

Index

Message from the Chair	.2
2017 WAFSCM Conference Recap	.3-4
2017 WAFSCM Scholarship Recipient Article 1	.5
WAFSCM Conference 2018—Save the Date	.6
2017 WAFSCM Scholarship Recipient Article 2	.7-8
Award nomination and HEC-RAS training information	.9
Thank you to the 2017 WAFSCM conference sponsors and exhibitors	.10
Membership form	.11
WAFSCM Board Members	.12



2017 WAFSCM Conference Recap

2018 WAFSCM Conference will be held November 7th – 9th at

The Ingleside Hotel 2810 Golf Road Pewaukee, WI 53072

Message from the Editor

The WAFSCM newsletter is published twice a year to update members on chapter activities and to provide information on publications, seminars, etc. that may be beneficial to our water community. If you have articles, announcements, or other information that you would like us to include in future newsletters, please forward it to me at <u>BPowers@scsengineers.com</u>.

Thank you to all the newsletter contributors and to Rhonda Janos for the newsletter preparation.

Betsy Powers, P.E.

Newsletter Editor





Message from the Chair Laura Rozumalski, PE

Hello WAFSCM Members,

Welcome to WAFSCM 2018! We are excited for this new year and are off to a good start. Thank you all for your participation in our organization, and another big thank you for the opportunity to serve as your Chair for the upcoming years. It is a great privilege, and I'm very much looking forward to the times to come. Our Outgoing Chair, Steve Wurster, did an excellent job providing direction and leadership, and I plan to continue with the goals and vision he helped define.

One type of activity we plan to have more of this year is our social events. It's always great to get together in person for conversation and peer learning. We plan to have a few purely social/ networking get-togethers and also a few continuing education opportunities. If anyone has recommendations for topics they'd like to learn more about or would like to present at a twilight session, please reach out to either myself or our Vice Chair, Megan Bender.

Another initiative we're putting in effort to support is the Rapid Assessment Strike Teams. This program was very well received by our membership at last year's conference after Paul Osman's presentation and many members expressed interest in volunteering for the program. We will continue to coordinate with the Wisconsin DNR to find ways WAFSCM members can get involved as volunteers for this emergency management program.

And lastly, don't forget to mark your calendars for this year's WAFSCM conference. It will be held November 7-9 in Pewaukee. We are starting in on the planning efforts, so if you'd like to get involved with this, or any other WAFSCM function, please get in touch!

All the best,

Laura Rozumalski, PE FreshWater Engineering WAFSCM Chair Irozumalski@freshwatereng.com







2017 WAFSCM Conference Recap

The 2017 WAFSCM Annual Conference was truly a resounding success. The conference started with a packed room of eager engineers learning directly from Robert Pitt on how to use WisSLAMM (basics) and advanced Q&A. It included a hands-on portion where attendees were able to interact with the software. Some of the engineers continued their learning immediately after in the Engineering Ethics Workshop with Ginny Plumeau from the University of Wisconsin Continuing Education.

The evening reception included plenty of appetizers as well as lots of gaming (card playing that is). The evening closed with the regular outing to Monks after being shot down at the local bar inside the resort.

The main day of the conference started with ASFPM's Executive Director, Chad Berginnis, giving us the update and latest news from National. In addition, Dave Fowler chimed in with his legislative update. The rest of the day brought lots of great speakers including the Luncheon Keynote speaker, Rodney Beadle, from Engineers in Action. He literally stepped off a plane from the island of Dominica (not the DR) where he had been doing service leadership work in help-ing the recently devastated Caribbean Islands.



Sue Josheff – Lifetime Achievement Award





Doug Kerns—Local Award for the City of La Crosse Floodplain Inventory Project

Rhonda Janos—Jimmy Award for her work on the WAFSCM newsletter

During lunch, awards were also handed out to the above well deserving recipients:

Continued on next page

<u>WAFSCM Conference</u> <u>Planning Help</u>



Interested in joining a WAFSCM committee? Consider joining the 2018 WAFSCM Annual Conference Planning Committee. We would love your help! If interested, please reach out to <u>Megan Bender</u>, or any of the board members listed at the end of this newsletter.



2017 WAFSCM Conference Recap (Continued)

To close out the day, Paul Osman from Illinois Department of Natural Resources (DNR) and Michelle Staff from Wisconsin DNR gave a memorable presentation on a new program that the Illinois chapter has initiated to help flooded communities called Rapid Assistance Flood Team (RAFT), in which a mobile task team would be deployed during disaster events to provide shared resources, reporting, etc.

The field trip on Friday was to the Ecosystem Restoration and Kilbourn Dam Tour.



Linda explains the restoration performed



The Dam in action



Some History of the Dam



Prairie Restoration Tour at Riverland Conservancy

Thank you to all the attendees for helping us make this annual event so successful! We look forward to seeing everyone this year in Pewaukee on November 7-9 for our 16th Annual WAFSCM Conference! Follow our website to stay informed about our conference (<u>http://www.wafscm.org/annual-conference/</u>). As usual, if anyone is interested in helping with the conference, please contact **Megan Bender** (<u>megan.bender@jacobs.com</u>), as we are always looking for fresh ideas and new energy!!





2017 WAFSCM Scholarship Recipient Article

GuoYu

If I ask you to choose 10 words to describe 2017, flood is probably one of them. Floods seem to be happening more or less everywhere and having big impacts on many places. Generally, the first step of flood risk management is to estimate the relationships between flood magnitude and the associated probabilities of occurrence, also referred to as flood risk analysis. Trying to develop a new framework, which can be used to derive robust flood frequency analysis is the main motivation for why I do what I do.



Last October, I attended the WAFSCM conference at Wisconsin Dells and presented my research on "Flood Frequency Analysis using Stochastic Storm Transposition and Rainfall Remote Sensing".

This conference was particularly exciting for a graduate student to learn about the latest technologies applied in floodplain and stormwater management. It was also a great experience for me to meet people from different organizations but working on the similar topic.



During my presentation, I mainly introduced our web application, which is accessible to everyone for deriving rainfall intensity duration frequency (IDF) curves. The link to our web application is <u>http://her.cee.wisc.edu/projects/rainyday/</u>. The idea behind this application is that we can effectively lengthen the period of record by using the nearby rainfall observations (remote sensing data). During the conference,

some colleagues stopped by and asked me how they can use our tool for their study. I want to share the story that some of them actually started using our web application after the conference. It is an amazing experience to find out that our research results are useful to other people who also endeavor to manage our floodplain better. In addition, I also collected invaluable suggestions or even challenging questions from experienced engineers and professors. These suggestions drive me to think how can I better defend our approach from a scientific perspective and improve our web application.

Throughout the conference, I also had an opportunity to expand my view of how to use the concept of low impact development (LID) to better manage stormwater. LID practices mimic natural processes, increasing the permeability of the land surface and protecting the water quality and associated aquatic habitat. I was excited to have a chance to see how green infrastructure works in reality via the physical models presented by various vendors during the conference.

At the end, I want to sincerely thank WAFSCM again for the registration scholarship!

Guo Yu, PhD Student







Job Postings

Did you know WAFSCM posts WAFSCM-relevant job postings on our website? Check it out on our website at http://www.wafscm.org/training-education/news-events/!





2017 WAFSCM Scholarship Recipient Article

Adrienne Cizek, PhD, Stormwater Solutions Engineering, Inc.

The Many Faces of Stormwater Management: Snowmelt

After many months of winter in Wisconsin, we are all excited when the sun shines bright, temperatures rise above freezing, and those dirty, grey snow piles begin to disappear. It seems like people get a burst of energy, emerging from a long winter of hibernation, invigorated by the prospect of spring. Yes, we all know the feeling.



However, even us water specialists often forget about the effects this cheery event has on the environment around us. We can see the snow, dirt and salt melting into continuous streams of water, flowing through gutters, curbs, and sewers. And where does that snowmelt end up?

Precipitation during the spring, summer, and fall will hit the ground and make its way to our water bodies as "stormwater runoff." We all know the story: the natural stormwater runoff pathway is altered by converting vegetated surfaces to pavement or rooftops, stormwater runoff occurs at faster rates, higher volumes, and with more pollutants. We have made huge strides in the past two decades at reducing the negative effects of stormwater runoff on our freshwater resources by using stormwater best management practices (BMPs) and green infrastructure (GI).

Precipitation in the winter is wholly different. Instead of creating almost instantaneous stormwater runoff, precipitation during the nearly 5 months (or more!) of winter remains mostly in place until the first major spring melt, at which point it melts and enters our waterbodies over an approximate 10-day period. The rate that snowmelt enters waterbodies is slower than the warm weather rain events for which we are used to designing, but the volume and pollutant concentration is much higher. On top of this, the natural stormwater pollution buffers, such as vegetation and microbes in soil, are underequipped to handle this surge of melt and associated pollutants.

Water, water everywhere!

Moving water has energy. If you've ever stood in a stream with any sort of current, you have probably felt this energy pull at your ankles or legs. As stormwater runoff enters streams, it will increase the energy of the stream, resulting in movement of sticks, sand, and rocks further downstream. This process is normal and natural in streams. However, unmanaged stormwater runoff from urban areas often has so much energy that it will tear apart a stream bed, resulting in a deep, vacant, unstable gully. Stormwater runoff has much more energy than snowmelt, but only lasts for short durations. Snowmelt, on the other hand, will move smaller sized sediment for a longer duration. So, although not seeming to have a large effect on receiving water stream beds, the effect is actually more gradual, but can be just as detrimental in the long run. This is particularly a problem because streambanks are at their most vulnerable in spring, without the protection of established vegetation for stabilization.

What's in snowmelt?

Apart from its sheer volume, snowmelt contains higher concentrations and additional pollutants compared to warm weather runoff. In general, stormwater pollutants from urban and suburban watersheds include sediment, nutrients, heavy metals, oils and fuel byproducts (i.e. polyaromatic hydrocarbons, or



2017 WAFSCM Scholarship Recipient Article (Continued)

Adrienne Cizek

PAHs). These pollutants are present year round, through atmospheric and automobile deposition. During colder months, the concentration of PAHs will increase because of increased, but less efficient, fuel combustion. Additionally, cold weather pollutants, including salts and sand for anti-skid applications and cyanide or other salt additives will also be present. Nutrients in runoff and melt, such as nitrogen and phosphorus, can lead to algae blooms in our surface waters. Cyanide and heavy metals are toxic to aquatic species, and humans, at high enough doses. Sodium and chloride are mobile and persistent in the environment and affect pH and soil structure.

Removal and management of these pollutants in snowmelt is complicated by the nature of how snow melts. Early freeze/thaws move soluble pollutants to the edges of the snow crystals. Once the official spring thaw commences, many of the soluble pollutants are accessible for transport in the first snowmelt, resulting in a flushing of highly concentrated solutions of cyanide, sodium, chloride, metals, and dissolved nutrients. Unlike warm weather runoff, this "first flush" does not contain much sediment, as flows are still too small to move the grains. As snowmelt increases, small and medium grain sediment and associated pollutants (i.e. PAHs, adsorbed nutrients and metals) are transported into the storm sewer and surface waters, but at this point, many of the soluble pollutants are depleted. Finally, the first spring rainfall will clean the remainder of larger particles from the streets and parking areas, washing these too into the storm sewers and surface waters.

What can be done?

Interdisciplinary work and collaboration are needed to address the impact snowmelt has on our waterbodies. Promising work by municipalities, including the City of Cudahy, has included salt application reduction and/or improved equipment calibration. Minnesota Pollution Control Agency provides a free tool for public and private entities to explore other site-specific options for reducing cold weather pollution (<u>www.wintermaintenancetool.com</u>). Exploring these or other similar options will require time, discussion, and evaluation, but are helpful in the long run.

Immediate (next winter) simple practices, including storing snow piles off paved surfaces directly connected to the storm sewer, redirect snowmelt over soil and possibly vegetated surfaces. Providing opportunities for infiltration, short-term storage, and dilution of that first pollutant-laden flush of snowmelt will reduce the shock of these toxins to the ecosystem. Adapting warm-season stormwater mitigation storage practices, such as retention ponds, to include and use additional cold-season storage provides more opportunities for sedimentation and other treatment processes to occur. Implementation of green infrastructure devices, such as permeable pavement and rain gardens, also shows a great deal of promise for managing both warm and cold season urban runoff by slowing initial flow down. In all cases of promoting infiltration, care must also be taken to ensure a safe distance between shallow soil flow pathways and groundwater sources.

The solution for this pollution will certainly be multifaceted. So, this spring, get outside and enjoy the sunshine and warm weather, observe the snowmelt that you may have previously ignored, get those brain juices working, and applaud permeable pavement and rain gardens around your city for their "off-season" work. Oh, and always remember: don't eat yellow (or grey and salt-laden) snow.





Award Nominations for 2018 Annual Conference Nominations due August 17, 2018

WAFSCM is currently accepting nominations for awards to be presented at the 2018 conference to be held November 8, 2018 in Pewaukee, WI. You may nominate deserving parties for any of the five categories below. Self-nominations are accepted for the Excellence in Project Design or Implementation award.

Award categories include:

- Chapter Service Award
- Local Award for Excellence
- Excellence in Project Design or Implementation
- Lifetime Achievement Award
- Jimmy Award

More award information and nomination forms may be found on the WAFSCM website (http://www.wafscm.org/annual-conference/award-nominations/).

Nominations are due **August 17, 2018**, and questions can be sent to Laura Kletti Herrick at <u>lherrick@sewrpc.org</u>.

Looking for HEC-RAS Training? A Message from Howard Rosen, UW-Madison,

Engineering Professional Development

The University of Wisconsin-Madison (UW) has an agreement with Association of State Floodplain Managers (ASFPM) whereby ASFPM members can receive a \$200 discount to attend the UW's various HEC-RAS classes, which WAFSCM members are fully eligible to receive (just use the discount code found on this page): <u>https://epd.wisc.edu/asfpm</u>

In addition, UW's HEC-RAS classes have been approved for CFM credit.

The next HEC-RAS classes are being offered in Madison, WI, starting May 15, 2018. Here is the announcement which includes links to the course descriptions and enrollment (<u>https://epd.wisc.edu/hec-ras-training/</u>).





Thank you to the 2017 WAFSCM Conference Sponsors and Exhibitors!

We had a great conference in Wisconsin Dells last October, and a lot of that success is due to the wonderful Sponsor and Exhibitor support. The contributions from our Sponsors and Exhibitors helps WAFSCM provide a quality conference at a very reasonable cost, so please let them know you appreciate their support.

Heather loved working with all of our long-term Sponsors and Exhibitors at the 2017 conference, and she will be reaching out to find some new supporters as well. If you are interested in being a sponsor or exhibitor at the 2018 conference or have any questions, please contact Heather at <u>heather.schwar@cardno.com</u>.

By Heather Schwar, 2017 Conference Sponsor and Exhibitor Coordinator



Back to index



Membership Application/Renewal Form

Wisconsin Association for Floodplain, Stormwater, & Coastal Management

Membership Fee: \$20.00 Payments received from January 1 through September 30 are for current year membership. Payments received from October 1 through December 31 will also include next year membership.

Name:			
Title:			
Organization:			
Address:			
City:	State:	Zip Code:	
Phone:	Ext.:		
E-mail:			
Would you like to receive	e occasional announceme	ents, newsletters and/or notices via E-mail?	
□Yes □No			
Other Affiliations:			
Primary Interest:	🗌 Floodplain	Stormwater Coastal	
Would you like to participate on a committee? If so, check the appropriate box(es) below.			
☐Floodplain □Legislative	☐Stormwater ☐Newsletter	□Coastal □ Website □ Membership □None	
Referred By:			

Please include a check for the annual Membership Fee of \$20.00 made payable to WAFSCM

Return to: Kristen Belan, PE, CFM WAFSCM c/o R.A. Smith National, Inc. 16745 W. Bluemound Road Brookfield, WI 53005-5938

If you have questions:

Contact Kristen Belan at (262) 317-3224 or Kristen.Belan@rasmithnational.com



WAFSCM Board Members—2018

Chair Laura Rozumalski Freshwater Engineering LLC <u>Irozumalski@freshwatereng.com</u> 608-616-0128	Membership Kristen Belan R.A. Smith National, Inc. <u>Kristen.Belan@rasmithnational.com</u> 262-317-3224
Vice Chair Megan Bender Jacobs <u>Megan.bender@jacobs.com</u> 414-847-0208	Newsletter Betsy Powers SCS Engineers bpowers@scsengineers.com 608-216-7347
Secretary Kari Papelbon, City of Oak Creek <u>kpapelbon@oakcreekwi.org</u> 414-766-7027	Education Committee Chair Open
Treasurer Diane Doll M Squared Engineering <u>ddoll@msquaredengineering.com</u> 262-376-4246	Legislative Committee Dave Fowler Stantec David.Fowler@stantec.com 414-277-6368
Past Chair Steve Wurster Ruekert-Mielke, Inc. <u>swurster@ruekert-mielke.com</u> 262-542-5733	Webmaster Ryan VanCamp SEH, Inc. <u>rvancamp@sehinc.com</u>
WDNR Liaison Michelle Staff Wisconsin Department of Natural Resources <u>Michelle.Staff@Wisconsin.gov</u> 608-266-3093	Awards Laura Kletti Herrick Southeastern Wisconsin Regional Planning Commission <u>Iherrick@sewrpc.org</u> 262-953-3224
Scholarships Katie Sommers Wisconsin Emergency Management <u>Katie.Sommers@wisconsin.gov</u> 608-242-3222	

