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Upcoming Meetings:

- **Wed, June 24th**
- **Thurs., July 16th—Golf Tournament at Oak Marsh Golf Course in Oakdale, MN**
- **Wed., August 12th—Post Banquet**

Frequently Used Links:

- National website at www.same.org
- Post website at www.same-msp.org
- Listing of [Post Leaders](#)
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**Next Meeting Presentation
Wednesday, May 27th, 2015**

**A perfect storm --
MN Minimal Impact Design Standards, Low Impact Development, and
1.0 PDH.**

Anne Gelbmann
MN Pollution Control Agency

1-PDH

Presentation Synopsis:

During this technical presentation, Anne will give an overview of what MN Minimal Impact Design Standards (MIDS) are and how they integrate with Low Impact Development (LID). We will learn about the development of MIDS and how to access the MIDS Calculator and technical information on LID best management practices that are found in the new MN Stormwater Manual. Anne will also discuss which communities in Minnesota have adopted the MIDS performance goals.

Speaker Bio:

Anne Gelbmann is the green infrastructure coordinator at the MN Pollution Control Agency. She works with communities to encourage low impact development practices. Anne was the project manager for the Minimal Impact Design Standards (MIDS) project.

Meeting Location:

Fort Snelling Officer's Club at 395 Minnesota 5, St Paul, MN 55111. See map at http://www.same-msp.org/_images/934thOfficersClub.jpg

Agenda:

Joint Meeting with ASFPM. Social time and lunch (if you so desire) will be from 11:30 AM to 12:30 PM in the dining room of the Officers Club. Post Meeting and Presentation will be from 12:30 PM to about 2:00 PM in the ballroom of the Officers Club.

The Club's cafeteria-style lunches are typically \$10.00 or less; people who partake in the cafeteria-style lunch will pay the Officers Club directly. If you come only for the presentations, there is no charge. Please RSVP with your intent to either partake in the cafeteria-style lunch or to come for the presentation only; this will help the Officers Club staff to ensure that an adequate amount of food is prepared. Either leave a message with Michelle Larson at **651-290-5632**, click the RSVP button in the left-hand column of page 1, or send an email to Michelle.J.Larson@usace.army.mil

Next Month's Meeting—Wednesday, June 24th, 2015

Are you wild about wild rice?
Come learn what the MPCA is doing to help protect the state grain.

Ed Swain
Minnesota Pollution Control Agency

Highlights of the Previous Meeting



The speakers for April's SAME Monthly meeting were Bethany Kelly and Ivan Contreras from Barr Engineering. Seepage from dams and reservoirs can cause problems such as piping and catastrophic failure. It is important to understand the root of seepage problem, or costly repairs may be prescribed that don't get to the root of the leakage problem. Bethany and Ivan described several detection techniques including both natural and artificial tracers.

Bethany presented a case study for a hydro electric dam in Michigan where the source of seepage and boils appearing 700-1000 feet downstream of the dam. There were several relief wells and a flow piezometer that were used to collect water samples. Field and laboratory testing were combined with dive inspections to analyze the site. Isotopes were the most valuable tracer at this site.

Winter temperature samples of the water emerging from the wells and piezometers helped to narrow the scope on where the water was originating. Bethany described the analysis of deuterium (a stable isotope of hydrogen) and oxygen 18, where the Natural Water's Global Meteoric Water line was plotted along with the isotope data from the various water samples. Bethany described how the oxygen 16 evaporates from the water held in a reservoir, and leaves more oxygen 18.

Ivan focused his portion of the presentation on a dam in Venezuela, constructed in the 1980, and even during its construction, experienced seepage at its left abutment, where a fault was located. Several features such as installation of a clay blanket on the upstream side of the left abutment, construction of a grout curtain and installation of a drainage gallery with drain holes downstream of the grout curtain were incorporated into its construction to minimize the seepage. Still, seepage was seen downstream of the dam. A 6 Million dollar repair was undertaken and injected grout at the west abutment, which did not stop seepage. The costly repair followed with an investigation of the seepage source. Isotopes were used to identify the elevation of the seepage source (w/in a 25' foot vertical band) and dye testing helped to determine the pathway of the seepage. Knowing where seepage originated helped determine that the deficit was in the construction of the cutoff and helped to direct funding to the installation of collection drains that would intercept the seepage within the dam's gallery.

Beth and Ivan provided the SAME post with some great technical information that helps the group's understanding about what dam seepage investigations entail and the importance of really understanding the sources of seepage for a successful repair.

Explore Engineering Event

On April 9th, the Minneapolis-Saint Paul Post of SAME held the second annual Explore Engineering event at Willow Lane Elementary in White Bear Lake, MN. At the event, approximately 150 students participated in several hands-on activities and saw demonstrations from local student robotics clubs. This year, the STEM topics covered through the hands-on activities included the principals of friction, sound, magnetism, polymers, floodplain management, electricity, flight, geology, ecosystem restoration and robotics.

Several members from our student SAME chapter at the University of St. Thomas volunteered at the event and prepared activities for two of the stations. We also partnered with several local organizations including the Society

of Women Engineers, the Association of Floodplain Managers, the Visiting Wizards from 3M, US Army Corps of Engineers, the U of MN Biology Department, and a retired school teacher. The robotics teams from the White Bear Lake High School and Sunrise Middle School also provided demonstrations. Members of the PTO assisted with planning the event and leading activities.

Willow Lane Elementary is a past recipient of an SAME educational grant provided by the M-SP Post. The Post plans to make this an annual event hosted by another SAME educational grant recipient as a way to build longer term, STEM-promoting relationships with the grant recipient schools.

Thank you to those who volunteered to make this event possible!



Save the Date!

Mark your calendars
for the SAME Golf
Tournament on
**Thursday, July
16th, 2015**
at Oak Marsh Golf
Course in Oakdale,
MN!

More details to
come!



Small Business Corner

Many SAME members attended the annual SADBOC Conference April 30th. Highlights included:

- Great and detailed overview of "Selling to the Government" by John Kilian of PTAC – track down his slides if you can. There is always something new or something that you didn't know.
- Catching up with old and new companies and government agencies at the booths – the room was full of great and helpful people to talk with. The trend for small business is to get onto larger business's "list", sign up on line.
- Matchmaking event – opportunity to have 15 minutes to talk with a buyer (government agency or large business). Small businesses needed to sign up ahead of time and matches were based on your SIC code (use as many as you have to get more matches). This is their second year and a good opportunity to talk about opportunities within that business and find out who to talk to for your business. Try it next year if you haven't yet, large and small business.
- Annette Theroux, from Pro-West & Associates, a GIS company from northern MN and Small Business Administration Subcontractor of the Year for 2013, provided great insights about being a successful small business working for the federal government at the "Successful Contractors Panel: Learn What's Working to get Government Business". We've invited her to visit us at our SAME meetings in the future!

2014 Educational Grant Recipient—Edgewood Middle School

In 2014 we awarded \$1,200 for the school to purchase materials and equipment to be used for the National Engineers Week in 2015. Here is a report of their 2015 Engineering Week Activities.



As part of our 6th grade Engineering STEAM project, students learned about bike helmets and how they work. They were then challenged to design and create a helmet for an egg. Students had a variety of materials available to build their helmets, including different types of foam and padding, plastic, rubber bands, and colored duct tape. Before students tested their helmets with real eggs they had Jell-o filled plastic eggs to use as test dummies to evaluate their designs before final testing. As a conclusion to the project students created posters showing their design, reflecting on their results, and identifying how their work connected with steps of an engineering design cycle.

In 7th grade we did two different engineering projects. During the first part of the week we touched on our standards in natural selection. We focused on form and function. Our students learned about homologous and analogous structures. The engineering activity our students participated in was creating a robotic arm that could pick up a plastic cup and if designed well other objects. Our second engineering project was having our kids design a boat that could propel itself across a pool of water. They had to use their previous knowledge of buoyancy and the mechanics of how an axel worked. Both projects were a lot of fun for our students.

For the 8th grade engineering week project, we combined our astronomy unit with the engineering of rocket design! Students researched, designed, created, modified, and tested model rockets over the course of engineering week. Some students had built rocket kits in 6th grade, but what separated this experience was the design process. Students were able to design fin shape, number, size, and fuselage length. Each group had a unique design, and were able to test their product against their peers.

After engineering week, the students reflected on the experience. Every single student reported that it was a positive experience, and that they wish they could do it again.

