Great Rivers chapter
INTERNATIONAL EROSION CONTROL ASSOCIATION
A Newsletter For Members and Friends of the Great Rivers Chapter of the International Erosion Control Association
Winter 2009 NEWSLETTER

A Trip to India by Rebecca Kauten

Most women in the tribal areas walk 4-6 kilometers one way each day to fetch water for their families. It takes most of the day, and often the quality of the water they carry home is marginal.

It's usually my job as board secretary to take meeting minutes for our quarterly IECA conference calls. However, January's call would have cost me about $30 to dial in, as I was in Bangalore, India at the time. I was invited on this trip by Dr. Mary Skopec of the Iowa DNR, who is also adjunct faculty at the University of Iowa. She and Dr. M.L. Raghavan accompanied twelve students from the University of Iowa on this three week journey to learn about public health, water resources and sustainability.

We toured through south-central India's state of Karnataka. The first leg of the trip was hosted by NGOs in the area that are working with tribal communities on rainwater harvesting and other drinking water collection and storage systems. In this region, fluorosis is a serious health risk due to high mineral content in groundwater. As an alternative, NGOs are raising funds to install rainwater harvesting systems such as cisterns, rain barrels and recharge wells with underground storage tanks as a means of providing safe drinking water to thousands of tribal communities throughout the region.

The second half of the trip was spent in the city of Bangalore, compounded with visits to other nearby communities also addressing water resource concerns. Along the way to and from the city, road construction abounds. The city of Bangalore doubled its population, from five to ten million, in less than a decade. While the population grew, infrastructure remained as it was decades ago; degrading. A two-hour drive from Bangalore to Mogobal was peppered with intermittent lane changes to accommodate for ongoing road construction. Cities and towns along the route to and from the larger metropolis are also at the mercy of eminent domain. Buildings that have stood for decades, if not centuries, are being sliced open to make way for commerce and travel.

Is this justified? Is there a better way? If you ask someone in India, they will likely bob their head from side to side – the universal response that can mean nearly anything a person desires. (I came to the conclusion that such head bobbing is code for "wouldn't you like to know.") As it happens, most Karnatakans I spoke with while there seems to have an unusual sense of peace and acceptance for both

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Because of the high fluoride content in much of southern India's groundwater, rainwater harvesting often serves as a viable option for small scale drinking water supplies. The water is diverted through primary treatment (the funnel) to filter out large trash and leaf litter. Then the water decants in the large cement tank where a sand filter removes the smaller impurities. A family of four can use this system as a drinking water source by collecting rainwater during the monsoon and using it for cooking and drinking during the dry season, which is approximately 8 months of the year.

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SPRING…she's almost here….I think.

SPRING she's almost here…I think.
After an exhausting construction season winter is welcomed with open arms, if for no other reason than just to get a break! We hunker down and get prepared for another long winter. For many, the first few weeks of winter are wonderful. The first snow is almost magical, Then reality starts to set in, the first winter ideal to be shattered was the snow. The novelty of the first snow quickly wares off after the first few inspections completed up to my knees in drifted snow banks. Second to go is the patience. It's easy to dismiss and sometimes joke with site superintendents about erosion control while there is two feet of snow cover on the ground and 4 feet of frost should make my job that much easier (you would think). However once we get into the January and February freeze thaw cycles it is made very apparent how serious winter runoff truly is.
Then when winter is at its worst there is a beacon of light, the International Erosion Control Association's annual Environmental Connection Event. I was once again fortunate enough to be able to attend this year's stellar event in Dallas, Texas. As usual the IECA did not disappoint. Held at the amazing Hilton Anatole in downtown Dallas, it truly was a beautiful venue. As with many events in this economy attendance appeared to be down from previous years. The weak condition of the economy reared its head and reminded all of us that no sector was left untouched by the current downturn. However given the economy's current state the turnout was actually pretty good. Although the attendance numbers may have been off the show certainly was not. The IECA did a tremendous job of keeping up the standard of excellence when it came to the educational and vendor networking opportunities.
The most important sign that spring is here is, of course, the IECA Great Rivers Chapter Spring Conference! This year's event is being held in Columbia, Missouri and will have amazing line up. As we generally rotate the spring and fall conferences around I am not always available to attend both our spring and fall shows but with the strong program this spring I am just going to have to make it happen this year and I hope you are able to do the same! You should have received a conference flyer a few days ago and there is also one attached to this newsletter, it's a short notice but the show will be well worth it. So get your registration filled out and sent in as soon as possible. Between another amazing IECA Environmental Connection and IECA Great Rivers Chapter event and the fact that I am beginning to see these strange brownish greenish patches of what resembles grass (at least what I remembered grass looking like) I am going to say that spring may be close at hand. Hope to see you at the show.

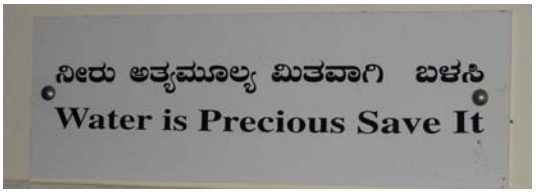
Until next time, stay warm, stay safe and keep your mud on your OWN sites.

Thank you for the opportunity to serve,

Thomas M. Wells, CPESC, CISEC
IECA Great Rivers Chapter President

the rapid change being thrust upon them by modernization and technology, and a similar calm appreciation for what seems to withstand the test of time. The thousand year old temples and aqueducts juxtaposed by the ringing of cell phones in tribal villages with no running water make for the strange dichotomy that *is* India itself.

As Dr. Raghavan stated to the students, India exists in many centuries. A native of nearby Chennai (formerly Madras), Raghavan has seen the bizarre shifts from ancient to modern culture – while somehow retaining both in some strange sense of balance. Perhaps the origins of the Hindu faith keep much of the country open to change, diversity and a constant state of flux. Being as an intersection on the ancient Silk Road, such change and progress are probably expected as time passes. However, to an outsider it poses far more questions than answers.



Water is precious: This sign was posted in one of the tribal hospitals we visited on the trip. Being an arid climate with no major water body nearby, drinking water is most certainly a precious commodity.

Meet Your Board Member—Ron Poe

Ron is a Highway Environmental Program Manager in Nebraska Department of Roads's Environmental Section. He received a Bachelor of Landscape Architecture from Iowa State University in May 1993.

Ron manages the Roadside Stabilization Unit. Some of the Unit's responsibilities include erosion and sediment control design, specifications, and seed mixtures for construction and maintenance projects. The Unit also manages the environmental compliance on construction sites and two water quality permits; the construction stormwater permit and NDOR's Municiple Separate Storm Sewer System (MS4) permit.

Ron has been involved in erosion and sediment control design with NDOR since he was hired in October 1998. In November 2004, he achieved the Certified Professional of Erosion and Sediment Control (CPESC) Certification. In October 2008, Ron completed the licensure process and is now licensed as a Landscape Architect in the state of Nebraska.

Over the past two years, Ron has been developing and implementing erosion and sediment control training classes. Through these classes, NDOR has trained nearly 1500 individuals ranging from NDOR employees, contractors, consultants and city/county employees. The classes have been challenging, but very rewarding seeing stormwater training being offered throughout the state.

Ron is married to his wife, Mary, and has three kids; Branden, age 21, Marissa, age 17, and Jeralyn, age 12. Ron enjoys hunting, fishing, hiking, biking; essentially anything outdoors. Most weekends he spends peddling along the many miles of bike trails in Lincoln.

The Sediments Stops Here

"What the Floc?" Part II: Cationic Vs. Anionic?"

By J.B. Dixon

If you've been familiarizing yourself at all over the past year or so to the concept of flocculation of sediment-laden stormwater, you've probably heard the arguments made regarding the toxicity of one product over another. Typically the root of these arguments stem from the difference between cationic and anionic polymers. Forgive me, as I was never a gifted chemistry student, but here's a quick summary of the difference. An **anion** is an ion with more electrons than protons, giving it a net negative charge (since electrons are negatively charged and protons are positively charged). Conversely, a **cation** from the Greek word κατά (*kata*), meaning "down", is an ion with more protons than electrons.

Cationic compounds, such as chitosan polymers, can be more biologically active, and this seems to be the point that the Polyacrylamide (PAM) camp seem to use as their main differentiation between "Us versus Them". The contention is that cationic compounds are dangerous to aquatic life, and their positively charge can link them to negative-charged fish gills, leading to suffocation. However, the charge is neutral as soon as the polymer is introduced to sediment-laden stormwater, as it forms an instant bond to the negatively charged soil particle, as it is supposed to. The newly flocculated particle is now harmless to aquatic life, settling down & out of suspension, and in time breaking down completely to carbon dioxide and water. This is also the case for anionic PAMs.

Is the toxicity threat real with any of these products, natural or man-made? Or is this simply fabricated and manufactured fear-mongering for the sake of potential sales? EPA had some telling remarks in their first proposed Effluent Limitation Guidelines submittal, posted in the Federal Register on November 28, 2008.

"It has been suggested that, while operating active treatment systems (ATS) that use polymers to reduce the turbidity of stormwater, construction site dischargers may overuse polymers and, in doing so, introduce toxicity or cause other adverse effects. EPA believes toxic effects from discharges treated to meet a turbidity limit should not be occurring and such events would be indicative of a poorly operated treatment system. Polymers are widely used at a variety of wastewater treatment systems and facilities throughout the country, and EPA is not aware of any studies indicating that polymer addition to treat stormwater from construction sites using ATS has been found to pose a significant risk to water quality at those facilities……In addition, vendors have indicated that dosages of polymers are carefully metered in ATS systems. Upon closer review of the matter, it appears that this concern has been raised due to anecdotal suggestions, rather than documented evidence of actual discharge events causing toxic effects. To date, EPA has not identified any documented cases where the use of a polymer to treat C&D stormwater discharges caused an adverse effect in the receiving waters."

So, have the toxicity claims of PAMs Vs. Chitosan been justified? It would seem that both have the same arguments for & against each other. It tells me that as an end-user, you have to be intimately aware of the risks associated with using any polymer above & beyond the manufacturers recommended dosages and applications. Introduction and rate control of any polymer used on a passive treatment system (PTS) should have very careful scrutiny. Active Treatment Systems (ATS), by their nature, do have some built-in control advantages over PTS. In the end, it all comes down to proper education of the end-user on the proper usage

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of these best management practices.

It is important through all of these discussions of new "buzz words" like 280 NTUs, Effluent Limitation Guidelines, ATS, PTS, etc., that we not lose sight of the larger, more controllable, and more important goal of the new construction stormwater standards: Make sure your structural BMP's are designed, installed and maintained properly, the way they've supposed to have been since NPDES Phase I. When the proposed numeric limit for turbidity for large construction sites was proposed to be 13 NTUs Nationwide, the issue of flocculation was believed to be an inevetibility on all construction sites. With the numeric standard officially changed to 280 NTUs, compliance on large sites doesn't necessarily have to fall to the reliance on elaborate, expensive active treatment systems.

There's no question that flocculation as part of an overall SWPPP strategy can be highly effective in meeting compliance. If operators can get back to basics and ensure that a quality SWPPP is prepared and executed effectively, the arguments between cationic vs. anionic seem to add up to a neutral charge in the end.

SAVE THE DATE
GREAT RIVERS CHAPTER
ANNUAL FALL CONFERENCE
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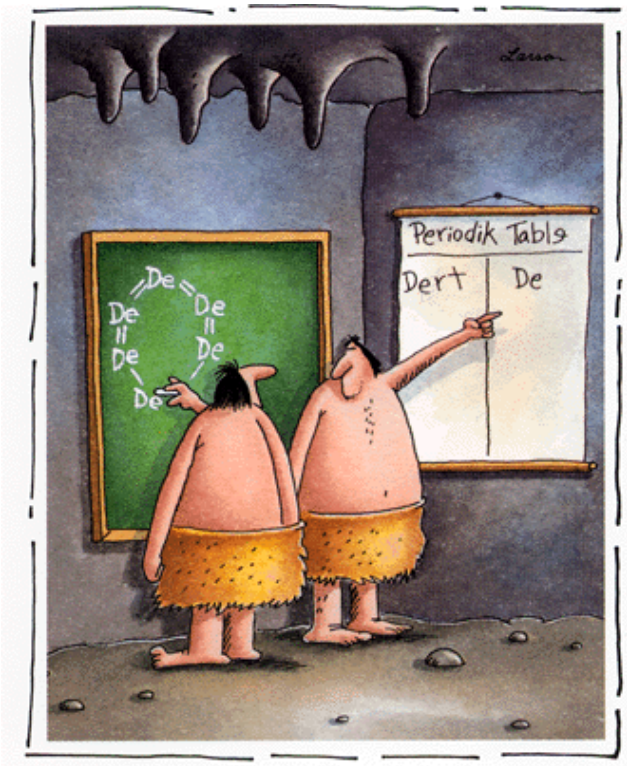

Dubuque, Iowa: Leading the Way with LID

The oldest city west of the Mississippi River may also be one of the most modern when it comes to watershed-based planning, sustainability and strategic growth management. On February 24, Great Rivers IECA co-sponsored the third Annual "Put a LID on It" workshop, where erosion control, stormwater management and community-based sustainability efforts were key topics. The event was hosted by the Dubuque Soil and Water Conservation District and the City of Dubuque. Speakers ranged from local, state and federal regulators to technical resources and prairie proponents. Flanked by numerous vendors, more than 100 attendees spent the day re-connecting with local and regional resources as a way to gear up for the spring construction season.

An afternoon presentation featured several of the City's planning staff. They highlighted a new City policy that consolidates land use and development codes under one "Unified Development Code." What makes this unique is that the proposal received strong support from both City staff and citizens alike. The result is what may be one of the most comprehensive, conservation-based city codes in Iowa, if not the Midwest region.

On November 20, 2009, the City of Dubuque's new Unified Development Code (UDC) went into effect. It is available in its entirety at: http://www.cityofdubuque.org/index.aspx?NID=1209. The goal was to update and consolidate zoning, subdivision, site development, historic preservation, and sign regulations into a single city code. An illustrated version of the UDC will incorporate text, photographs, charts and diagrams for ease of use. This online version is anticipated in March, 2010. The UDC takes effect just as a county-wide stormwater ordinance is also being developed as a way to address development concerns outside the city limits and within diverse, environmentally sensitive terrain.

"I believe that we have created one of the most sustainable land development codes in Iowa," said Laura Carstens, planning services manager for the City of Dubuque since 1989. "Sustainable design is the expectation. While traditional development is still allowed, it is now the exception."
Subdivision and site development regulations have been extensively revised within the UDC to promote sustainable measures, such as conservation subdivision design, solar access, and low-impact development. Access for pedestrians, bicycles, and public transit has been added. The link to the City's design guidelines can be found here: http://www.cityofdubuque.org/index.aspx?NID=1295.

"These qualities of the UDC will guide the physical, economic and social development, redevelopment and conservation of the community," said Carstens. "They also will protect and enhance the historic, cultural and aesthetic resources that make Dubuque a unique, identifiable and vital community."

In 2008, Dubuque was selected by the American Institute for Architects to undergo their Sustainable Design Assessment Team (SDAT) process. According to Carstens, this event was part of the impetus for incorporating sustainable design into the UDC. A link to the Dubuque SDAT information is available here: http://www.cityofdubuque.org/index.aspx?NID=611

Sections of the UDC reference the City's stormwater regulations, and weekly meetings keep internal stakeholders abreast of activities related to the UDC and potential impacts on key City departments.

Initial feedback from stakeholders, for the most part, has been limited to parkland dedication and conservation subdivision concerns – with the cost of LID versus tradition design being in question. However, the City has been quick to respond and cite local and national resources that corroborate the conclusion that sustainable design is becoming more mainstream, as well as more economically viable, than traditional design and construction. With such a focus on comprehensive, conservation-based approaches to growth and city vitality across departments, Dubuque is positioning itself as one of the prominent "green" cities in the Midwest.

Great Rivers—IECA
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