ASCE WISCONSIN SECTION NORTHWEST BRANCH

Newsletter No. 129
July 11, 2016

President's Message

Dear ASCE Northwest Branch Members:

As we head into the dog days of summer, our geographic location dictates this to be the busiest time of the year for folks in our profession. Make hay while the sun is shining, so to speak. Roads, buildings, dams, and all other types of infrastructure are being designed and constructed all in the hands of capable civil engineers. My particular job requires that I travel often which allows me to see much of what's going on around the state and throughout the Midwest in terms of new infrastructure projects. Passing by these monuments of engineering engenders a tremendous amount of pride in what we do as professionals. I often think how lucky are those of us that contribute in the design, building, and maintaining of these awesome projects. We all work long hours, deal with difficult projects (and sometimes difficult people), may be away our families, and withstand other issues that most others outside the profession wouldn't expect. Despite this, most of us couldn't possibly imagine getting drug out of bed an 4:00am day after day for any other reason!

I think back on the people that have been most influential in my life and amongst them the most prominent common denominator are engineers. Surrounding ourselves with others who share the same passion and drive is incredibly powerful. I often feel that ASCE provides that opportunity. It's very rare that outside of our day to day work schedules we can interact with so many like-minded individuals. Through this organization we have the opportunity to expand horizons by interacting with other members. This is by far and away the most beneficial part of our membership. ASCE is one of oldest and most prominent professional associations in the country. The group pulls a lot weight in terms state and federal spending agendas simply because of those who comprise our membership base. ASCE members are the core of this country's infrastructure foundation so please don't miss out on leveraging your membership when networking events are available! The Northwest Branch gets together several times per year through socials, site visits, conferences, and other meetings.

Lastly, as I mentioned in the previous newsletter, I'm a huge proponent of mentorship opportunities and the great impact we can all have on the youth with whom we interact through the engineering profession. I implore each of you to take the time to impart the knowledge that you've acquired throughout your formal education and career and work to change the life of a young learner. As always, our board is more than willing and well equipped to assist in any way; all it takes is a small part your time. Please take the time and contact one of us if you have availability.

Wishing you a safe and productive summer!

Sincerely,

Mike Binsfeld
Northwest Branch President
mikebinsfeld@jfbrennan.com

UPCOMING EVENTS

Check your emails from the Northwest Branch for all upcoming conferences, construction site visits, socials, outreach programs, and volunteer opportunities. The board is working diligently on lining up a great season of ASCE events!

La Crosse Loggers Game

WHO: *All ASCE members and family are welcome*

WHEN: *Monday August 8th 2016 & 7:05 PM*

WHERE: *Copeland Park – La Crosse*

WHY: *To meet and interact with fellow ASCE members while enjoying a great game!*

For more information on the event please visit here: The La Crosse Loggers Website

PAST EVENTS

Eau Galle Dam Tour and Family Day

Over a dozen Northwest Branch members and their families gathered for an educational and fun-filled day and enjoyment of the beautiful weather on Saturday, June 25th. The day started with a great tour out on the dam by a park ranger. The group walked out to the center of the dam and learned of its history and construction. The park ranger was a little nervous when he found out he had a group of engineers to show around, for fear of being stumped on a question! Never to fear, board member Andy Walters replied that it was a Saturday and the engineers were taking the day off from being too technical. The group learned that Spring Valley, the town protected by the dam, had the choice to either have the dam constructed or move the entire town on top of the hill. There were rumors that the new town would have been designed by

Frank Lloyd Wright. You can read more about the dam and the US Army Corps of Engineers park here: http://www.mvp.usace.army.mil/Portals/57/docs/Recreation/brochures/2015%20brochures/150408-A-FW121-002.pdf?ver=2015-04-09-124542-737

We had two Northwest Branch members join us who were experts in water control and dams, so it was educational and advantageous to hear them enhance the park ranger's tour with their experiences and comments about the uniqueness and importance of the Eau Galle Dam.

At the end of the tour, some members walked down the hundreds of stairs to the dam's morning glory. After the tour, we all enjoyed sandwiches and snacks while trying not to talk about work too much. It was great to see everyone's kids playing together and having fun. After lunch, about half of the group went to the swimming beach to enjoy the sand, water and sun. All in all it was a fantastic day!

The Northwest Branch hopes to host more family-type tours and fun days in the future since this event was such a success.

Beach Time at the Eau Galle Reservoir!

Destination Imagination – Creativity Expo 2016

On April 16, 2016, Dan Borchardt from MSA Professional Services and Andy Walters from American Engineering Testing provided a hands-on exhibit at the 2016 Destination Imagination Creativity Expo held at UW-Stevens Point. The exhibit was sponsored by ASCE (Northwest Branch). Over 1,000 students plus family members were in attendance for the event.

ASCE challenged students to build the tallest paper skyscraper capable of holding a golf ball with limited supplies and not attaching it to nearby objects (or people!). In the afternoon, along with some help from Dan's wife, Theresa, we provided an educational treat in the form of asphalt cookies. We educated attendees on the materials and mixing properties of asphalt pavement, you know, with your typical ground Oreo, Reese's Pieces, Graham Cracker, Oatmeal, and melted Chocolate Chip ingredients!

DESTINATION IMAGINATION WISCONSIN Creativity Expo 2016

Northwest Wisconsin Civil Engineering Highlight:

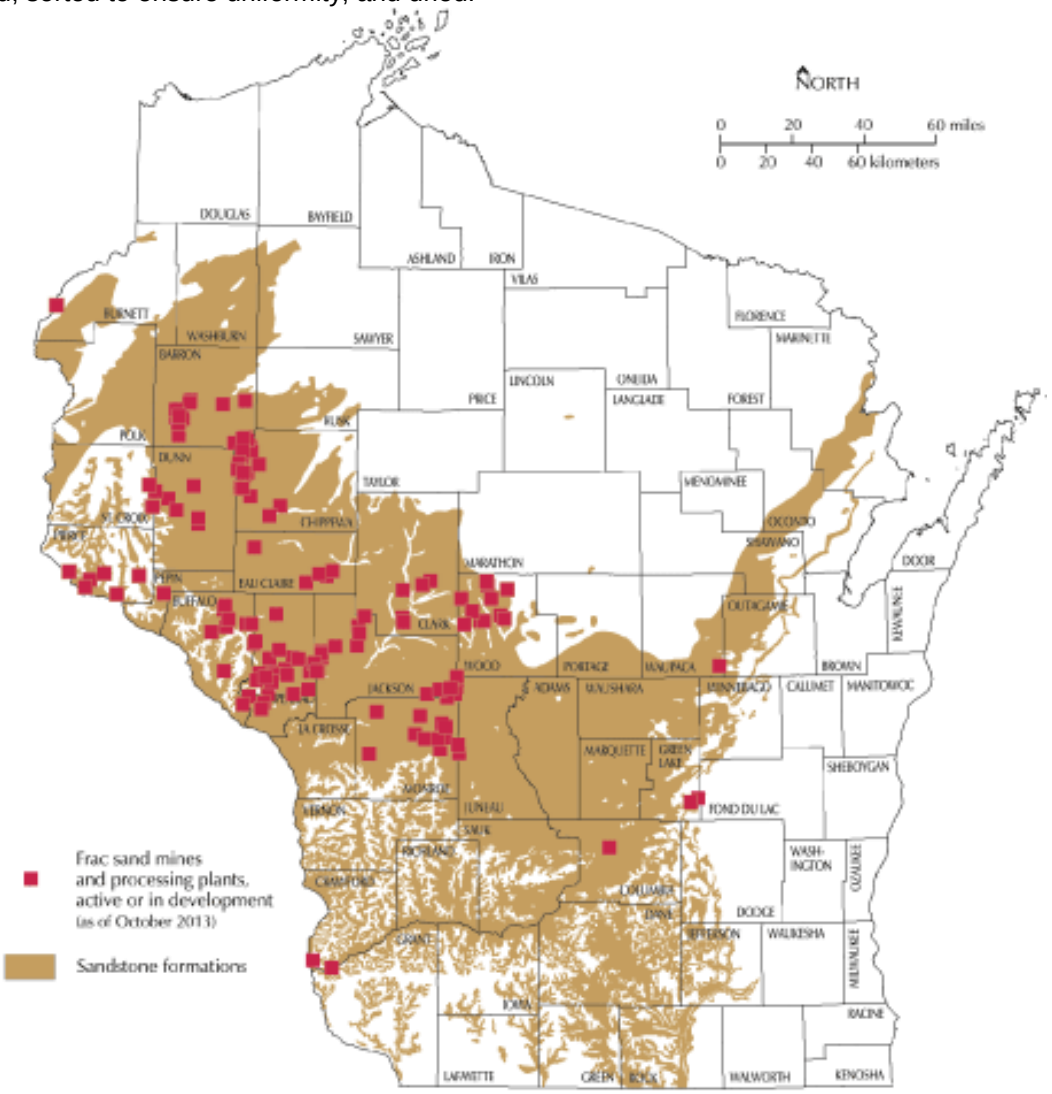
Sand Mining

Sand mining has existed throughout the midwest for many years. That is up until recently, when advances in hydraulic fracturing to obtain oil found deep within the earth has the mining industry exploded. The number of mines now crosses into the thousands and the demand for the material has driven prices sky high in the earlier part this decade. Even more recently through the oversupply of oil to worldwide markets along with continued production of crude has the demand of this material waned. At some point in the near future, the supply and demand will become less eratic and a somewhat reduced number of sand mines

across the midwest will continue to produce the highly sought after material only available in our part of the country. The sand mining industry is undoubtedly controversial for many reasons, but through advances in our profession, those that operate the mines and those that may be affected by its operation can coexist. Have said that, a little bit of history on the subject:

Wisconsin's sandstones, especially the Cambrian- and Ordovician-age formations, are prized for their uniform grain size and high silica content. These formations are excellent sources of the raw material needed for many industrial products and processes, including hydraulic fracturing (fracking) for petroleum recovery. Wisconsin has abundant resources of sand that have been mined for more than 100 years. Our sand is used for glass manufacturing, foundry molds, even golf course traps. It has been mined for the petroleum industry for many years. Recent advances in extracting oil and gas using a process called "fracking" (short for hydraulic fracturing) have greatly increased the demand for Wisconsin's sand.

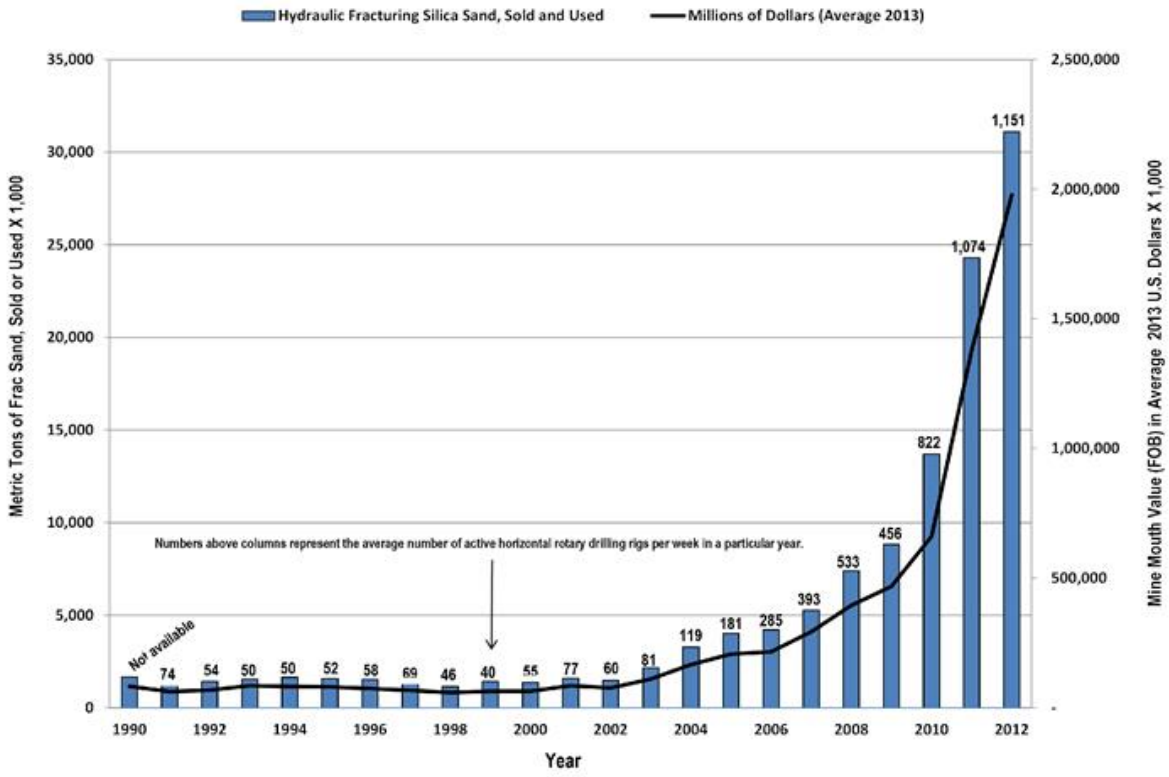
Frac sand is quartz sand of a specific grain size and shape that is suspended in fluid and injected into oil and gas wells under very high pressure. The fluid pressure opens and enlarges fractures as well as creates new ones. Sand grains are carried into these fractures and prop them open after the fluid is pumped out. The type of sand used in this process must be nearly pure quartz, very well rounded, extremely hard, and of uniform size. Before shipment, frac sand is washed, sorted to ensure uniformity, and dried.



Wisconsin has some of the best frac sand in the country because several of our geologic formations meet these specifications and are found near the surface. Frac sand is currently being mined from sandstone formations in much of western and central Wisconsin. The same formations are less well exposed and generally more fine-grained in the

eastern and southern parts of the state. Sand from younger glacial deposits as well as most beach and riverbank sand is too impure and too angular to be used as frac sand. Fracking has been used by our domestic oil and gas industry for the past 75 years. Recently, the development of new horizontal drilling technology using hydraulic fracturing has made possible production of previously unrecoverable natural gas resources in the eastern, western, and southwestern United States.

In Wisconsin, a different kind of fracking is used to increase the productivity of water supply wells in relatively impermeable rocks, such as the granite in the central part of the state. In these cases, only pressurized water is injected into the well—no sand is added.
The economic growth in activity impacted the economy in direct ways, such as increased capital investments (from both the United States and other countries), royalty and lease payments, and government revenues in the form of fees and taxes. The increased supply of natural gas and oil also affected electricity prices, manufacturing, service industries and employment. In many places, fracking has increased employment in the mining (oil and gas) sector and supporting industries, such as the restaurant and housing sectors. Consumers and manufacturers also benefitted from lower oil and natural gas prices, and demand increased for pipeline, drilling and other ancillary equipment. If, however, demand for natural gas and oil grew, prices would be expected to rise.



A study on WISA's website of Wood County estimated that construction of new facilities could have generated $33.3 million in earnings for the county within the first year of construction. Within three years frac sand mining could have generated $42.8 million for the county. Offers as high as $10,000 per acre for land with frac sand deposits have been reported by Wisconsin residents. Additionally, frac sand can sell for as much as $200 a ton.

According to the President of the Wisconsin Industrial Sand Association, the industry has created 2,000 jobs in the state. According to the Wisconsin Economic Development Corporation, the average frac sand processing facilities creates 50-80 jobs, while the average mine creates 10 jobs. Entry level positions pay $13.50 an hour, while positions requiring skills, such as welding, pay $20.00 per hour.

Because of the sudden and unprecedented growth in fracking across the United States, getting high-quality, unbiased, state-specific information on the environmental impacts of fracking in 2014 was difficult. Most studies that fit those first two qualifications were government studies that focused on the nation as a whole. As such, much of the information that follows in this section may only have applied generally to the state. State-specific information was added where possible. As with any type of energy extraction, there are several areas of risk when it comes to air quality. In the case of fracking, these risks include air pollutants such as volatile organic compounds (VOCs) and

methane. Some environmental groups raised concerns that methane could leak during the extraction process, resulting in unnecessary pollution. Most of this pollution would occur during the well completion phase. Fracking operations could also emit known carcinogens, which have been linked with increased rates of cancer.

Sources:
Wisconsin Geological & Natural History Survey. (https://wgnhs.uwex.edu/wisconsin-geology). July 2016.

Renew your ASCE Membership for 2016!

Please check to make sure your ASCE membership hasn't been put on the back burner. Hopefully this list has provided more than one memory of how ASCE membership has provided value to your engineering career and personal life. Please feel free to share your experience with a co-worker or friend. Online, in person, and wherever your membership takes you, ASCE benefits every Civil Engineer. See the ways you benefit from your ASCE membership at asce.org/101.

Keep your benefits and renew today!

And remember not only what ASCE provides for you…

- *Professional Development = Northwest Branch directors will be organizing meetings that help us explore the variety of influence civil engineers have while the Section Annual Meeting and Spring Technical Conference provide additional learning environments*
- *Networking = meetings and conferences bring together knowledgeable engineers that could provide assistance to your next civil engineering hurdle*
- *Personal savings = discount car insurance, rental car savings for the next family vacation, bank resources*
- *Good Citizenship = ASCE can provide the environment to teach others ways to make this country stronger through improvements to our environment*

…but how you can leverage your education and engineering experience to change the life of a potential aspiring engineer through ASCE outreach and STEM education opportunities?

UPDATE ASCE ONLINE PROFILE REGULARLY

Please update your ASCE online profile with current E-mail and mailing addresses to guarantee you receive ASCE newsletters and important information. As a reminder, those of you that have passed your PE exam, make sure to change your account with ASCE National. To update your ASCE profile, go to www.asce.org or call (800) 548-272.

2016 Calendar of Events

The calendar is simply a guide and may change throughout the year

July 2016:
- Northwest Branch Board Meeting

August:
- Northwest Branch Board Meeting
- August 7th – LaCrosse Loggers Game – Copeland Park La Crosse
- August 12th and 13th – Region 3 Assembly
- Possible St. Croix Bridge or Dresbach Bridge River Crossings Tour

September:
- Northwest Branch Board Meeting

October:
- Northwest Branch Board Meeting

November:
- Northwest Branch Board Meeting
- STEM - Creativity Expo – Check Upcoming Newsletter for Event Location and time

CURRENT NORTHWEST BRANCH OFFICERS

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