ASCE Illinois Section

News

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A New Perspective on Estimating Design Time in Iowa

By Jim Nelson, P.E. and Emery Waterhouse

Preconstruction services and the estimation of design time costs are of increasing importance in an era of tight budgets and aggressive project delivery schedules. Traditionally, methodologies for estimating design time have been based on a percentage of bridge construction costs or a detailed scope of work budget. The first method tends to be a crude approximation as it is an estimate based upon an estimate, while the second method can be very time consuming. It was for this reason that the Iowa DOT sought to develop an alternative methodology for estimating preconstruction services that was efficient, accurate and data driven.

The Iowa DOT sought to develop an alternative methodology for estimating preconstruction services

A DATA DRIVEN APPROACH

The Iowa DOT has consistently collected a significant amount of project data for various business purposes. In recent years, an innovative concept of making use of this data has been developed. The concept was to employ regression analysis to obtain design time estimates, but using regression analysis meant collecting two distinct types of data: the time it takes to complete a design, and the individual characteristics specific to that design.

Historical design time information was obtained by reviewing personnel timesheet data. At the Iowa DOT, time spent on a project is categorized by a design number which has been uniquely assigned to every structure designed by the state. Time is further classified by function codes which indicate the type of work being undertaken. This allows individual tracking of the design time (continued on page 7)

President's Notes

Thera Baldauf, P.E.

The Illinois Section is off to a great start for 2016! The Section was honored to have the Multi-Regional Leadership Conference in Chicago this past January. This event had Section and Branch representatives hailing from all 3, 6, and 7 Regions as well as ASCE President Woodson and ASCE President-Elect Mattei in attendance! A huge shout out to the Illinois Section Younger Member Group who hosted the CRYMC Awards Reception on Friday, January 15. A special thanks goes out to Monica Crinion and Jacob Thede and their YMG planning team. They did an amazing job hosting and coordinating the event and National staff has expressed their sincere appreciation for their efforts!

I would be remiss not to include a plug for the Illinois Section Anniversary Centennial. The Section hosted a Winterfest Networking event this past January 28 at Kings Lanes in Rosemont. New faces and some friendly competitive bowling made for a fun night. Big thanks goes out to Past President Patrick Lach for helping organize this great event.

The Illinois Section is now preparing for its next Centennial Event, the President-Elect Student Scholarship dinner to be held on April 19 at Maggiano's with keynote speaker ASCE President-Elect Dr. Norma Jean Mattei. This year we will close the event with an Order of the Engineer Ceremony for engineering professionals. Stay tuned for other upcoming Centennial events coming this summer!

Haven't gotten your Illinois Section Centennial Anniversary label pin? Free anniversary pins will be available to Section Members at all Section sponsored centennial events. Grab yours soon!

Interested in becoming a Centennial Sponsor? With a one-time donation of $3,000 you receive top billings at all four Illinois Section Centennial events. As a Centennial Sponsor, your company name will be displayed throughout the 2016 year on the Illinois Section Centennial Webpage at http://www.isasce.org/centennial-anniversary/. If you are interested in becoming a Centennial Sponsor, please go to https://www.123signup.com/register?id=pnhvq. Please feel free to reach out to me with any questions regarding the Centennial Sponsorship.

I hope everyone had an opportunity to Celebrate Engineers Week this past February 22 – 26. If not, the Illinois Section will be participating in several more student outreach activities and we are always looking for more volunteers. On March 6, 2016 the Section will be participating in the Girl Scouts STEMapalooze at the Friendship Center in County Club Hills. On March 14, the Section (continued on page 16)

ASCE Illinois Section
News

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SE Licensure and Partial Practice Laws: Effects on the Geotechnical Profession

By Richard J. Finno, M. ASCE, P.E., PhD, DGE

Over the past several years, a Geoinstitute (GI) task force was charged to work with a similar group from the Structural Engineering Institute (SEI) to address the concerns of the GI regarding the Structural Engineering Licensing Coalition's (SELC) efforts to have states require structural engineering licensure based in part on a 16 hour examination for anyone who provides structural engineering services for designated structures. SELC is comprised of the SEI, the National Council of Structural Engineers Association, the Structural Engineering Certification Board, and the Council of American Structural Engineers. SELC recommends that each licensing board adopt rules to define appropriate thresholds for the designated structures, but does not provide guidance for what constitutes a designated structure. Their reasoning behind this strategy is to allow each jurisdiction latitude to address the problems that locally arise. For example, California has a clear need to address earthquake hazards in a way that, say Minnesota, does not.

This effort by the SELC is not inconsistent with the goals of ASCE to "raise the bar" for all civil engineers. However, the obvious question is what constitutes a designated structure within each jurisdiction? What happens when a shallow or deep foundation or an earth retention system is part of a designated structure? By not providing a model which can be endorsed by both the SEI and GI, uncertainty exists regarding how geotechnical engineering design would be included within a designated structure if the SELC effort is successful. How large can this impact be on the geotechnical engineering profession? The SELC estimates that about 10% of structures would become a "designated structure" if such a law is enacted in a state.

Will SE licensure and SELC's push for partial practice laws affect geotechnical engineers?

A handful of states already have such laws in place. Furthermore, there are two kinds of laws, full and partial practice laws. Full practice laws requires that all structures be designed by a licensed structural engineer (S.E.). Partial practice laws require that only designated structures be designed by a licensed S.E. There are two states with full practice laws, Illinois and Hawaii. As many readers know, the SE law in Illinois was promulgated in 1915 and predates the PE licensure requirements in Illinois. The current efforts of the SELC are focused solely on partial practice laws. States with such laws include California, Nevada, Utah and Washington.

There are considerable differences and specificity in what constitutes a designated structure in each state. For example, Washington requires an S.E. license for hazardous facilities, special occupancy structures, essential facilities over 5,000 sq ft in ground area or 20 ft in height, structures with irregular features, and buildings over 5 stories or 100 ft in height, bridges with spans over 200 ft, piers with surface area greater than 10,000 sq ft and structures where 300 people or more congregate. In contrast, Utah requires an S.E. license for buildings and other structures representing a substantial hazard to human life, essential facilities, and buildings requiring special consideration. In states with partial practice laws, a P.E. license is sufficient for responsible charge when a structure is not designated. (continued on page 9)

Thornton Composite Reservoir

By Jerome F. McGovern, P.E.

In the fall of 2015, the Metropolitan Water Reclamation District of Greater Chicago (MWRD), commissioned the operation of the Thornton Composite Reservoir in south suburban Thornton, Illinois. The reservoir, with a capacity of 7.9 billion gallons of water, was the final element of the Calumet portion of the Tunnel and Reservoir Plan (TARP) which serves the combined sewered areas of the south suburbs of Cook County and the City of Chicago south of 87th Street.

Conceived in the 1960's by Clint Keifer of the City of Chicago and Frank Dalton of the MWRD, TARP was the answer in how to deal with overflows from combined sewers into local waterways during periods of heavy rainfall. Chicago and the inner ring of suburbs were

Thornton Composite Reservoir goes online.

developed on a combined sewer system that consists of one pipe under the street that collects sewage from homes and businesses and precipitation runoff from pavements. On a dry day, the sewage is conveyed to a wastewater treatment plant, passes through the treatment plant and the effluent is released to a waterway. On a rainy day the capacity of the combined sewer may be exceeded and the collection system was designed to overflow into an adjacent waterway. The water quality of

Thornton Composite Reservoir looking east, Interstate 80 is the southern boundary of the reservoir.

the Chicago River, the Des Plaines River, the Little Calumet River and other waterways were severely degraded by the routine discharge of the storm water and raw sewage. During heavy storms residential basements could be flooded with combined sewage. Occasionally, a very severe storm would require the opening of sluice gates to allow the polluted water in the North Shore Channel or the Chicago River to flow into Lake Michigan to reduce flooding. TARP would provide a deep rock tunnel 200 to 300 feet below grade where sewage from combined sewer overflows would be diverted and stored during a precipitation event. Later, after the precipitation had ended, the tunnels would be dewatered, routed through a wastewater treatment plant and discharged as treated effluent to a waterway. To provide additional capacity during back to back precipitation events or extremely large precipitation events the tunnels would be connected to a reservoir.

TARP nears completion after forty years of construction.

In 1972 the MWRD committed itself to the planning, design and construction of TARP. Now after more than forty years of work, the completion of the entire TARP system as planned is within sight. TARP is not one large tunnel but three discrete systems: Upper Des Plaines, Mainstream/Des Plaines and Calumet. Upper Des Plaines serves the northwest suburbs of Arlington Heights, Des Plaines and Mount Prospect. A small reservoir is located near the intersection of Elmhurst Road and Interstate 90. Mainstream (continued on page 10)

The Importance of Student Outreach

By Kris Salvatera and Monica Crinion, P.E.

This year, the Illinois Section combined the Student Outreach Committee (K-12 grade) and the Student Chapter Committee (college) into one Student Outreach Committee. The goal of the new committee is to share resources and combine efforts to educate students of all ages about engineering. As professionals, we will look to the younger generation to find new and improved advances in our field to support our growing infrastructure needs. As ASCE members, we have the opportunities and resources to get involved and encourage students to develop an interest and passion for engineering.

K-12 Student Outreach

The ultimate goal for the K-12 Student Outreach is to introduce the world of engineering to

today's youth and inspire them to become tomorrow's engineering leaders. In recent years, there has been a big push to promote the "STEM" (Science, Technology, Engineering, and Mathematics) fields to students. The diversity of professions and societal impacts within STEM fields is so broad that it's important to introduce at an early age. We want students to answer the question "What does an engineer do?" as easily as they would respond to "What does a teacher do?". The Illinois Section K-12 Outreach committee supports this initiative by participating in several events throughout the year including the Girl Scouts STEMapalooza, Future Cities competition and the DuPage Engineers Week Expo. ASCE provides training and resource materials for these student outreach events through their website at http://www.asce.org/pre-college_outreach/.

In addition to these large scale expositions, outreach committee members regularly participate in local high-school career days and classroom visits with students considering engineering as a career. The engineers share their insights and professional experiences and encourage interaction and questions from the students. The small group visits are an excellent way to mentor and encourage students to pursue engineering in college.

University Outreach

University Outreach is a great way for professionals to network with college students who will soon enter the workforce. By supporting our student members, we welcome them into our profession and encourage them to continue their membership with ASCE.

The ASCE Student Chapters within the Illinois Section include the Illinois Institute of Technology, Northwestern University, and the University of Illinois at Chicago. The ASCE-IL Section continues to support the student chapters by making annual university visits and offering different scholarships through its Technical Institutes. Scholarship applications can be found at http://www.isasce.org/scholarships/.

The Illinois Section also supports the student chapters by sponsoring their annual Great Lakes Conference. This year, the competition is being hosted in Chicago by the Illinois Institute of Technology. The Illinois Section has committed to supporting the conference by reaching out to professional members to volunteer (continued on page 16)

ASCE Membership: Apply to be an ASCE Fellow

By Matt Huffman, P.E.

If you have been an ASCE member for over 10 years and have made celebrated contributions and/or developed creative solutions to help change lives, have you considered applying to be an ASCE Fellow??? This prestigious honor is held by fewer than 3.5% of ASCE members and recognizes

Have you considered applying to be an ASCE Fellow???

the important contributions civil engineers make to society. The ASCE Illinois Section encourages our members to consider applying for this honorary membership grade. More information regarding the application process and other exclusive benefits of being an ASCE Fellow can be found on the ASCE website.

Graduating Students and new PEs, upgrade your membership grade

For the nearly 550 students and 585 Associate Members within the Illinois Section, if you are graduating this spring or have recently received your PE, make sure to advance your membership grade:

- Associate Member -- an individual who has a bachelor's degree from an ABET/EAC accredited school in civil engineering or a current member in another engineering society which ASCE has a reciprocal membership agreement.
- Member -- an individual who has a bachelor's degree from an ABET/EAC accredited civil engineering program with a PE or five years' experience; master's or doctorate in civil engineering with a PE or four years' experience; degree from a non-ABET/EAC accredited school with a PE and five years' experience.

The state of membership within the Illinois Section of ASCE is in good health to start off the 2016 year, with nearly 2,950 active engineers, students and retirees. Every year around this time, ASCE National contacts members who have not renewed their National membership for 2016, which currently totals nearly 590 engineers within the Illinois Section, so please urge any colleagues you may know to renew. Additionally, it is critical to pay the Section dues ($30) when renewing your 2016 National membership, which constitutes a majority of our Section income. Please note that ASCE has a membership renewal grace period which lasts until mid-March, so make sure to renew soon!!

Keep your contact and employment information current by logging into your ASCE account

Remember to keep your ASCE account up to date with your latest employment and contact information (ASCE account login).

Please contact Matt Huffman, the Illinois Section Membership Committee Chair, with any membership related questions at mhuffman@cbbel.com.

Matt Huffman is a Project Manager at Christopher B. Burke Engineering, Ltd. within the Phase I Engineering Department.

A New Perspective on Estimating Design Time in Iowa

(continued from page 1)

spent on a specific structure.

Identifying the individual characteristics unique to each structure involved mining data from a detailed database maintained by The Office of Bridges and Structures. The database is known as the PC-Bridge Information System (PC-BRIS) and its purpose is to archive characteristics of the structure associated with each design number. By using the PC-BRIS, it was possible to identify properties of a given structure such as length, width, skew, number of spans, number of beams in the cross section, and curve information.

By combining the design time and structure characteristic data, regression analysis was made possible. The next steps were to choose a type of structure to analyze, make assumptions regarding the structural characteristics relevant to design time, and finally, perform the analysis.

REGRESSION ANALYSIS

One of the first structure types chosen to test the regression analysis method was Pretensioned Prestressed Concrete Beam (PPCB) bridges, as the Iowa DOT designs or oversees the design of many projects of this type (See Figure 1).

After the type of structure to analyze was chosen, characteristics of PPCB bridges that drive the required design time needed to be identified. At the onset of the analysis, characteristics thought to contribute to PPCB bridge design time were: number of spans, span arrangement, pier type, expansion joint type, skew and construction staging. For each characteristic, entries were coded into a database of PPCB bridge projects.

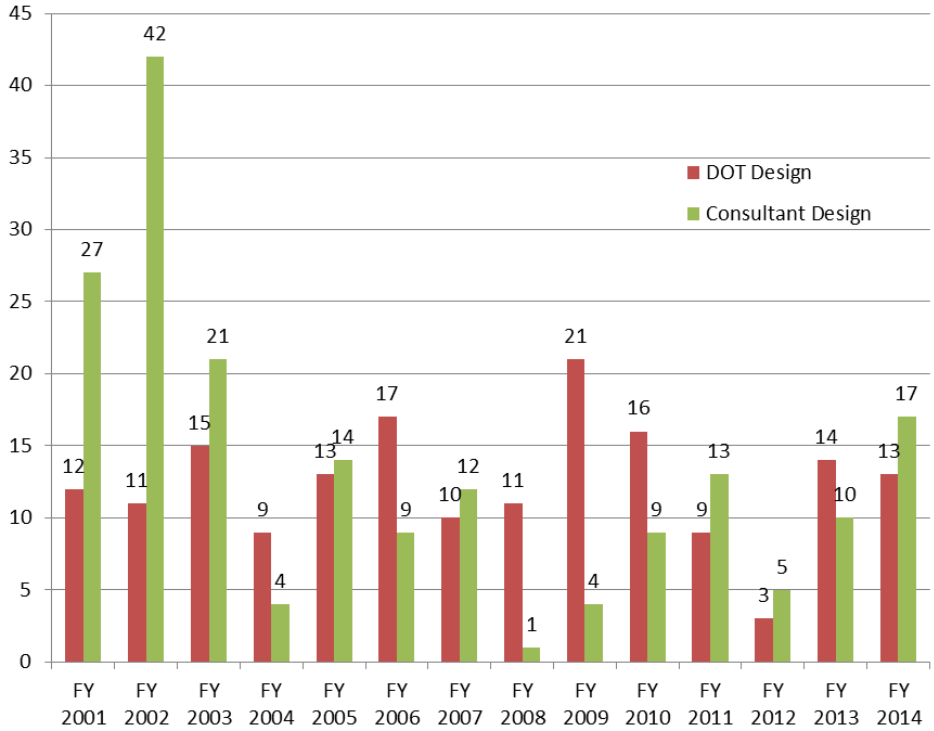

Figure 1 - PPCB Bridge Designs per Fiscal Year by DOT and Consultant Designers

Applying regression analysis to the database resulted in a model that could predict design time

Applying regression analysis to the database resulted in a model that could predict design time with a multiple R of 72%. The multiple R is the most common metric used by statisticians to evaluate the explanatory power of a regression model. A multiple R of 0% indicates that the model explains none of the variability of the data, while 100% indicates that the model explains the data perfectly. Although determining an acceptable multiple R for regression analyses can be a nebulous task, it is safe to say that a multiple R of 72% implies that while the model does indeed possess explanatory power, the accuracy and precision of any given estimate leaves something to be desired.

THE NEXT STEPS

Improving the future accuracy and precision of the model will hinge on a number of factors. For instance, the initial database only contained data from one Iowa

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A New Perspective on Estimating Design Time in Iowa

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DOT Final Design Section over a fifteen year period (45 projects with 6 outliers). Additional work should be done to add data from the second Iowa DOT Final Design Section to the database. Consultant data for PPCB bridges should also be added. A characteristic to indicate whether the project was a consultant design or designed in-house could be added to the regression analysis.

Another potential source of improvement lies in the bridge characteristics evaluated in the model. The model was based on initial assumptions pertaining to the characteristics that contributed in a significant way to design time needed for PPCB bridge projects. Since its initial development, additional characteristics have been identified that can contribute significantly to design time and should be further evaluated for inclusion in the data. New characteristics to consider include bridge aesthetics, deep foundation type (e.g. drilled shafts, driven piling), accelerated bridge construction techniques, deck area, and barrier rail type. The list of additional characteristics to be considered is not exhaustive, but is a starting point for future development.

Work is underway to make the identified improvements to the PPCB model and follow up with the other types of structures projects. Examples of additional project types include continuous concrete slab bridges, reinforced concrete box culverts and retrofit barrier rails. Rapid parametric estimation tools for additional project types will increase the Iowa DOT's ability to effectively resource level and assign work.

CONCLUSION

The regression analysis model for PPCB bridges in Iowa has been demonstrated to be a feasible tool for rapidly providing estimates of design time. However, the quality of the design time estimates will be dependent on continued refinement of the parameters and enlarging the data set in the database.

Jim Nelson, P.E. is a Transportation Engineer Manager with the Iowa Department of Transportation. He has been with the Iowa DOT Office of Bridges and Structures for sixteen years and currently manages a section of engineers and technicians designing bridges, bridge repairs, culverts, and overhead sign trusses.

Emery Waterhouse is an Engineering Specialist at STV Incorporated with 1.5 years of experience on a wide range of infrastructure improvement projects encompassing structural, highway, rail, transportation and water resources design.

Special thanks to Ronald J. Meyer, P.E. for access to compiled Iowa DOT project data and Matthew Haubrich for assistance with the statistical analysis.

2016 ASCE Student Resume Book

The ASCE Illinois Section will be producing its Sixth Annual Resume Book for 2016. Members of the ASCE Student Chapters at the Illinois Institute of Technology, Northwestern University, and University of Illinois at Chicago are invited to submit a one-page resume to be included in the 2016 Resume Book. A pdf copy of the 2016 Resume Book will be freely available to professional members of ASCE in late April upon request. Students wishing to submit a resume, please email a one (1) page resume in pdf format to Stephen Wong, swong@civiltechinc.com by March 28, 2016.

Please remember to include an "Objective" statement in your resume that explains if you are seeking a summer internship or a full-time job. Do not include your address or other information that you would not wish to be viewed publicly. By submitting your resume for resume inclusion, you are signifying legal permission for ASCE to use your resume for the stated purpose.

SE Licensure and Partial Practice Laws: Effects on the Geotechnical Profession

(continued from page 3)

Another approach has been taken by Connecticut. It requires an independent review by a S.E. of the plans and specifications for structures beyond certain thresholds, related to size and occupancy of structures. The review is payed for by the owner and the local building official decides who qualifies as a competent structural engineer.

Independent of any post-P.E. licensure, the code of ethics of a professional engineer dictates that no licensed professional should practice outside their area of competence. So if this simple dictate was followed, there would be no need for partial practice laws. Unfortunately, these laws were not promulgated without cause.

However, it is easy to imagine that the practice of geotechnical engineering will be affected adversely by passage of these partial practice laws without special consideration for geo-structures. Having practiced in Illinois for more years that I care to admit, I have seen how geotechnical engineering in Illinois occasionally is relegated to providing drilling services and logs of borings to A/E firms or contractors for a structure that would certainly be considered a "designated structure." Let's just say that in a number of cases, the public welfare was not served.

How have some states addressed this issue? The Nevada law provides one approach. In it, they limit the portion of the structure that is "designated" to that above ground, for example "A building more than 45 feet in height, using the bottom of the lowest footing or the top of the pile cap as the point of reference," and "A structure requiring special expertise, including, but not limited to, a radio tower and a sign over 100 feet in height, using the bottom of the lowest footing or the top of the pile cap as the point of reference. Dynamic machinery and related equipment within the scope of mechanical engineering are not included." The Nevada law suggests that when a system or component of any project requires specialty engineering services, such services should be provided by an appropriately qualified and licensed professional engineer. Examples of such components include specialty foundations, geotechnical structures, electrical, and mechanical systems.

The GeoInstitute and the Structural Engineering Institute reach agreement on the definition of designated structures

The joint task force recently agreed on a draft of a consensus document to be adopted as a policy statement by both Institutes. And the Board of Governors of both the GI and the SEI quickly approved the document. The following is the approved consensus document regarding G*eo-structures* and SE licensure.

Structural Engineering (SE) licensure is intended to be applied to designated significant structures. It is expected that designated significant structures will typically represent a relatively small number of all buildings and structures within a given jurisdiction. Those buildings and structures that fall outside of established thresholds could be designed by any appropriately qualified and licensed professional engineer.

Geostructures defined and examples provided

This document defines *Geo-Structures* which are any structure that is loaded by or whose resistance is derived from the earth, such as earth retaining systems and foundations.

Geostructures to be excluded from requirements of partial practice laws

Because the design of both temporary and permanent *Geo-Structures* may involve structural engineers, geotechnical engineers, civil engineers or any combination thereof, *Geo-Structures* should not be subject to designated thresholds contemplated for SE licensure, even when these *Geo-*

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SE Licensure and Partial Practice Laws: Effects on the Geotechnical Profession

(continued from page 9)

Structures support a designated structure. In all cases, an appropriately qualified and licensed professional engineer shall be in responsible charge of the work. The following are examples of *Geo-Structures*:

Temporary and Permanent Earth Retaining Systems

- Conventional gravity walls
- Modular gravity walls
- Mechanically Stabilized Earth (MSE) walls
- Non-gravity cantilever walls
- Tieback anchored walls
- Soil nail walls
- Landslide stabilization systems (using any of those systems described above)
- "Support of Excavation" systems (permanent or temporary)

Shallow and Deep Foundations

- Drilled shafts
- Piles, Micropiles, Tiedowns
- Ground improvement
- Rigid inclusions

Underpinning of Structures Affected by Excavations

Shafts and Tunnels

Dikes (not used as secondary containment), Dams and Levees, Soil and Rock Slopes

The adoption of the policy by ASCE and by the states that may eventually adopt this policy at part of structural licensure for designated structures should allay concerns of geotechnical engineers regarding partial practice laws.

GI members who have served on two renditions of this GI joint task force are Hubert Deaton, John Wolosick, Paul Sabatini, Allen Marr and Rich Finno. The SEI task force included David Odeh, Randall Bernhardt and Greg Soules.

Rich Finno is a Professor of Civil Engineering at Northwestern University specializing in geotechnical engineering. In addition to his work with the joint task force, he served as Chair of the Earth Retaining Sturctures Committee of ASCE.

Thornton Composite Reservoir

(continued from page 4)

serves the City of Chicago, north and west suburban areas. The tunnel system is complete and terminates at the Mainstream Pumping station in Hodgkins, Illinois. The tunnel is dewatered by pumping it back to the Stickney Water Reclamation Plant. The last portion of the Mainstream/Des Plaines system is the reservoir portion that is currently being constructed by the Army Corps of Engineers in Bedford Park. Completion of Phase 1of the reservoir is expected in 2017. The Calumet tunnel system terminates at the Calumet Water Reclamation Plant in Chicago, where a dedicated pump station dewaters the tunnel and directs the flow into the Calumet plant headworks. With the commissioning of the Thornton Composite Reservoir, the Calumet portion of the TARP system is now complete and will improve water quality and reduce flooding in the 14 communities that are served by it.

The Thornton Composite Reservoir is located in the north lobe of the Hanson Material Service quarry. The quarry has been in operation since 1869 and still provides high quality dolomite limestone aggregates to the construction industry. After the MWRD entered into an agreement with Hanson Material Service to build the reservoir in 1998, mining continued in the north lobe as preliminary work began on the reservoir. Mining operations in the north lobe ceased in 2013. In order to isolate the north lobe of the quarry from the remaining mining operations, a concrete dam was constructed under the Illinois Toll Highway Authority's Tri-State Tollway bridge that carries Interstate 80/294 over the quarry. Additionally, two existing haul tunnels connecting the north lobe with the quarry south of Interstate 80 were plugged with concrete to isolate the north lobe from the remaining quarry.

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Thornton Composite Reservoir

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To address concerns about groundwater contamination when raw sewage is stored in the north lobe, a grout curtain was constructed around the perimeter of the north lobe. The grout curtain consists of two rows of grout holes cored at an angle of 15- degrees in order to intercept and fill fissures and seams in the native rock formation and reduce the permeability of the rock mass outside of the north lobe. The grout holes are approximately 5 feet on center. The grout curtain extends down to a maximum depth approximately 500 feet below grade where a bedding plane of impermeable shale is found. The perimeter of the grout curtain is approximately two miles in length.

One of the four roller gates used in the gate chamber. The jet-flow gate can be seen at the bottom of the gate.

In order to control the filling and emptying of the reservoir a gate shaft was constructed. The shaft is located 1300 feet north of the reservoir. From the gate shaft a connecting tunnel was mined out to the northeast corner of the north lobe where the inflow will spill out onto a reinforced concrete apron. The remaining portion of the floor of the reservoir is simply the existing rock surface. The connection tunnel from the Reservoir bifurcates into two steel lined chambers approximately 300 feet upstream of the gate shaft. Within the gate shaft chambers hydraulically operated roller gates are used to isolate the tunnel from the reservoir. Within each chamber two roller gates were installed in sequence that can withstand a hydraulic head of 300 feet. The gates are 18 feet wide by 28 feet high and each gate weighs approximately 100 tons. There are four roller gates in total. Within the roller gate is a smaller gate called a jet-flow gate that is opened to allow drawdown of the reservoir to begin without opening the roller gate itself. When the capacity of the reservoir is needed, the gates are lifted and water can flow into the reservoir. After the precipitation event has passed, the roller gates are lowered to trap water in the reservoir while the tunnel system is dewatered by pumping the water into the Calumet Plant headworks. As additional treatment capacity becomes available, the jet-flow gates within the roller gates will be opened to allow the water in the reservoir to drain slowly into the tunnel and to the Calumet Plant. It is expected that the dewatering of the reservoir will take several weeks to accomplish. Because of the time to dewater the reservoir and the current operational plan to maintain a pool of water in the reservoir, aerators will be provided to minimize odors from the water standing in the reservoir. The aerators will be energized by the use of solar power and float in the permanent pool.

Massive 100 ton control gates installed for Thornton Composite Reservoir.

The total project cost for the reservoir improvements is projected at $429 million.

TARP has been a "mega" project similar to the Interstate Highway System or the City of Chicago's water treatment and distribution system. A long term commitment by the political structure to the funding and construction of such a mega project allows the civil engineering community to make improvements to our quality of life possible.

Video of the Thornton Composite Reservoir's taking water for the first time in November, 2015.

Jerome F. McGovern, P.E., retired from the MWRD in 2014 as a Principal Civil Engineer. Thanks to Mr. Kevin Fitzpatrick P.E., Supervising Civil Engineer at MWRD for his review and suggestions for this article.

ILLINOIS SECTION ASCE
CENTENNIAL YEAR SPONSORSHIP

Turning 100 is a momentous event, and we hope that you join us in celebrating the feats of our local civil engineering history in "America's Engineering Hub" by becoming a Centennial Sponsor.

With a one-time donation of ***$3,000*** you will receive ***top billings*** at the following Illinois Section Centennial Events:

- 2016 President-Elect Spring Student Scholarship Dinner—April 19, 2016
- Summer Social Gathering—June 3, 2016
- 2016 Civil Engineering Boat Tour—August 12, 2016
- 2016 Annual Awards Dinner Gala—October 2016

As a Centennial Sponsor, your company name will be displayed throughout the 2016 year on the Illinois Section's Centennial Webpage at http://www.isasce.org/centennial-anniversary/.

ASCE ILLINOIS SECTION

To become a Centennial Sponsor, please go to:

https://www.123signup.com/register?id=pnhvq

For More Information, please contact:

Thera Baldauf

Phone: 312-831-3043
Email: Thera.a.baldauf@mwhglobal.com

Illinois Section News & Secretary Report

March 2016

In an effort to inform Illinois Section members of the discussions at the monthly Board meetings, the Section Secretary contributes this quarterly article to the newsletter. Any questions or comments on the Board activities are welcome by contacting John Lazzara, at John.Lazzara@hdrinc.com.

■ *Treasurer's Report*

▲ A treasurer's report was presented at the December, January, and February meetings. All reports were approved with no changes.

■ *Highlights from Illinois Section Activities and Group Reports.*

▲The new Region 3 Director is George Abdallah Ghareeb from the Central Illinois Area.

▲ ***Holiday Party/Toys for Tots Fund*** – The holiday party was held on Dec. 17th at Ovie. The event turned out great with 101 people attending.

▲ ***Future Cities Competition (January 9, 2016)*** – In addition to organizing the event, many ASCE members volunteered as judges. The Illinois Section and some of the Institutes/Groups sponsored various awards again this year.

▲ ***2016 Multi Region Leadership Conference (MRLC)*** – The MRLC was held January 15-16, 2016. The YMG organized and hosted a few well attended social events. The Illinois Section won the 2015 Outstanding Section and Branch Web Site Award. YMG won an award for their Canstruction participation. An Envision sustainability training session was also conducted immediately prior to the conference.

▲ ***TFIC Membership*** – The Illinois Section is continuing its involvement with TFIC and will be covering the membership dues.

▲ ***YMG By-Laws Review*** – The Board reviewed and approved the YMG By-Laws.

▲ ***Annual President-Elect/Student Scholarship Spring Dinner*** – The event is confirmed for April 19th at Maggiano's. The Order of the Engineer ceremony will also be conducted at the event. The ASCE National President-Elect will be attending.

▲ ***Region 3 IDOT Initiative*** – An initial meeting was held with Secretary Blankenhorn and his management team on January 12th in Springfield. ASCE will be working with other professional organizations on industry training programs that will benefit ASCE members as well as IDOT staff.

▲ ***IDOT/Public Agency Involvement with ASCE*** – A package of information outlining ASCE membership and benefits was provided to IDOT to distribute to new employees. Future ASCE events will be planned at the IDOT office.

▲ ***ASCE Foundation Grant Application & SPAG*** – The Illinois Section applied for and received two grants for the Legislative Drive Down ($500) and the Centennial Celebration ($1,000).

▲ ***UP&D Group*** – The first group meeting was held on January 21st at Dirty Nellies in Palatine.

▲ ***Student Outreach*** – The college scholarship program is being streamlined this year so students will now complete a single application form and indicate their top technical categories. The Institutes and Groups will then review the applications and make their selections.

▲ ***100th Anniversary Committee*** – 27 people attended the Winter Event held at King's Lanes in Rosemont on January 28th; a Schaumburg Flyers game outing is scheduled for June 3, 2016; and a Chicago boat tour will be in August. Special Centennial Pins were created to honor the Illinois Section.

▲ ***IIT Great Lakes Student Conference (GLSC)*** – The GLSC will be held April 14-16, 2016 with approximately 18 universities participating. This event is a great way to get involved with civil engineering students by judging various competitions, build your network of contacts, and have some fun!

The Illinois Section Board Meetings are held every first Monday of every month with the exception of holidays. The next board meeting is scheduled for March 7, 2016 at 5:30pm at HNTB office located at One S. Wacker Drive, Suite 900, Chicago. Future meetings will be held on April 4th, May 2nd, and June 6th.

By John Lazzara
John.Lazzara@hdrinc.com

ONLY $20 / PERSON
(INCLUDES DINNER & TICKET)

ASCE Family Baseball Outing

June 3, 2016

5:30pm Dinner
6:30pm Game
Fireworks After the Game

Bring the family and join ASCE watch the Schaumburg Boomers take on the River City Rascals. Food and beverages will be available beginning at 5:30pm (food ends at 7:00pm). You may sit in the air conditioned Schaumburg Club or watch the game outside along the first base line.

Dinner and soft drinks are included with your ticket.

Address
1999 South Springinsguth Road
Schaumburg, IL 60193

Dinner Includes:

- Grilled Chicken Breast
- Grilled Hamburgers
- All-Beef Hot Dogs
- Bratwurst
- Chips Potato Salad
- Ice Cream
- Soft Drinks & Water
- Alcoholic Drinks Are Provided at a Cash Bar

To register you and your family, please sign up at
https://www.123signup.com/register?id=pnkvg

Contact Mike MacKinnon for sponsorship opportunities at mike@banburycre.com

Illinois Section Activities

ASCE IL Section Student Outreach-Volunteer Event

Girl Scouts STEMapalooza

Date: Sunday, March 6
Time: 8:00 am – 2:00 pm
Place: Friendship Center
Country Club Hills
RSVP: Liz Trumball (elizabethtrumbull2014@u.northwestern.edu)
Amoridja Vasidevam (Anirudha.vasudevan@aecom.com)
Kris Salvatera (ksalvatera@cmtengr.com)

ASCE IL Section EWRI Chapter Board Meeting

Date: Tuesday, March 8
Time: 5:30pm - 6:30pm
Place: Baxter & Woodman Inc.
8430 W. Bryn Mawr Ave., Suite 400
Chicago, IL 60031

ASCE IL Section GI Dinner Meeting

Geotechnical Design of MSE Walls Supporting Bridge Abutments

Date: Tuesday, March 8
Place: Pazzo's
311 S. Wacker Drive
Chicago, IL 60606
Time: 5:15 pm Cocktails
6:15 pm Dinner
Presentation following dinner
Cost: $45-with reservation
$35-Government/Education with reservation
$25-students – with reservation
$50-at the door OR if you call after RSVP date
(Make checks payable to ASCE Geotechnical Group)
RSVP: Friday March 4th at 12:00
https://www.123signup.com/register?id=pptyr
asceilgeotech@gmail.com
Sara Knight (847) 489-9175

Dinner Flyer

ASCE IL Section SEI March Lunch Meeting

Design for Lateral-Load Resistance in Structural Steel (On Demand ASCE Webinar)

Date: Thursday, March 10
Time: 11:30 am to 1:00 pm
Place: Jacobs
525 W. Monroe Ave.
Suite 200
Chicago, IL
Cost: $20 – with reservation on or before March 8th, 2016
$20 – without/late RSVP
(Responsible for your own lunch)
Make checks payable to ASCE Structural Group
CEU: CEU 0.2 CEU (2 PDH equivalent) will be awarded through ASCE continuing education at the completion of a test. Steps to follow will be provided at the completion of webinar.
RSVP: Jessy Rojas, asce.il.struct@gmail.com by March 8th, 2016

Lunch Flyer

ASCE IL Section YMG and ISPE Joint Dinner Meeting

Loop Link-Modern and Reliable Transportation System in the Loop

Date: Thursday, March 10
Time: 5:30pm - 7:00pm
Place: Milhouse Engineering and Construction
60 E. Van Buren St., Ste 1501
Chicago, IL 60605
Cost: $30 General
$10 Full-Time Students
RSVP: For more information and to register click HERE
Space is limited so please RSVP by Thursday March 3rd.
PDH's: 1.0 PDH will be provided at the Dinner Meeting.

ASCE IL Section Student Outreach – Volunteer Event

STEM Discovery Night

Date: Monday, March 14
Time: 5:30 pm – 8:00 pm
Place: Meadow Glens Elementary School
1150 Muirhead Ave.
Naperville, IL 60565
RSVP: Kris Salvatera
ksalvatera@cmtengr.com

ASCE IL Section YMG and ISPE After Work Presentation and Networking Event (SAVE THE DATE)

Featuring Engineers Without Borders, Chicagoland Professional Chapter

Date: Wednesday, March 16
Time: 5:30 pm-8:00 pm

Information and Tickets

ASCE IL Section SEI March Dinner Meeting

Clark/LaSalle/Division Subway Station Rehabilitation and New Mezzanine

Date: Wednesday, March 23
Time: 5:30 pm Cocktails
6:00 pm Dinner
Presentation following dinner
Place: Elephant and Castle
111 W. Adams Street
Chicago, IL 60603
Cost: $50-with reservation
$35-Government/Education with reservation
$25-for full time students – with reservation
$5 fee- without/late RSVP
RSVP: Jesse Rojas, asce.il.struct@gmail.com by March 18, 2016
PDH: 1.0 PDH will be awarded for continuing education

Dinner Flyer

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Section Activities

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ASCE IL Section SEI Fracture Critical Inspection Techniques for Steel Bridges – NHI Course #130078

Date: April 5-8 (3.5 days)
Place: Alfred Benesch & Company
Rotham Cener, 23rd Floor
205 N. Michigan Ave.
Chicago, IL
Cost: $1,200-includes course registration, course materials, breakfast and lunch
RSVP: Email: tjanicke@benesch.com by Tuesday March 15th, 2016.

Course Flyer

ASCE IL Section President Elect/Student Scholarship Dinner (SAVE THE DATE)

Order of the Engineer Ring Ceremony will also be held at the dinner

Date: Tuesday, April 19
Place: Maggiano's
111 W. Grand Ave.
Chicago, IL

For all Section, Group and Committee events, check out the Section website at:

www.isasce.org/web/section/calendar.html

ASCE IL Section Family Baseball Outing

Date: Friday, June 3
Place: Schaumburg Boomers
1999 S. Springinsguth Road
Schaumburg, IL 60193
Cost: $20/person (includes dinner & ticket)
Registration:
https://www.123signup.com/register?id=pnkvg

The Importance of Student Outreach

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as judges and to partake in the professional/ student networking event.

The Student Outreach Committee

The Student Outreach Committee is working with various Institutes and organizations to coordinate volunteer opportunities for ASCE members to get actively involved and share their experiences and inspire young engineers. For more information on the committee's activities and outreach programs, check out our webpage at http://www.isasce.org/committees/student-outreach-committee/ or email us directly at stoutcommitte@gmail.com.

Kris Salvatera is a Transportation Design Engineer with Crawford, Murphy & Tilly and is the chair for the Student Outreach Committee.

Monica Crinion is a Project Engineer specializing in structural design with WBK Engineering, LLC and the former Outreach Director for ASCE YMG and current Student Outreach Committee member.

President's Notes

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will be running a table at the STEM Discovery Night at the Meadow Glens Elementary School in Naperville. For those interested, please refer to the Illinois Section E-blasts for more information.

Also, the Illinois Institute of Technology will be hosting the 2016 Great Lakes Competition this coming April 14-16 where students from over 18 universities will participate in competitions including the Steel Bridge and Concrete Canoe. The IIT ASCE Student Chapter are still looking for volunteers to judge several of these competitions.

Looking forward to warmer weather and seeing you all at one of our Section's upcoming spring events!