in Biosolids**

Arjun K. Venkatesan and Rolf U. Halden, Center for Environmental Security, Arizona State University

3:55 pm **Reverse Flow of Urban Nutrients and Pollutants via Sewage Irrigated Veggies in Developing Countries**

Rajiv Sikka, Department of Soils, Punjab Agricultural University, Ludhiana, Punjab, India

4:20 pm **Urban Residuals and Urban Agriculture- Making the Connection**

Sally Brown, Research Associate Professor, School of Forest Resources, University of Washington

4:45 pm *Open Discussion*

5:15-6:15 pm **Social/Poster Session: Exploring Urban Uses for Compost: The Texas Experience**, Lynne H. Moss, PE, BCEE, Vice President, CDM Smith

Tuesday, July 1, 2014

7:00 am *Breakfast*

7:45 am *Welcome and Opening Remarks*

Urban Ecology and Green Infrastructure

Moderators: Nora Goldstein, BioCycle and Oladeji Olawale, MWRD

8:00 am **Compost Use in Green Infrastructure – A Historical Perspective**

Nora Goldstein, Editor, BioCycle

8:25 am **The Secret's in the Soil - Optimizing Soil for Green Infrastructure Performance**

Peter MacDonagh, Director of Design and Science, Kestrel Design Group

8:50 am **Using Biosolids to Increase Growth and Performance of Urban Trees and Turfgrass**

Bryant Scharenbroch, Urban Soil Scientist, The Morton Arboretum

9:15 am **Working with Nature: Compost-Based BMPS in Green Infrastructure Applications**

Britt Faucette, Ecosystem Scientist, Filtrex International

9:40 am *Open Discussion*

10:00 am *Coffee Break*

Moderators: James Montgomery, DePaul University and V. Bala Chaudhary, Loyola University

10:15 am **Hot Spots in Urban Social-Ecological Systems: Streetscape Green Infrastructure in a Desert City**

Mitchell Pavazo Zuckerman, Associate Research Scientist, Biosphere 2: B2 Earthscience, University of Arizona

10:40 am **Urban Fingerprints on Soil Morphology and Hydrology: Field Investigations in U.S. Cities Across Soil Orders**

Bill Shuster, Research Hydrologist, U.S. Environmental Protection Agency and Stephen Dadio Jr., Soil Scientist, Cedarville Engineering Group, LLC

11:05 am **Green Economy and Infrastructure Contributions of USDA Urban and Nonfarm Soil Projects in the U.S.**

Maxine Levin, National Liaison to National Cooperative Soil Survey, NRCS-USDA and Mike Robotham, National Leader, Soil Survey Interpretations and Acting National Leader, Technical Soil Services, NRCS-USDA

11:30 am *Open Discussion*

12:00 pm *Lunch*

Urban Ecology and Green Infrastructure

Moderators: Bryant Scharenbroch, Morton Arboretum and Kuldip Kumar, MWRD

- 1:00 pm **Let It Go Wild: The Impacts of Plants and Cultivation Practices on Stormwater Management**
Scott Dierks, Senior Water Resources Engineer, Cardno JFNew
- 1:25 pm **Use/Misuse of Compost, N-release, and Effect on Performance of Ornamental Plants in Compacted Soils**
Dan Sullivan, Associate Professor, Department of Crop and Soil Science, Oregon State University
- 1:50 pm **Optimization & Challenges with Renewable Energy & Biosolids Management at California Wastewater Facilities**
Greg Kester, Director of Renewable Resource Programs, California Association of Sanitation Agencies
- 2:15 pm *Open Discussion*
- 2:45 pm *Coffee Break*

Moderators: Kuldip Kumar, MWRD and Dan Collins, IWEA

- 3:00 pm **Legal Aspects of Green Infrastructure**
Karen Hansen, Beveridge & Diamond, P.C.
- 3:25 pm **Comparison of Various Bioretention Cell Composition/Recipes on Stormwater Nutrient Retention**
Greg Evanylo, Professor and Extension Specialist, Crop and Soil Environmental Sciences, Virginia Tech
- 3:50 pm **Performance & Challenges of Stormwater Management Using Green Infrastructure at Sustainable Streetscapes**
Jim Duncker, Hydrologist, USGS and Kuldip Kumar, Senior Environ. Soil Scientist, MWRD
- 4:15 pm *Open Discussion*
- 4:45-6:00 pm **Social/Poster Session: Optimizing Arsenic Phytoremediation with the Brake Fern, *Pteris vittata*: Effects of Fertilization on Biomass Production and Contaminant Removal, Sarick Matzen, University of California, Berkeley; NRCS Soil Survey Activities and Products in the Urban Core of Cook County, Lindsay Reinhardt, MLRA Soil Scientist, USDA-NRCS Aurora MLRA Office**

Wednesday, July 2, 2014

- 7:00 am *Breakfast*
- 7:45 am *Welcome and Opening Remarks*

Greening Brownfields

Moderators: Nicholas Basta, Ohio State University and Lakhwinder Hundal, MWRD

- 8:00 am **Restoring Ecosystem Services in Degraded Urban Soils Using Biosolids and Soil Amendment Blends**
Nicholas Basta, Professor, School of Environment and Natural Resources, Ohio State University
- 8:25 am **Brownfields to Urban Ecological Oases: Role of Industrial Ecology & Phytoremediation in Improving Soil Quality**
M. Cristina Negri, Agronomist and Environmental Engineer, Argonne National Laboratory
- 8:50 am **Beneficial Use of Dredge Sediments for Soil Reconstruction**
W. Lee Daniels, Professor, Environmental Soil Science, Virginia Tech
- 9:15 am **Can We Enhance Ecosystem Services by Rehabilitating Existing Urban Soils?**
Susan Downing Day, Assistant Professor and Director, Urban Horticulture Center, Virginia Tech
- 9:40 am *Open Discussion*
- 10:00 am *Coffee Break*

Moderators: Ganga Hettiarachchi, Kansas State University and Oladeji Olawale, MWRD

- 10:15 am **Managing Urban Pollutants to Minimize Human Exposure**
Ganga Hettiarachchi, Associate Professor, Soil and Environmental Chemistry, Kansas State University
- 10:40 am **Evaluation In Situ Soil Amendments for Oral Bioavailability and Remediation of Lead in Urban Soils**
John F. Obrycki, School of Environment and Natural Resources, Ohio State University
- 11:05 am **What We Tell Cities and Community Gardeners – Approaches to Safe, Productive Gardens**
Blase Leven, Tech. Assistance Coordinator, Brownfields Prog., EPA Regions 5, 7, & 9, Kansas State University
- 11:30 am *Open Discussion*
- 12:00 pm *Conference Concludes*
- 12:00-6:00 pm **Tour: Sustainable Streetscapes in Chicago “Greenest Street in America” and tour the Largest Wastewater Treatment Plant in the World.** (Boxed lunch provided, limited to 75 participants only)



Soil in the City Conference Tour

*Sustainable Streetscapes in Chicago
“Greenest Street in America” and Tour
of the Largest Wastewater Treatment
Plant in the World*



Chicago Department of Transportation’s (CDOT) \$14 million Cermak-Blue Island Sustainable Streetscape Project’s first phase was completed in 2012, is a 2.4-km (1.5-mi) stretch of Blue Island Avenue and Cermak Road that boasts the title of America’s greenest street. Project incorporates eight sustainability performance areas. The street features native plants, recycled and local materials, and energy efficient kiosk lighting that is partly powered by wind and solar. High-albedo pavement reduces the urban heat island and photocatalytic cement helps remove nitrogen oxide from the air. The site also uses no potable water and prevents 80% of average annual rainfall from entering nearby combined sewers. CDOT increased the street’s landscape and tree canopy cover by 131% with bioretention cells that extend along both streets and a bioswale that lines one side of Cermak Road. Blue Island Avenue also features permeable parking spaces and bike lanes that created a link in the bike network and addressed a safety problem. By moving parking in 152 cm (5 ft), drivers no longer felt the need to park on the sidewalk to avoid being sideswiped.

The project’s most visible stormwater feature is next to Benito Juarez Community Academy. Rain from the school’s roof and water infiltrated by the plaza’s permeable pavement drain into a water feature. Runoff from the streets is also captured as it flows into the bioretention area. All of this water moves toward the bioswales. Part of the project is also determining how well green infrastructure elements work and gathering locally specific data to improve their performance across Chicago. For the last 3 years and another 1 year into the future, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) and United States Geological Survey (USGS) will monitor rainfall and sewer flows. As part of the Cermak-Blue Island Sustainable Streetscape Project, USGS is collecting data at four groundwater monitoring wells in the project area.

The Stickney Water Reclamation Plant is the largest wastewater treatment facility in the world. The Plant serves 2.38 million people in a 260 square mile area including the central part of Chicago and 43 suburban communities. The plant has a design capacity of 1,200 million gallons per day. Stickney actually consists of two plants; the west side portion of the plant was placed into service in 1930 and the southwest portion of the plant was placed into service in 1939.

The bus for this guided tour will pick up from the Crowne Plaza Hotel, include a stop and brief discussion at the Cermak-Blue Island Sustainable Streetscape Project and a tour of the Stickney Water Reclamation Plant, and return to the Corwne Plaza Hotel. A boxed lunch will be provided. Tour is only available to conference attendees and there is an additional \$40 fee for the tour to cover expenses (maximum participants = 75 only).

Please visit [Soil in the City Registration](#) for conference and tour registration.