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**17th Annual Central States
Water Environment Association
Education Seminar**

***Nutrients in Limbo:
How Low Will You Have to Go
Regulations, Case Studies, and
the Latest Technology***



**Presented by
Central States Water Environment Association**



**at the
Monona Terrace Convention Center
Madison, Wisconsin
April 3, 2012**

***Nutrients in Limbo:
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Nitrogen and Phosphorus represent challenges for today's wastewater industry. Excessive nutrients impact water quality, but they are really misplaced resources. Water quality improvements and sustainable recovery of nutrients are complementary challenges. This seminar will focus on planning for sustainable cities of the future in which recycled water, nutrients, energy, and other resources are conserved, as well as current nutrient impacts on water quality, regulatory plans to lessen impacts, and technologies to remove and recover wastewater nutrients. Plan to attend the 17th Annual Central States Water Environment Association (CSWEA) Education Seminar at the Monona Terrace Convention Center in Madison Wisconsin to hear the latest from national experts on nutrient issues, management, and proven and emerging technologies for nutrient removal.

Who Should Attend?

Wastewater treatment plant managers and operators, process control specialists, designers, regulators, equipment suppliers, and students involved in wastewater treatment. Regulatory agency continuing education contact hours will be awarded.

Seminar Location

The seminar will be held at the Monona Terrace Convention Center at One John Nolen Drive, Madison, Wisconsin. This beautiful facility, located on the shore of Lake Monona, was originally designed by Frank Lloyd Wright and opened in 1997. The facility features a theater-style lecture hall and views of Lake Monona and the state capitol. Parking is available at Monona Terrace and adjacent lots as shown on the attached maps.

Lodging

A limited number of rooms are available at the Hilton-Madison (connected to Monona Terrace) located at 9 E. Wilson St., Madison; ph: (608) 255-5100. The rooms have been reserved at conference rates of \$145 per night (plus tax) and will be held until March 2, 2012. For reservations, please call the Hotel toll-free at (866) 403-8838 and indicate your affiliation with the CSWEA Education Seminar. Self-parking is available at the hotel for \$13 per day or in nearby municipal ramps for a fee.

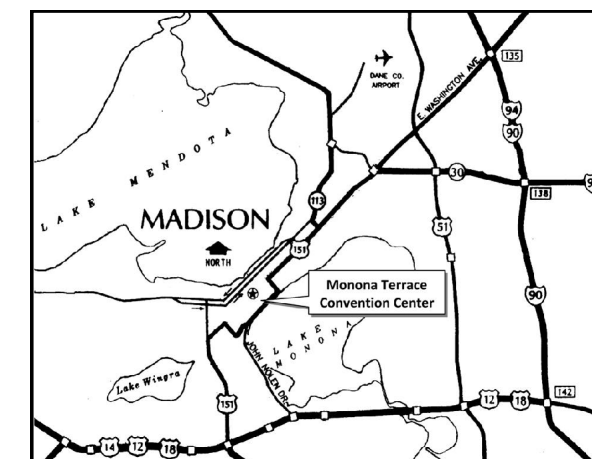
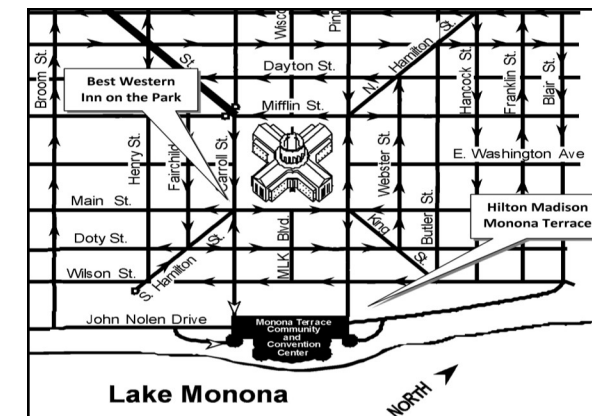
Additional rooms are available at the Best Western-Inn on the Park (2 blocks from Monona Terrace) located at 22 So. Carroll St., Madison; ph: (608) 285-8000. These rooms are available at a conference rate starting at \$99 per night (plus tax) and will be held until March 2, 2012. For reservations, please call the Inn on the Park toll-free at (800) 279-8811 and indicate your affiliation with the CSWEA Education Seminar. Free parking is available at the Inn on the Park for guests through 5 p.m. April 3, 2012. All rooms will be filled on a first-come, first-served basis.

**See the CSWEA web site
for additional lodging information—
<http://www.cswea.org>**

CSWEA Education Seminar Committee

Committee Chair	Scott Fronck
Past Chair	Beth Vogt
Technical Program	Daniel Zitomer (Chair) Steve Arant William Boyle Rich Hussey Rachel Lee Paige Novak Dave Raby

Local Arrangements	Matt Allen
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Registration	Anne Lecuyer
Brochure	Chet Welle
Executive Committee Coordinator	Eric Lecuyer, CSWEA Executive Director



**Central States Water Environment Association, Inc.
3809 Shenandoah Drive
Crystal Lake, Illinois 60012**

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**Tuesday, April 3, 2012
 Madison Wisconsin
 Reception – April 2nd**

The pre-seminar Reception is jointly sponsored by the CSWEA Education Seminar Committee, the Students Committee and Young Professionals (YPs) Committee. All seminar attendees, CSWEA YPs and student chapter members are invited to meet the seminar speakers at a reception (cash bar) on Monday, April 2nd from 5:30 – 7:00 pm at the Monona Terrace Convention Center.

Seminar – April 3rd

7:15 –8:00 a.m. Registration and Continental Breakfast

8:00 - 8:10 a.m. Introduction and Welcome
*Beth Vogt, President CSWEA,
 Fox River Water Reclamation District, IL*

8:10 - 9:00 a.m. Closing the Water Cycle and Recovering Water, Energy, Nutrients, and Other Resources in Cities of the Future
*Vladimir Novotny, Ph.D., P.E., BCEE
 AquaNova, LLC*

Cities of the Future is a name for the worldwide effort of water and other professionals to make a paradigm switch of urban water, stormwater, and used water management that would be carbon neutral or better. The ways for switching from the current unsustainable linear urban metabolism system to hybrid systems whereby used water and organic solids are resources which can be reused and recycled, and nutrients not just removed but recovered for reuse will be outlined. Several examples of new “ecocities” being currently developed will be presented.

9:00 - 9:40 a.m. Nutrient Sources and Transport in the Mississippi River Basin
Mark David, Ph.D., University of Illinois

Nitrogen and phosphorus in rivers of the Mississippi River Basin lead to local water quality problems, as well as hypoxia in the Gulf of Mexico. Agriculture and point sources both contribute nutrients, and the importance of each to nutrient loads will be discussed. A reduction of 45% in both nitrogen and phosphorus nutrient loads is called for in the current action plan to reduce the hypoxic zone, and the presentation will discuss why this is so difficult to achieve and why we have made no progress.

9:40 - 10:00 a.m. IL Regulatory Update
Marcia Wilhite, Illinois EPA

10:00 - 10:20 a.m. MN Regulatory Update
Rebecca Flood, Assistant Commissioner-Water Policy, Minnesota Pollution Control Agency

10:20-10:40 a.m. Morning Break

10:40 - 11:00 a.m. WI Regulatory Update
*Ken Johnson,
 Wisconsin Department of Natural Resources*

11:00 - 11:20 am. USEPA Regulatory Update
George Azevedo, USEPA Region 5

11:20-12:00 Morning Panel Question and Answer Period

12:00 - 1:00 p.m. Lunch

1:00 - 1:40 p.m. Prevention and Remediation of Advanced (Hyper) Eutrophication, Pitfalls and Implication for TMDL
*Vladimir Novotny, Ph.D., P.E., BCEE
 AquaNova, LLC*

Nutrient loads to receiving surface and ground waters have dramatically increased throughout the world, creating eutrophic and hypertrophic water quality in lakes and reservoirs exemplified by harmful algae blooms caused by cyanobacteria. Cyan-HABs are exhibited by scums and pea-soup appearance of the water body. The latest findings and modeling methodologies will be outlined along with the needs for interdisciplinary research.

1:40 - 2:20 p.m. Strategies for Upgrading Existing WWTPs to Meet New Nitrogen and Phosphorus Limits
Christine deBarbadillo P.E., Black & Veatch

As the need to meet nitrogen and phosphorus limits becomes widespread, many treatment plants throughout the Midwest will be upgrading their existing facilities. This presentation will discuss methods for upgrading existing facilities to meet these nutrient limits. Process options for meeting progressively more stringent phosphorus limits will be discussed. Examples of upgrades of different WWTP’s will be presented.

2:20-2:40 p.m. Afternoon Break

2:40 - 3:05 p.m. Struvite Recovery at the HRSD Nansemond Treatment Plant using the Ostara Process
*William Balzer, PE, Nansemond Plant Manager,
 Hampton Roads Sanitation District*

This presentation discusses the new nutrient regulations on the Chesapeake Bay that have spawned a different approach to dealing with nutrient control at HRSD’s Nansemond Treatment Plant. HRSD and Ostara Nutrient Technologies, Inc. designed the first Nutrient Recovery Facility on the Chesapeake Bay. The facility recovers phosphorous and ammonia from side stream recycles in a large scale biological nutrient removal plant. The nutrient regulations in place today and in the future will reduce the availability of critical nutrients for agricultural use as phosphorus becomes a valuable commodity.

3:05 - 3:30 p.m. Advanced Nutrient Removal at the F. Wayne Hill WRC
Richard Porter, Gwinnett County Department of Water Resources

The F. Wayne Hill WRC discharges to one of the primary water sources for the metropolitan Atlanta Region and is a cutting-edge example of wastewater reclamation. The treatment center meets an effluent phosphorous limit of 0.08 mg/l with various advanced processes. The presentation will discuss the processes and plant performances over the last 10 years. Success stories and lessons learned will be shared.

3:30 – 3:50 p.m. Phosphorus Reduction at the Mankato MN WWTP
*Mary Fralish, Deputy Director Public Works,
 Environmental Services, City of Mankato*

A basin-wide phosphorus discharge permit and a implementation plan essentially limited phosphorus discharges in the watershed to 1mg/L. In response, the City of Mankato added a facility to reduce phosphorus levels to approximately 0.3 mg/L and produce water which meets the California Title 22 Standards for water reuse. The City has been able to assist neighboring communities through trade agreements by selling them phosphorus credits.

3:50 - 4:10 p.m. Afternoon Panel Question and Answer Period

4:10 - 4:20 p.m. Closing Remarks and Adjournment
*Scott Fronck,
 Chair, CSWEA Education Seminar Committee;
 Black & Veatch*

17th Annual Education Seminar Speakers

Vladimir Novotny, Ph.D., P.E., BCEE - President of AquaNova, LLC Newton, MA

Mark David, Ph.D. - Professor of Natural Resources and Environmental Sciences University of Illinois at Urbana-Champaign

Marcia Wilhite, Chief, Bureau of Water for Illinois EPA Springfield, Illinois

Rebecca Flood, Assistant Commissioner-Water Policy, Minnesota Pollution Control Agency

Ken Johnson, Water Division Administrator, Wisconsin Department of Natural Resources Madison, WI

George Azevedo, U.S. EPA Region 5 NPDES Nutrient Permitting Coordinator, Chicago, IL

Christine deBarbadillo, P.E. . Process Specialist, Black & Veatch Gaithersburg, MD

William Balzer, PE - Nansemond Plant Manager Hampton Roads Sanitation District, Suffolk VA

Richard Porter, Plant Superintendent, F. Wayne Hill Water Resource Center Buford, GA

Mary Fralish, Deputy Director of Public Works, Environmental Services City of Mankato MN

This program is being presented by the Central States Water Environment Association Inc. (CSWEA) as a service to its members. The information, materials and/or opinions presented by program participants represent their knowledge, and views on the selected topics and do not necessarily represent the position of CSWEA.

**PLEASE REGISTER ME FOR THE 1-DAY EDUCATION SEMINAR
*Nutrients in Limbo: How Low Will You Have to Go
 Regulations, Case Studies, and the Latest Technology - April 3, 2012***

Name (First and Last) _____
 Organization or Affiliation _____
 Street Address _____
 City _____ State _____ Zip _____
 Telephone _____ Fax _____
 E-Mail Address _____
 Amount Enclosed _____
 Membership Association _____

Visit our website at <http://www.cswea.org> for more information and for

ONLINE REGISTRATION AND PAYMENT

Please register early.

Purchase orders will not be accepted.

- Registration fee (includes continental breakfast, lunch, refreshments, and proceedings)
 Fee Per Person by March 19 After March 19
 Full \$195 \$220
 Student \$25 \$30
- Attendance is limited to the first 306 registrants.
- Proceedings will be provided on CD only to all attendees. No paper proceedings will be provided.
- Lunch will not be provided for those registering after March 28 or onsite.
- No refunds will be given after March 28.
- Cancelled checks will serve as registration verification. Please provide e-mail address ONLY if additional confirmation is desired.
- Make check payable to: Central States Water Environment Association, Inc.**
 Detach this form and mail with check to:
C/O: Central States Water Environment Association
3809 Shenandoah Drive
Crystal Lake, IL 60012

**Phone and Fax: Anne Lecuyer, (815) 455-2715
 Email: CSWEA@ymail.com**

Please indicate below any special accommodations you require from the Convention Center to allow your full participation in the Education Seminar.